High Schools Tailored To Adults Can Help Them Complete a Traditional Diploma and Excel in the Labor Market Rebecca Brough, David Phillips, and Patrick Turner

Online Appendix


Figure A-1: Distribution of Propensity Scores, by TEC Completion Status

Notes: Each figure shows the distribution of propensity scores estimated by logit. In panel (a), the outcome is enrolling at TEC estimated for our main analysis sample, and in panel (b) it is graduating from TEC estimated among applicants who enroll. In both panels, the predictors are quarterly pre-period employment, quarterly pre-period earnings, an indicator for employment in the year prior to application, demographics from K-12 data (race, gender, free/reduced lunch, homeless), application quarter indicators, and age ventile indicators.


Figure A-2: Enrollment Trajectory, by TEC Completion Status

Notes: Data come from TEC application records and enrollment records reported by Goodwill to the Indiana Department of Education. The Excel Center school year includes five 8-week terms. The horizontal axis denotes the school term relative to application, where term 0 is the first term starting on or after an application date. We code a student as enrolled in a given term if they have an enrollment spell that overlaps with the start and end dates of the term. The sample includes all TEC applicants that can be linked to enrollment records (have a student test number) and could potentially be observed in all 21 relative school terms. The figure plots the enrollment rates of TEC graduates (navy circles) and TEC students who did not graduates (gold diamonds).


Figure A-3: Ever Passed Graduation Qualifying Exam as Measured by DOE Records

Notes: Data come from TEC application records linked to testing records from the Indiana Department of Education (DOE). Since the data do not have test dates, we measure whether each person has ever passed both English and Mathematics, as of 2020.

(b) Ever Passed GED

Figure A-4: Share Taking and Passing the GED, by TEC Completion Status

Notes: Data come from TEC application records linked to GED completion data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record, and is divided into three groups: TEC graduates (navy circles), TEC students who did not graduate (gold diamonds), and TEC applicants who did not enroll (teal triangles). The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. Panel A plots the share who have attempted the GED by the indicated quarter. Similarly, Panel B plots the share that have ever passed the GED.


Figure A-5: Unweighted Event Study of Earnings, by Quarters Since Application

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. The figure plots the regression coefficients from three event study specifications that compare (1) the employment and earnings of TEC graduates to TEC students who did not graduate (navy circles); (2) TEC students who did not graduate to TEC applicants who did not enroll (gold diamonds); (3) TEC graduates to TEC applicants who did not enroll (teal triangles); and (4) all TEC students to TEC applicants who did not enroll (gray squares), controlling for individual fixed effects, calendar quarter fixed effects, and fixed effects for the interactions of calendar quarter and initial age ventile. Observations are unweighted. The outcomes are an indicator for unconditional total earnings (Panel A), positive earnings (2014Q1 USD) (Panel B), and average earnings among individuals with positive earnings (Panel C). The reference quarter is the quarter before application. Vertical bars represent 95 percent confidence intervals, where standard errors are clustered at the individual level.


Figure A-6: Comparison of Graduates to Enrollees Who Drop Out, by Exit Reason


#### Abstract

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development and TEC enrollment records. The sample includes all TEC students who applied between January 2013 through June 2015 , had any pre-application MPH record, enrolled in TEC, and had a listed exit reason. TEC students are divided into groups based on the reason they exited the school, either because of graduation or their reason for dropping out. The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. Panel A plots average unconditional quarterly UI-covered earnings (2014Q1 USD) of TEC graduates (light gold circles) and TEC students who exit because of a work conflict (navy diamonds), lack of interest in the curriculum (gold square), stopped coming to school (teal triangle), and had interpersonal problems (light gray plus sign). Panel B plots the regression coefficients from event study specifications that compare the earnings of TEC graduates to TEC students who exited for the reasons listed above, controlling for individual fixed effects, calendar quarter fixed effects, and fixed effects for the interactions of relative quarter and initial age ventile. The reference quarter is the quarter before application. Vertical bars represent 95 percent confidence intervals on the estimates for "vs Work conflict" exit reason, where standard errors are clustered at the individual level.




Figure A-7: Earnings Trends, by Time Relative to Exit and Exit Reason

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC students who applied between January 2013 through June 2015, had any pre-application MPH record, enrolled in TEC without graduating, and had a listed exit reason. The horizontal axis indicates quarter relative to the time the person exited TEC. The figure plots total unconditional earnings (2014Q1 USD), winsorized at $99 \%$.


Figure A-8: Comparison of Graduates to Enrollees Who Drop Out, by Number of Terms Enrolled

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development and TEC enrollment records. The sample includes all TEC students who applied between January 2013 through June 2015 with any pre-application MPH record. TEC students are divided into groups based on the number of terms they ever enrolled at TEC. The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. Panel A plots average quarterly UI-covered earnings (2014Q1 USD) of TEC graduates (light gray circles) and TEC enrollees who exited after 0-5 terms (navy squares), 6-10 terms (gold diamonds), and $11+$ terms (teal plus signs). Panel B plots the regression coefficients from an event study specification that compares the earnings of TEC graduates to TEC students who exited after the number of terms listed, controlling for individual fixed effects, calendar quarter fixed effects, and relative quarter-age ventile fixed effects. The reference quarter is the quarter before application. Vertical bars represent 95 percent confidence intervals for the $11+$ terms comparison, where standard errors are clustered at the individual level.


Figure A-9: Comparison of Graduates to Non-Graduates, 23 or Younger at Application

[^0]

Figure A-10: Comparison of Graduates to Non-Graduates, 24 or Older at Application

[^1]

Figure A-11: Effect of Passing the GED on Earnings

Notes: Data come from TEC application records linked to GED completion and UI earnings data from the Indiana Department of Workforce Development. The sample includes all adults in Indiana who attempted the GED exam for the first time between February 2014 and September 2014. Test takers are divided into groups based on whether they passed the GED during their first attempt. The horizontal axis indicates quarter relative to initial GED exam attempt date, where quarter 0 represents the quarter in which an individual first took the GED exam. Panel A plots average quarterly UI-covered earnings (2014Q1 USD) of Hoosiers who passed the GED on their first attempt (navy circles) and Hoosiers who did not pass the GED on their first attempt (gold diamonds). Panel B plots the regression coefficients from an event study specification that compares the earnings of GED passers to GED non-passers, controlling for individual fixed effects, calendar quarter fixed effects, and relative quarter-age ventile fixed effects. The reference quarter is the quarter before the test quarter. Vertical bars represent 95 percent confidence intervals, where standard errors are clustered at the individual level.

Table A-1: State Laws Regarding Adult High School Diplomas

| State | Has Adult Diploma | Adult Diploma $=$ Standard Diploma |
| :---: | :---: | :---: |
| AL | Yes | Yes |
| AK | No |  |
| AZ | No |  |
| AR | No |  |
| CA | Yes | Yes |
| CO | Yes | Yes |
| CT | Yes | No |
| DE | Yes | Yes |
| FL | Yes | Yes |
| GA | No |  |
| HI | No |  |
| ID | No |  |
| IL | Yes | Yes |
| IN | Yes but limited | Yes |
| IA | Yes | No |
| KS | Yes | Yes |
| KY | No |  |
| LA | No |  |
| ME | Yes | Yes |
| MD | Yes | Yes |
| MA | Yes | Yes |
| MI | Yes | Yes |
| MN | Yes | Yes |
| MS | Yes | No |
| MO | Yes but limited | Yes |
| MT | No |  |
| NE | No |  |
| NV | Yes | No |
| NH | Yes | No |
| NJ | Yes | Yes |
| NM | No |  |
| NY | Yes | No |
| NC | Yes | Yes |
| ND | No |  |
| OH | Yes | Yes |
| OK | No |  |
| OR | Yes | Yes |
| PA | No |  |
| RI | Yes | Yes |
| SC | No |  |
| SD | No |  |
| TN | Yes but limited | Yes |
| TX | Yes | Yes |
| UT | Yes but limited | Yes |
| VT | Yes | Yes |
| VA | Yes | Yes |
| WA | Yes | No |
| WV | No |  |
| WI | Yes | No |
| WY | No |  |

Notes: Coded from state government websites between June 2020 and April 2021.

Table A-2: The Excel Center Campuses Operated by Goodwill of Central \& Southern Indiana

| IDOE School Name | City | Start Month |
| :--- | :--- | :---: |
| Excel Center for Adult Learners - Michigan St Campus | Indianapolis, IN | July 2011 |
| Excel Center for Adult Learners - Decatur Campus | Indianapolis, IN | July 2011 |
| Excel Center for Adult Learners - Meadows Campus | Indianapolis, IN | July 2011 |
| Excel Center for Adult Learners - Franklin Campus | Indianapolis, IN | July 2012 |
| Excel Center - Anderson | Anderson, IN | August 2012 |
| Excel Center - Lafayette | Lafayette, IN | August 2013 |
| Excel Center - Richmond | Richmond, IN | August 2013 |
| Excel Center - Lafayette Square | Indianapolis, IN | August 2013 |
| Excel Center - Kokomo | Kokomo, IN | August 2013 |
| Excel Center - University Heights | Indianapolis, IN | August 2015 |
| Excel Center - Noblesville | Nobleville, IN | August 2015 |
| Excel Center - Shelbyville | Shelbyville, IN | August 2016 |
| Excel Center - Clarksville | Clarksville, IN | July 2017 |
| Excel Center - Muncie | Muncie, IN | July 2018 |
| Excel Center - Bloomington | Bloomington, IN | July 2019 |

Notes: Dates from school calendar start dates provided by Goodwill. The four campuses under the Excel Center for Adult Learners fall under a single charter as one school, but operate as four separate campuses.

Table A-3: Effect of Enrollment and Graduation from The Excel Center on Quarterly Earnings, No Winsorizing

|  | Fixed Effects <br> (1) | Fixed Effects <br> (2) | Fixed Effects <br> (3) | Weighted <br> (4) | Weighted <br> (5) | Weighted SD <br> (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} -124.28^{* * *} \\ (35.52) \end{gathered}$ | $\begin{gathered} -101.84^{* * *} \\ (37.25) \end{gathered}$ | $\begin{gathered} -124.37^{* * *} \\ (37.32) \end{gathered}$ | $\begin{gathered} -84.14^{* *} \\ (36.88) \end{gathered}$ | $\begin{gathered} -77.37^{* *} \\ (36.31) \end{gathered}$ | $\begin{gathered} -22.15 \\ (55.20) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{gathered} 17.40 \\ (45.33) \end{gathered}$ | $\begin{gathered} 4.90 \\ (47.36) \end{gathered}$ | $\begin{aligned} & -36.03 \\ & (47.29) \end{aligned}$ | $\begin{gathered} -1.99 \\ (48.26) \end{gathered}$ | $\begin{gathered} 8.62 \\ (47.82) \end{gathered}$ | $\begin{gathered} 60.00 \\ (62.14) \end{gathered}$ |
| Enrolled X Year 3 | $\begin{gathered} 206.99^{* * *} \\ (51.47) \end{gathered}$ | $\begin{aligned} & 97.61^{*} \\ & (53.22) \end{aligned}$ | $\begin{gathered} 54.03 \\ (53.24) \end{gathered}$ | $\begin{aligned} & 98.45^{*} \\ & (54.57) \end{aligned}$ | $\begin{gathered} 110.58^{* *} \\ (54.14) \end{gathered}$ | $\begin{gathered} 160.44^{* *} \\ (66.75) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 302.07^{* * *} \\ (57.46) \end{gathered}$ | $\begin{gathered} 143.16^{* *} \\ (59.55) \end{gathered}$ | $\begin{gathered} 90.73 \\ (59.40) \end{gathered}$ | $\begin{gathered} 102.45^{*} \\ (60.91) \end{gathered}$ | $\begin{gathered} 117.51^{*} \\ (60.22) \end{gathered}$ | $\begin{gathered} 164.44^{* *} \\ (70.35) \end{gathered}$ |
| Enrolled X Year 5 | $\begin{gathered} 329.42^{* * *} \\ (64.23) \end{gathered}$ | $\begin{gathered} 169.13^{* *} \\ (66.65) \end{gathered}$ | $\begin{aligned} & 115.25^{*} \\ & (66.36) \end{aligned}$ | $\begin{gathered} 151.04^{* *} \\ (67.19) \end{gathered}$ | $\begin{gathered} 165.41^{* *} \\ (66.64) \end{gathered}$ | $\begin{gathered} 213.03^{* * *} \\ (76.81) \end{gathered}$ |
| Graduated X Year 1 |  | $\begin{gathered} -100.32^{* *} \\ (47.74) \end{gathered}$ | $\begin{gathered} -142.66^{* * *} \\ (47.03) \end{gathered}$ | $\begin{gathered} -141.12^{* *} \\ (60.43) \end{gathered}$ | $\begin{gathered} -142.68^{* *} \\ (59.38) \end{gathered}$ | $\begin{gathered} -94.12 \\ (113.01) \end{gathered}$ |
| Graduated X Year 2 |  | $\begin{gathered} 55.84 \\ (62.27) \end{gathered}$ | $\begin{aligned} & -17.17 \\ & (61.37) \end{aligned}$ | $\begin{aligned} & -35.74 \\ & (71.52) \end{aligned}$ | $\begin{aligned} & -37.30 \\ & (69.43) \end{aligned}$ | $\begin{gathered} 11.26 \\ (117.00) \end{gathered}$ |
| Graduated X Year 3 |  | $\begin{gathered} 488.82^{* * *} \\ (76.25) \end{gathered}$ | $\begin{gathered} 404.05^{* * *} \\ (75.42) \end{gathered}$ | $\begin{gathered} 370.57^{* * *} \\ (85.03) \end{gathered}$ | $\begin{gathered} 368.38^{* * *} \\ (82.96) \end{gathered}$ | $\begin{gathered} 417.57^{* * *} \\ (123.44) \end{gathered}$ |
| Graduated X Year 4 |  | $\begin{gathered} 710.17^{* * *} \\ (86.09) \end{gathered}$ | $\begin{gathered} 604.12^{* * *} \\ (85.55) \end{gathered}$ | $\begin{gathered} 652.95^{* * *} \\ (97.96) \end{gathered}$ | $\begin{gathered} 649.59^{* * *} \\ (96.84) \end{gathered}$ | $\begin{gathered} 699.95 * * * \\ (138.04) \end{gathered}$ |
| Graduated X Year 5 |  | $\begin{gathered} 716.34^{* * *} \\ (92.76) \end{gathered}$ | $\begin{gathered} 605.30^{* * *} \\ (92.52) \end{gathered}$ | $\begin{gathered} 684.91^{* * *} \\ (106.72) \end{gathered}$ | $\begin{gathered} 680.83^{* * *} \\ (105.68) \end{gathered}$ | $\begin{gathered} 731.91^{* * *} \\ (143.44) \end{gathered}$ |
| Relative Quarter FE | X | X | X | X | X | X |
| Person FE | X | X | X | X | X |  |
| Calendar Quarter FE |  |  | X |  | X |  |
| Age Bin X Relative Quarter FE |  |  | X |  | X |  |
| Comp. Mean-Year 1 | 1,698 | 1,698 | 1,698 | 1,502 | 1,502 | 1,502 |
| Comp. Mean-Year 2 | 2,040 | 2,040 | 2,040 | 1,865 | 1,865 | 1,865 |
| Comp. Mean-Year 3 | 2,201 | 2,201 | 2,201 | 2,025 | 2,025 | 2,025 |
| Comp. Mean-Year 4 | 2,298 | 2,298 | 2,298 | 2,154 | 2,154 | 2,154 |
| Comp. Mean-Year 5 | 2,444 | 2,444 | 2,444 | 2,276 | 2,276 | 2,276 |
| $P\left(\hat{\beta}_{-}\right.$Pre $\left.-E^{\text {Enroll }}{ }^{1--8}=0\right)$ | 0.390 | 0.278 | 0.398 | 1.000 | 1.000 | 0.974 |
| $P\left(\hat{\beta}_{-}\right.$Pre $\left.-\mathrm{Grad}^{1--8}=0\right)$ |  | 0.695 | 0.330 | 0.951 | 0.953 | 0.953 |
| $R^{2}$ | 0.58 | 0.58 | 0.59 | 0.60 | 0.60 | 0.02 |
| Observations | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 189,300 |
| Individuals | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date, and the data are a balanced panel from quarter - 20 to quarter 19. The outcome is unconditional total quarterly earnings (2014Q1 USD), not winsorized. Non-employment is coded as zero earnings. Columns (4) through (6) are reweighted using inverse propensity score weights. See text for details. Column (6) is a single-difference specification that only includes the 20 post-period quarters. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-4: Effect of Graduation on Living Out of State

|  | Fixed Effects | Fixed Effects | Weighted | Weighted | Weighted SD |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ |
| Enrolled X Year 1 | -0.001 | -0.000 | 0.003 | 0.003 | 0.003 |
|  | $(0.006)$ | $(0.006)$ | $(0.008)$ | $(0.007)$ | $(0.009)$ |
| Enrolled X Year 2 | 0.004 | 0.005 | 0.010 | 0.010 | 0.009 |
|  | $(0.006)$ | $(0.006)$ | $(0.008)$ | $(0.007)$ | $(0.007)$ |
| Enrolled X Year 3 | 0.002 | 0.003 | 0.006 | 0.006 | 0.006 |
|  | $(0.006)$ | $(0.006)$ | $(0.008)$ | $(0.008)$ | $(0.009)$ |
| Enrolled X Year 4 | 0.002 | 0.004 | 0.005 | 0.005 | 0.004 |
|  | $(0.008)$ | $(0.008)$ | $(0.010)$ | $(0.010)$ | $(0.010)$ |
| Enrolled X Year 5 | 0.001 | 0.002 | 0.004 | 0.004 | 0.001 |
|  | $(0.009)$ | $(0.009)$ | $(0.011)$ | $(0.011)$ | $(0.011)$ |
| Graduated X Year 1 | -0.003 | -0.005 | -0.007 | -0.006 | -0.009 |
|  | $(0.006)$ | $(0.006)$ | $(0.008)$ | $(0.008)$ | $(0.010)$ |
| Graduated X Year 2 | -0.006 | -0.008 | -0.012 | -0.011 | -0.014 |
|  | $(0.006)$ | $(0.006)$ | $(0.008)$ | $(0.008)$ | $(0.009)$ |
| Graduated X Year 3 | -0.005 | -0.007 | -0.006 | -0.006 | -0.008 |
|  | $(0.007)$ | $(0.007)$ | $(0.009)$ | $(0.009)$ | $(0.009)$ |
| Graduated X Year 4 | -0.006 | -0.009 | -0.007 | -0.007 | -0.008 |
|  | $(0.008)$ | $(0.008)$ | $(0.011)$ | $(0.011)$ | $(0.011)$ |
| Graduated X Year 5 | -0.005 | -0.009 | -0.011 | -0.011 | -0.009 |
|  | $(0.009)$ | $(0.009)$ | $(0.012)$ | $(0.012)$ | $(0.012)$ |
| Relative Quarter FE | X | X | X | X | X |
| Person FE | X | X | X | X |  |
| Calendar Quarter FE |  | X |  | X |  |
| Age Bin X Relative Quarter FE |  | X |  | X |  |
| Comp. Mean-Year 1 | 0.024 | 0.024 | 0.025 | 0.025 | 0.025 |
| Comp. Mean-Year 2 | 0.027 | 0.027 | 0.028 | 0.028 | 0.028 |
| Comp. Mean-Year 3 | 0.028 | 0.028 | 0.029 | 0.029 | 0.029 |
| Comp. Mean-Year 4 | 0.030 | 0.030 | 0.028 | 0.028 | 0.028 |
| Comp. Mean-Year 5 | 0.036 | 0.036 | 0.034 | 0.034 | 0.034 |
| $R^{2}$ | 0.63 | 0.63 | 0.60 | 0.60 | 0.00 |
| Observations | 130,800 | 130,800 | 130,426 | 130,426 | 65,026 |
| Individuals | 3,270 | 3,270 | 3,270 | 3,270 | 3,270 |
|  |  |  |  |  |  |

Notes: We link TEC application records to address histories from Infutor Data Solutions using name and date of birth. We limit the sample to individuals who match to an address in Infutor prior to applying to TEC. The outcome is an indicator for the most recent recorded address being outside the state of IN. All columns include quarters 0-19 post application. Columns 1-4 include 20 quarters pre-application. Columns 3 and 4 are weighted by an inverse propensity score constructed using indicators for moving in the 20 quarters pre-application, quarter of application indicators, and age at application. Column 5 uses this same IPW, but presents a simple-difference and thus exclude periods pre-application and person FEs. Statistical significance at the 10, 5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-5: Effects on Earnings with Various Difference-in-Difference Methods

|  | TWFE <br> (1) | TWFE <br> (2) | BJS <br> (3) | BJS <br> (4) | BJS Event Time <br> (5) | BJS Event Time <br> (6) | BJS Event Time <br> (7) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | -97.84*** | -114.74*** | -116.51*** | -119.91*** | -111.79*** | -120.10*** | -90.69*** |
|  | (27.34) | (27.34) | (26.40) | (26.05) | (34.87) | (33.08) | (34.06) |
| Enrolled X Year 2 | 66.50* | 38.35 | 38.55 | 25.55 | 3.74 | -20.66 | 2.22 |
|  | (37.84) | (37.88) | (38.85) | (38.39) | (44.72) | (43.68) | (45.58) |
| Enrolled X Year 3 | 119.84*** | 81.55* | 98.45** | 72.93 | 100.39** | 70.93 | 108.72** |
|  | (45.49) | (45.42) | (47.58) | (47.02) | (51.08) | (50.56) | (52.26) |
| Enrolled X Year 4 | 139.45*** | 98.57* | 123.12** | 92.79* | 144.30** | 101.00* | 117.92** |
|  | (51.71) | (51.58) | (53.52) | (52.97) | (56.77) | (56.11) | (57.61) |
| Enrolled X Year 5 | $167.88^{* * *}$ | 122.59** | $166.41^{* * *}$ | $131.51^{* *}$ | 184.96*** | 150.32** | 176.75*** |
|  | (57.43) | (57.20) | (59.47) | (58.95) | (62.27) | (61.60) | (62.96) |
| Graduated X Year 1 | -107.82** | -127.89*** | -105.62** | -99.01** | -98.56** | -113.37** | -141.25** |
|  | (45.66) | (45.32) | (45.46) | (45.60) | (44.94) | (45.09) | (55.23) |
| Graduated X Year 2 | 44.06 | -3.67 | 46.24 | 28.26 | 54.20 | 15.60 | -38.98 |
|  | (59.50) | (58.73) | (59.33) | (59.65) | (59.12) | (59.40) | (65.76) |
| Graduated X Year 3 | 468.75*** | 396.36*** | 470.25*** | 426.24*** | 480.67*** | 425.70*** | $367.17^{* * *}$ |
|  | (73.08) | (72.41) | (72.93) | (73.56) | (72.93) | (73.65) | (79.78) |
| Graduated X Year 4 | 686.50 *** | $598.41^{* * *}$ | $688.67^{* * *}$ | 623.20*** | 698.74*** | 616.66*** | $636.58{ }^{* * *}$ |
|  | (82.34) | (81.98) | (82.49) | (83.29) | (82.58) | (83.60) | (92.77) |
| Graduated X Year 5 | $697.54^{* * *}$ | 598.29*** | 699.26*** | 626.87*** | 709.57*** | 635.79*** | 670.22*** |
|  | (90.01) | (89.78) | (90.23) | (91.14) | (90.31) | (91.58) | (102.02) |
| Panel Period | 2008Q1-2020Q2 | 2008Q1-2020Q2 | 2008Q1-2020Q2 | 2008Q1-2020Q2 | -Q20-Q19 | -Q20-Q19 | -Q20-Q19 |
| Person FE | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X |  | X | X |
| Age Bin X Calendar Quarter FE |  | X |  | X |  |  |  |
| Relative Quarter FE |  |  |  |  | X | X | X |
| Age Bin X Relative Quarter FE |  |  |  |  |  | X | X |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Prel-8 }}=0\right)$ | 0.264 | 0.342 |  |  |  |  |  |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Prel-8 }}=0\right)$ | 0.801 | 0.752 |  |  |  |  |  |
| $P\left(\hat{\beta}_{B J S}^{\text {Pre1--8 }}=0\right)$ |  |  | 0.150 | 0.196 | 0.332 | 0.477 | 1.000 |
| Observations | 473,250 | 473,250 | 438,090 | 438,090 | 378,600 | 378,600 | 378,600 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. In columns (1) through (4), the sample is a balanced quarterly panel from Q1 2008 through Q2 2020. In columns (5) through (7), the sample is a balanced quarterly panel in relative time that includes quarters -20 through 19 . The outcome is quarterly earnings (2014Q1 USD), winsorized at $99 \%$. Non-employment is coded as zero earnings. Columns (1) reports results from a standard two-way fixed effects regression that includes person and calendar quarter fixed effects. Column (2) additionally controls for initial age ventile-calendar quarter fixed effects. Columns (3) through (7) report results using the imputation method of Borusyak et al. (2021). Columns (3) and (4) include the same fixed effects as columns (1) and (2), respectively. Columns (5) and (6) repeats this analysis but using relative time fixed effects. Column (7) incorporates inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10 , 5 , and 1 percent levels are denoted respectively by ${ }^{*}$, **, and ${ }^{* * *}$.

Table A-6: Effect of Enrollment and Graduation from The Excel Center on Quarterly Earnings, Longer Follow-up Samples

|  | Weighted <br> (1) | Weighted <br> (2) | Weighted <br> (3) | Weighted <br> (4) |
| :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} -104.81^{* * *} \\ (29.75) \end{gathered}$ | $\begin{gathered} -89.45^{* * *} \\ (33.73) \end{gathered}$ | $\begin{aligned} & -31.67 \\ & (41.21) \end{aligned}$ | $\begin{gathered} -134.26^{*} \\ (77.54) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{aligned} & -17.81 \\ & (39.81) \end{aligned}$ | $\begin{gathered} 5.17 \\ (45.49) \end{gathered}$ | $\begin{gathered} 30.48 \\ (54.89) \end{gathered}$ | $\begin{aligned} & -113.70 \\ & (108.16) \end{aligned}$ |
| Enrolled X Year 3 | $\begin{gathered} 101.67^{* *} \\ (45.92) \end{gathered}$ | $\begin{gathered} 111.59^{* *} \\ (52.29) \end{gathered}$ | $\begin{gathered} 137.66^{* *} \\ (63.24) \end{gathered}$ | $\begin{gathered} 86.46 \\ (123.18) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{aligned} & 84.86^{*} \\ & (51.27) \end{aligned}$ | $\begin{gathered} 119.65 * * \\ (57.61) \end{gathered}$ | $\begin{gathered} 83.68 \\ (69.91) \end{gathered}$ | $\begin{gathered} -0.18 \\ (135.81) \end{gathered}$ |
| Enrolled X Year 5 |  | $\begin{gathered} 179.68^{* * * *} \\ (62.99) \end{gathered}$ | $\begin{aligned} & 111.43 \\ & (77.36) \end{aligned}$ | $\begin{gathered} 49.54 \\ (142.06) \end{gathered}$ |
| Enrolled X Year 6 |  |  | $\begin{aligned} & 127.68 \\ & (84.35) \end{aligned}$ | $\begin{gathered} -76.55 \\ (162.29) \end{gathered}$ |
| Enrolled X Year 7 |  |  |  | $\begin{aligned} & -167.18 \\ & (170.90) \end{aligned}$ |
| Graduated X Year 1 | $\begin{gathered} -118.75 * * \\ (51.57) \end{gathered}$ | $\begin{gathered} -142.12^{* * *} \\ (55.11) \end{gathered}$ | $\begin{gathered} -179.75 * * \\ (70.75) \end{gathered}$ | $\begin{aligned} & -196.52 \\ & (120.64) \end{aligned}$ |
| Graduated X Year 2 | $\begin{gathered} 33.33 \\ (63.02) \end{gathered}$ | $\begin{gathered} -39.72 \\ (65.21) \end{gathered}$ | $\begin{aligned} & -89.20 \\ & (81.76) \end{aligned}$ | $\begin{gathered} -39.26 \\ (150.04) \end{gathered}$ |
| Graduated X Year 3 | $\begin{gathered} 468.47^{* * *} \\ (76.65) \end{gathered}$ | $\begin{gathered} 365.69^{* * *} \\ (79.06) \end{gathered}$ | $\begin{gathered} 366.27^{* * *} \\ (98.58) \end{gathered}$ | $\begin{aligned} & 465.51^{* *} \\ & (198.13) \end{aligned}$ |
| Graduated X Year 4 | $\begin{gathered} 708.35^{* * *} \\ (85.45) \end{gathered}$ | $\begin{gathered} 634.60^{* * *} \\ (91.76) \end{gathered}$ | $\begin{gathered} 672.15^{* * *} \\ (112.41) \end{gathered}$ | $\begin{gathered} 790.08^{* * *} \\ (204.03) \end{gathered}$ |
| Graduated X Year 5 |  | $\begin{gathered} 669.06^{* * *} \\ (101.00) \end{gathered}$ | $\begin{gathered} 684.98^{* * * *} \\ (121.39) \end{gathered}$ | $\begin{gathered} 770.71^{* * *} \\ (230.40) \end{gathered}$ |
| Graduated X Year 6 |  |  | $\begin{gathered} 832.22^{* * *} \\ (134.37) \end{gathered}$ | $\begin{gathered} 811.19^{* * *} \\ (237.98) \end{gathered}$ |
| Graduated X Year 7 |  |  |  | $\begin{gathered} 849.64^{* * *} \\ (261.34) \end{gathered}$ |
| Relative Quarter FE | X | X | X | X |
| Person FE | X | X | X | X |
| Calendar Quarter FE | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X |
| Comp. Mean - Final Year | 2,202 | 2,232 | 2,376 | 2,602 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1 }-8}=0\right)$ | 1.000 | 1.000 | 1.000 | 1.000 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Pre1-8 }}=0\right)$ | 0.982 | 0.994 | 0.999 | 0.923 |
| $R^{2}$ | 0.56 | 0.55 | 0.54 | 0.51 |
| Observations | 480,348 | 378,600 | 264,440 | 77,520 |
| Individuals | 13,343 | 9,465 | 6,010 | 1,615 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample differ across columns. The first column includes all TEC applicants from January 2013 through June 2016 with any preapplication MPH record. Each subsequent column moves the end date for the sample one year earlier to allow for an additional follow-up year. Time is measured in quarters relative to application date, includes quarters -20 to the indicated end quarter. The outcome is quarterly earnings (2014Q1 USD), winsorized at $99 \%$. Non-employment is coded as zero earnings. All columns report the results of a 'doubly robust' specification that includes person, calendar quarter, and relative quarter-age ventile fixed effects and re-weights using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, **, and ${ }^{* * *}$.

# Table A-7: Effect of Graduation from The Excel Center on Quarterly Earnings, Comparing to Exiting Students with Different Enrollment Lengths 

|  | $0-5$ Terms | 6-10 Terms | $11+$ Terms |
| :--- | :---: | :---: | :---: |
|  | $(1)$ | $(2)$ | $(3)$ |
| Graduated X Year 1 | $-115.14^{* *}$ | -49.42 | -134.97 |
|  | $(50.82)$ | $(58.88)$ | $(82.25)$ |
| Graduated X Year 2 | -15.29 | 43.52 | 12.68 |
|  | $(62.87)$ | $(77.58)$ | $(112.12)$ |
| Graduated X Year 3 | $391.48^{* * *}$ | $408.85^{* * *}$ | $373.87^{* *}$ |
|  | $(76.34)$ | $(93.60)$ | $(169.17)$ |
| Graduated X Year 4 | $692.09^{* * *}$ | $580.10^{* * *}$ | $431.68^{* * *}$ |
|  | $(89.24)$ | $(105.87)$ | $(158.94)$ |
| Graduated X Year 5 | $756.84^{* * *}$ | $556.14^{* * *}$ | 212.15 |
|  | $(97.58)$ | $(118.06)$ | $(211.70)$ |
| Relative Quarter FE | X | X | X |
| Person FE | X | X | X |
| Calendar Quarter FE | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Prel-8 }=0)}\right.$ | 1.000 | 1.000 | 1.000 |
| $R^{2}$ | 0.52 | 0.55 | 0.56 |
| Observations | 185,120 | 99,120 | 70,520 |
| Individuals | 4,628 | 2,478 | 1,763 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development and TEC enrollment records from Goodwill. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record and an enrollment spell in the TEC enrollment records. Time is measured in quarters relative to application date, and the data are a balanced panel from quarter - 20 to quarter 19. The outcome is quarterly earnings (2014Q1 USD), winsorized at $99 \%$. Non-employment is coded as zero earnings. All columns report the results of a 'doubly robust' specification that includes person, calendar quarter, and relative quarter-age ventile fixed effects and re-weights using inverse propensity score weights. See text for details. The treatment group in all columns is comprised of graduates. The comparison group changes across columns, with each column limited to individuals who dropped out but were enrolled for the listed number of terms. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, **, and ${ }^{* * *}$.

Table A-8: Heterogeneous Effects of Enrollment and Graduation from The Excel Center on Quarterly Earnings

|  | $\overline{\text { IAge }<=23}$ <br> (1) | $\text { "Age }>23$ <br> (2) | DOE Sample (3) | FRL (4) | Not FRL (5) | Indianapolis (6) | Not <br> Indianapolis <br> (7) | $\qquad$ | $\qquad$ | Remediation (10) | Not Remediation $(11)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} -111.19^{* * *} \\ (36.52) \end{gathered}$ | $\begin{aligned} & -42.60 \\ & (61.76) \end{aligned}$ | $\begin{gathered} -101.57^{* *} \\ (49.91) \end{gathered}$ | $\begin{gathered} -86.55^{* *} \\ (38.60) \end{gathered}$ | $\begin{aligned} & -171.84 \\ & (135.32) \end{aligned}$ | $\begin{aligned} & -70.99 \\ & (48.18) \end{aligned}$ | $\begin{gathered} -94.56^{* *} \\ (46.79) \end{gathered}$ | $\begin{gathered} -132.08^{* *} \\ (67.02) \end{gathered}$ | $\begin{aligned} & -76.35 \\ & (62.36) \end{aligned}$ |  |  |
| Enrolled X Year 2 | $\begin{gathered} 31.31 \\ (53.72) \end{gathered}$ | $\begin{gathered} 16.23 \\ (74.53) \end{gathered}$ | $\begin{gathered} 56.63 \\ (64.60) \\ \hline \end{gathered}$ | $\begin{gathered} 51.48 \\ (58.99) \end{gathered}$ | $\begin{gathered} 174.89 \\ (152.30) \end{gathered}$ | $\begin{gathered} 13.77 \\ (61.12) \end{gathered}$ | $\begin{gathered} 41.54 \\ (64.14) \end{gathered}$ | $\begin{array}{r} 13.94 \\ (87.70) \end{array}$ | $\begin{gathered} 83.62 \\ (91.49) \end{gathered}$ |  |  |
| Enrolled X Year 3 | $\begin{aligned} & 117.53^{*} \\ & (63.92) \end{aligned}$ | $\begin{aligned} & 108.56 \\ & (82.81) \end{aligned}$ | $\begin{aligned} & 101.11 \\ & (85.26) \end{aligned}$ | $\begin{gathered} 80.87 \\ (76.79) \end{gathered}$ | $\begin{gathered} 307.50 \\ (187.17) \end{gathered}$ | $\begin{gathered} 37.09 \\ (70.06) \end{gathered}$ | $\begin{gathered} 223.84^{* * *} \\ (75.24) \end{gathered}$ | $\begin{gathered} -7.79 \\ (120.30) \end{gathered}$ | $\begin{gathered} 177.08 \\ (111.51) \end{gathered}$ |  |  |
| Enrolled X Year 4 | $\begin{gathered} 176.68^{* *} \\ (72.58) \end{gathered}$ | $\begin{gathered} 69.57 \\ (90.28) \end{gathered}$ | $\begin{aligned} & 135.17 \\ & (89.87) \end{aligned}$ | $\begin{gathered} 91.36 \\ (86.44) \end{gathered}$ | $\begin{aligned} & 315.71^{*} \\ & (189.58) \end{aligned}$ | $\begin{gathered} 45.92 \\ (77.08) \end{gathered}$ | $\begin{gathered} 264.90^{* * *} \\ (85.15) \end{gathered}$ | $\begin{gathered} 9.66 \\ (130.84) \end{gathered}$ | $\begin{aligned} & 231.94^{* *} \\ & (110.05) \end{aligned}$ |  |  |
| Enrolled X Year 5 | $\begin{gathered} 248.54^{* * *} \\ (80.22) \end{gathered}$ | $\begin{gathered} 88.22 \\ (98.74) \end{gathered}$ | $\begin{gathered} 204.60^{* *} \\ (100.92) \end{gathered}$ | $\begin{aligned} & 163.98^{*} \\ & (96.09) \end{aligned}$ | $\begin{gathered} 509.46^{* * *} \\ (196.29) \end{gathered}$ | $\begin{gathered} 68.09 \\ (85.37) \end{gathered}$ | $\begin{gathered} 338.40^{* * *} \\ (92.79) \end{gathered}$ | $\begin{aligned} & 140.69 \\ & (130.02) \end{aligned}$ | $\begin{aligned} & 245.83^{*} \\ & (136.25) \end{aligned}$ |  |  |
| Graduated X Year 1 | $\begin{aligned} & 17.13 \\ & (50.03) \end{aligned}$ | $\begin{gathered} -355.91^{* * *} \\ (117.61) \end{gathered}$ | $\begin{gathered} -52.02 \\ (47.90) \end{gathered}$ | $\begin{gathered} 15.85 \\ (50.65) \end{gathered}$ | $\begin{gathered} -265.19^{* * *} \\ (102.10) \end{gathered}$ | $\begin{gathered} -160.23^{*} \\ (84.71) \end{gathered}$ | $\begin{gathered} -157.81^{* *} \\ (71.52) \end{gathered}$ | $\begin{gathered} -102.77 \\ (73.92) \end{gathered}$ | $\begin{gathered} -57.16 \\ (60.69) \end{gathered}$ | $-228.58^{* * *}$ <br> (77.76) | $\begin{aligned} & -22.84 \\ & (71.36) \end{aligned}$ |
| Graduated X Year 2 | $\begin{gathered} 276.28^{* * *} \\ (74.77) \end{gathered}$ | $\begin{gathered} -517.05^{* * *} \\ (125.70) \end{gathered}$ | $\begin{aligned} & 101.31 \\ & (65.00) \end{aligned}$ | $\begin{gathered} 160.01^{* *} \\ (72.22) \end{gathered}$ | $\begin{gathered} -33.49 \\ (144.69) \end{gathered}$ | $\begin{aligned} & -120.14 \\ & (98.32) \end{aligned}$ | $\begin{gathered} 24.94 \\ (94.98) \end{gathered}$ | $\begin{aligned} & -15.62 \\ & (95.50) \end{aligned}$ | $\begin{aligned} & 135.56 \\ & (89.18) \end{aligned}$ | $\begin{gathered} -189.95^{* *} \\ (95.19) \end{gathered}$ | $\begin{aligned} & 124.06 \\ & (90.39) \end{aligned}$ |
| Graduated X Year 3 | $\begin{gathered} 623.62^{* * *} \\ (98.52) \end{gathered}$ | $\begin{gathered} -77.71 \\ (145.91) \end{gathered}$ | $\begin{gathered} 485.81^{* * *} \\ (81.14) \end{gathered}$ | $\begin{gathered} 498.28^{* * *} \\ (93.42) \end{gathered}$ | $\begin{aligned} & 360.44^{* *} \\ & (172.54) \end{aligned}$ | $\begin{aligned} & 268.70^{* *} \\ & (112.96) \end{aligned}$ | $\begin{gathered} 413.52^{* * *} \\ (126.98) \end{gathered}$ | $\begin{gathered} 386.96^{* * *} \\ (129.53) \end{gathered}$ | $\begin{gathered} 495.56^{* * *} \\ (106.95) \end{gathered}$ | $\begin{gathered} 241.84^{* *} \\ (111.78) \end{gathered}$ | $\begin{gathered} 392.44^{* * *} \\ (113.55) \end{gathered}$ |
| Graduated X Year 4 | $\begin{gathered} 674.22^{* * *} \\ (107.25) \end{gathered}$ | $\begin{gathered} 547.63^{* * *} \\ (169.41) \end{gathered}$ | $\begin{gathered} 623.63^{* * *} \\ (91.29) \end{gathered}$ | $\begin{gathered} 564.34^{* * *} \\ (105.16) \end{gathered}$ | $\begin{gathered} 580.29 * * * \\ (192.13) \end{gathered}$ | $\begin{gathered} 582.36^{* * *} \\ (133.03) \end{gathered}$ | $\begin{gathered} 674.62^{* * *} \\ (144.30) \end{gathered}$ | $\begin{gathered} 609.56^{* * *} \\ (152.71) \end{gathered}$ | $\begin{gathered} 580.50^{* * *} \\ (120.26) \end{gathered}$ | $\begin{gathered} 530.65 * * * \\ (124.99) \end{gathered}$ | $\begin{gathered} 504.23^{* * *} \\ (133.17) \end{gathered}$ |
| Graduated X Year 5 | $\begin{gathered} 655.55^{* * *} \\ (117.35) \end{gathered}$ | $\begin{gathered} 601.46^{* * *} \\ (187.77) \end{gathered}$ | $\begin{gathered} 660.49^{* * *} \\ (100.88) \end{gathered}$ | $\begin{gathered} 604.01^{* * *} \\ (117.69) \end{gathered}$ | $\begin{gathered} 568.00^{* * *} \\ (205.14) \end{gathered}$ | $\begin{gathered} 519.88^{* * *} \\ (144.23) \end{gathered}$ | $\begin{gathered} 715.58^{* * *} \\ (156.32) \end{gathered}$ | $\begin{gathered} 610.99^{* * *} \\ (162.10) \end{gathered}$ | $\begin{gathered} 611.48^{* * *} \\ (136.47) \end{gathered}$ | $\begin{gathered} 547.91^{* * *} \\ (140.32) \end{gathered}$ | $\begin{gathered} 444.23^{* * *} \\ (147.42) \end{gathered}$ |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X |
| Comp. Mean - Year 5 | 2,172 | 2,898 | 2,298 | 2,137 | 2,663 | 2,629 | 2,286 | 2,110 | 2,473 | 2,616 | 2,699 |
| $P\left(\hat{\beta}_{G r a d}^{\text {Prel-8 }}{ }^{\text {a }}=0\right)$ | 1.000 | 1.000 | 0.557 | 1.000 | 0.777 | 1.000 | 1.000 | 0.898 | 0.719 |  |  |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Prel }}\right.$ - $\left.=0\right)$ | 1.000 | 0.995 | 0.999 | 0.999 | 0.987 | 0.862 | 0.997 | 0.990 | 1.000 | 1.000 | 0.998 |
| Graduation Rate | 0.257 | 0.175 | 0.237 | 0.253 | 0.209 | 0.229 | 0.218 | 0.182 | 0.284 | 0.229 | 0.386 |
| $R^{2}$ | 0.45 | 0.57 | 0.51 | 0.45 | 0.55 | 0.55 | 0.55 | 0.50 | 0.53 | 0.55 | 0.53 |
| Observations | 211,240 | 166,960 | 249,680 | 171,720 | 72,200 | 206,760 | 171,440 | 117,400 | 134,840 | 112,440 | 74,840 |
| Individuals | 5,281 | 4,174 | 6,242 | 4,293 | 1,805 | 5,169 | 4,286 | 2,935 | 3,371 | 2,811 | 1,871 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development, TEC enrollment records from Goodwill, and high school enrollment records from the Indiana Department of Education. Time is measured in quarters relative to application date. The outcome is quarterly earnings (2014Q1 USD), winsorized at $99 \%$. Non-employment is coded as zero earnings. All columns use a balanced panel from quarter - 20 to quarter 19. All columns report the results of a 'doubly robust' specification that includes person, calendar quarter, and relative quarter-age ventile fixed effects and re-weights using inverse propensity score weights. See text for details. The sample varies across columns. Columns (1) and (2) split the main sample of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record by age, according to birthdate on the TEC application. Column (3) limits the main sample to those with a pre-application high school enrollment record. Columns (4)-(9) further limit the sub-sample from column (3) based on characteristics from K-12 school records: receipt of free or reduced-price lunch, applying to an Indianapolis school, and above/below median absence rates. Column (10) and (11) limit the sample to TEC applicants with enrollment records, splitting by whether the student completed any credits for remedial classes. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-9: Heterogeneous Effects of Enrollment and Graduation from The Excel Center on Quarterly Earnings

|  | All <br> (1) | White Female (2) | Black Female (3) | White Male (4) | Black Male (5) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} -101.57^{* *} \\ (49.91) \end{gathered}$ | $\begin{gathered} \hline-69.94 \\ (73.93) \end{gathered}$ | $\begin{gathered} 1.81 \\ (134.77) \end{gathered}$ | $\begin{gathered} \hline-262.33^{* * *} \\ (101.04) \end{gathered}$ | $\begin{aligned} & \hline-50.15 \\ & (76.29) \end{aligned}$ |
| Enrolled X Year 2 | $\begin{gathered} 56.63 \\ (64.60) \end{gathered}$ | $\begin{gathered} 133.89 \\ (101.56) \end{gathered}$ | $\begin{gathered} 369.27^{* *} \\ (183.69) \end{gathered}$ | $\begin{aligned} & -187.46 \\ & (170.80) \end{aligned}$ | $\begin{aligned} & 169.08^{*} \\ & (96.97) \end{aligned}$ |
| Enrolled X Year 3 | $\begin{aligned} & 101.11 \\ & (85.26) \end{aligned}$ | $\begin{gathered} 195.85^{*} \\ (114.79) \end{gathered}$ | $\begin{gathered} 279.83 \\ (178.56) \end{gathered}$ | $\begin{aligned} & -309.31 \\ & (270.21) \end{aligned}$ | $\begin{gathered} 263.20^{* *} \\ (115.29) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{aligned} & 135.17 \\ & (89.87) \end{aligned}$ | $\begin{gathered} 293.39^{* *} \\ (125.18) \end{gathered}$ | $\begin{gathered} 226.51 \\ (177.67) \end{gathered}$ | $\begin{gathered} -285.42 \\ (311.16) \end{gathered}$ | $\begin{gathered} 327.80^{* *} \\ (131.97) \end{gathered}$ |
| Enrolled X Year 5 | $\begin{gathered} 204.60^{* *} \\ (100.92) \end{gathered}$ | $\begin{gathered} 313.52^{* *} \\ (145.50) \end{gathered}$ | $\begin{gathered} 264.79 \\ (164.15) \end{gathered}$ | $\begin{gathered} 30.59 \\ (351.91) \end{gathered}$ | $\begin{gathered} 453.53^{* * *} \\ (136.48) \end{gathered}$ |
| Graduated X Year 1 | $\begin{aligned} & -52.02 \\ & (47.90) \end{aligned}$ | $\begin{gathered} -8.32 \\ (69.66) \end{gathered}$ | $\begin{aligned} & -12.60 \\ & (93.51) \end{aligned}$ | $\begin{aligned} & -70.70 \\ & (91.47) \end{aligned}$ | $\begin{gathered} -0.91 \\ (97.23) \end{gathered}$ |
| Graduated X Year 2 | $\begin{aligned} & 101.31 \\ & (65.00) \end{aligned}$ | $\begin{gathered} 325.50^{* * *} \\ (110.53) \end{gathered}$ | $\begin{gathered} 8.50 \\ (137.26) \end{gathered}$ | $\begin{gathered} 125.56 \\ (162.02) \end{gathered}$ | $\begin{gathered} 147.15 \\ (149.57) \end{gathered}$ |
| Graduated X Year 3 | $\begin{gathered} 485.81^{* * *} \\ (81.14) \end{gathered}$ | $\begin{gathered} 463.68^{* * *} \\ (129.58) \end{gathered}$ | $\begin{gathered} 382.47^{* *} \\ (155.51) \end{gathered}$ | $\begin{aligned} & 601.09^{* *} \\ & (233.04) \end{aligned}$ | $\begin{aligned} & 289.01^{*} \\ & (161.36) \end{aligned}$ |
| Graduated X Year 4 | $\begin{gathered} 623.63^{* * *} \\ (91.29) \end{gathered}$ | $\begin{gathered} 719.34^{* * *} \\ (153.83) \end{gathered}$ | $\begin{aligned} & 304.88^{*} \\ & (168.14) \end{aligned}$ | $\begin{gathered} 740.79^{* * *} \\ (282.82) \end{gathered}$ | $\begin{aligned} & 405.21^{*} \\ & (232.69) \end{aligned}$ |
| Graduated X Year 5 | $\begin{gathered} 660.49 * * * \\ (100.88) \end{gathered}$ | $\begin{gathered} 768.70^{* * *} \\ (164.15) \end{gathered}$ | $\begin{gathered} 143.82 \\ (188.57) \end{gathered}$ | $\begin{gathered} 933.36^{* * *} \\ (360.98) \end{gathered}$ | $\begin{aligned} & 431.48^{* *} \\ & (208.69) \end{aligned}$ |
| Relative Quarter FE | X | X | X | X | X |
| Person FE | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X |
| Comp. Mean - Year 5 | 2,298 | 1,585 | 2,262 | 3,006 | 1,822 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1-8 }}=0\right)$ | 0.557 | 0.948 | 0.852 | 0.981 | 0.997 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Pre1-8 }}=0\right)$ | 0.999 | 0.921 | 0.562 | 0.968 | 0.793 |
| Graduation Rate | 0.235 | 0.285 | 0.226 | 0.239 | 0.166 |
| $R^{2}$ | 0.51 | 0.45 | 0.54 | 0.50 | 0.46 |
| Observations | 249,680 | 51,680 | 55,440 | 39,640 | 47,320 |
| Individuals | 6,242 | 1,292 | 1,386 | 991 | 1,183 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development, TEC enrollment records from Goodwill, and high school enrollment records from the Indiana Department of Education. Time is measured in quarters relative to application date. The outcome is quarterly earnings (2014Q1 USD), winsorized at 99\%. Non-employment is coded as zero earnings. All columns use a balanced panel from quarter - 20 to quarter 19. All columns report the results of a 'doubly robust' specification that includes person, calendar quarter, and relative quarter-age ventile fixed effects and re-weights using inverse propensity score weights. See text for details. The sample varies across columns. Column (1) limits the main sample to those with a pre-application high school enrollment record. Columns (2)-(5) further limit the sub-sample from column (3) based on race and gender characteristics from K-12 school records. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-10: Marginal Value of Public Funds Calculations

| Outcomes: | 5-Year Impacts <br> (1) | 7-Year Impacts (2) | 20-Year Impacts | 40-Year Impacts | 40-Year Impacts | 40-Year Impacts (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled at Excel Center |  |  |  |  |  |  |
| NPV of After-Tax Earnings Gains | $\begin{gathered} 2,559 \\ {[1,269,3,871]} \end{gathered}$ | $\begin{gathered} 4,907 \\ {[2,919,6,950]} \end{gathered}$ | $\begin{gathered} 8,415 \\ {[5,267,11,573]} \end{gathered}$ | $\begin{gathered} 34,063 \\ {[22,217,46,101]} \end{gathered}$ | $\begin{gathered} 24,073 \\ {[15,622,32,629]} \end{gathered}$ | $\begin{gathered} 26,680 \\ {[17,533,35,904]} \end{gathered}$ |
| Cost Net of Fiscal Savings | $\begin{gathered} 6,809 \\ {[6,702,6,913]} \end{gathered}$ | $\begin{gathered} 6,560 \\ {[6,374,6,741]} \end{gathered}$ | $\begin{gathered} 6,188 \\ {[5,878,6,491]} \end{gathered}$ | $\begin{gathered} 1,648 \\ {[90,3,313]} \end{gathered}$ | $\begin{gathered} 3,330 \\ {[2,244,4,489]} \end{gathered}$ | $\begin{gathered} 4,248 \\ {[3,290,5,198]} \end{gathered}$ |
| MVPF | $\begin{gathered} 0.38 \\ {[0.18,0.58]} \end{gathered}$ | $\begin{gathered} 0.75 \\ {[0.43,1.09]} \end{gathered}$ | $\begin{gathered} 1.36 \\ {[0.81,1.97]} \end{gathered}$ | $\begin{gathered} 20.67 \\ {[6.78,498.67]} \end{gathered}$ | $\begin{gathered} 7.23 \\ {[3.50,14.46]} \end{gathered}$ | $\begin{gathered} 6.28 \\ {[3.37,10.93]} \end{gathered}$ |
| Enrolled Only |  |  |  |  |  |  |
| NPV of After-Tax Earnings Gains | $\begin{gathered} 1,491 \\ {[152,2,809]} \end{gathered}$ | $\begin{gathered} 2,841 \\ {[777,4,875]} \end{gathered}$ | $\begin{gathered} 4,859 \\ {[1,669,8,058]} \end{gathered}$ | $\begin{gathered} 20,556 \\ {[8,169,33,126]} \end{gathered}$ | $\begin{gathered} 14,488 \\ {[5,612,23,461]} \end{gathered}$ | $\begin{gathered} 15,365 \\ {[5,974,24,869]} \end{gathered}$ |
| Cost Net of Fiscal Savings | $\begin{gathered} 6,153 \\ {[6,042,6,257]} \end{gathered}$ | $\begin{gathered} 6,010 \\ {[5,818,6,195]} \end{gathered}$ | $\begin{gathered} 5,795 \\ {[5,477,6,107]} \end{gathered}$ | $\begin{gathered} 4,128 \\ {[2,798,5,416]} \end{gathered}$ | $\begin{gathered} 4,773 \\ {[3,833,5,684]} \end{gathered}$ | $\begin{gathered} 4,680 \\ {[3,693,5,645]} \end{gathered}$ |
| MVPF | $\begin{gathered} 0.24 \\ {[0.02,0.47]} \end{gathered}$ | $\begin{gathered} 0.47 \\ {[0.13,0.84]} \end{gathered}$ | $\begin{gathered} 0.84 \\ {[0.27,1.47]} \end{gathered}$ | $\begin{gathered} 4.98 \\ {[1.51,11.83]} \end{gathered}$ | $\begin{gathered} 3.04 \\ {[0.99,6.12]} \end{gathered}$ | $\begin{gathered} 3.28 \\ {[1.06,6.73]} \end{gathered}$ |
| Graduated |  |  |  |  |  |  |
| NPV of After-Tax Earnings Gains | $\begin{gathered} 6,266 \\ {[4,078,8,434]} \end{gathered}$ | $\begin{gathered} 12,074 \\ {[8,675,15,376]} \end{gathered}$ | $\begin{gathered} 20,750 \\ {[15,386,25,966]} \end{gathered}$ | $\begin{gathered} 80,917 \\ {[62,402,99,835]} \end{gathered}$ | $\begin{gathered} 57,324 \\ {[44,035,70,842]} \end{gathered}$ | $\begin{gathered} 65,932 \\ {[50,121,81,432]} \end{gathered}$ |
| Cost Net of Fiscal Savings | $\begin{gathered} 9,086 \\ {[8,903,9,274]} \end{gathered}$ | $\begin{gathered} 8,469 \\ {[8,158,8,791]} \end{gathered}$ | $\begin{gathered} 7,548 \\ {[7,029,8,081]} \end{gathered}$ | $\begin{gathered} -6,956 \\ {[-10,798,-2,260]} \end{gathered}$ | $\begin{gathered} -1,675 \\ {[-4,302,1,559]} \end{gathered}$ | $\begin{gathered} 2,750 \\ {[1,133,4,406]} \end{gathered}$ |
| MVPF | $\begin{gathered} 0.69 \\ {[0.44,0.95]} \end{gathered}$ | $\begin{gathered} 1.43 \\ {[0.99,1.88]} \end{gathered}$ | $\begin{gathered} 2.75 \\ {[1.91,3.70]} \end{gathered}$ | $\begin{gathered} \infty \\ {[\infty, \infty]} \end{gathered}$ | $\begin{gathered} \infty \\ {[28.22, \infty]} \end{gathered}$ | $\begin{gathered} 23.98 \\ {[11.37,71.73]} \end{gathered}$ |
| Discount Rate | $3 \%$ | $3 \%$ | $3 \%$ | $3 \%$ | 5\% | $3 \%$ |
| Extrapolation Method | Actual | Lifecycle | Lifecycle | Lifecycle | Lifecycle | Constant |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The table reports estimates of the net present value of after-tax earnings gain, cost of the program net of fiscal savings, and the marginal value of public funds (MVPF). Outcomes are reported separately by type of student: any enrolled TEC student, students who exit before graduation, and graduates. Results across columns vary the assumed duration of earnings impacts (given by the column header), the discount rate, and the method for extrapolating earnings gains into the future. The lifecycle extrapolation method (columns 2 through 5) assumes Year- 5 gains are held constant in proportion to the earnings of non-enrolled applicants, where non-enrolled applicant earnings follow the population age-earnings profile of high school non-completers observed in the 2015 ACS (Ruggles et al., 2020). The constant extrapolation method assumes the Year- 5 earnings gains are held constant in dollar terms throughout the remainder of the time horizon. $95 \%$ confidence intervals are reported in brackets and come from 10,000 bootstrap samples of the data. See text and Hendren and Sprung-Keyser (2020) for additional details.

Table A-11: Effects of Enrollment and Graduation from The Excel Center on Industry Employment

|  | Any <br> (1) | Const. <br> (2) | Mfg. <br> (3) | Wholesale <br> (4) | Retail <br> (5) | Trans. <br> (6) | Business Services (7) | Education <br> (8) | Health <br> (9) | Hotel \& Restaurant (10) | Other Services (11) | Other <br> (12) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{aligned} & -0.007 \\ & (0.008) \end{aligned}$ | $\begin{gathered} -0.004^{* *} \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.001) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.004) \end{aligned}$ | $\begin{gathered} -0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.020^{* * *} \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.001) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{aligned} & 0.014^{* *} \\ & (0.006) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.001) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{gathered} 0.033^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} -0.006^{* * *} \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.017^{* * *} \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.005^{*} \\ & (0.003) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.006) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.020^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ |
| Enrolled X Year 3 | $\begin{gathered} 0.056^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.006^{* *} \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.009^{* *} \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.021^{* * *} \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.011^{*} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.003^{*} \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.026^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.003 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 0.054^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.007^{* * *} \\ (0.003) \end{gathered}$ | $\begin{aligned} & 0.010^{* *} \\ & (0.004) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.002) \end{gathered}$ | $\begin{aligned} & 0.010^{*} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.003) \end{aligned}$ | $\begin{gathered} 0.016^{* *} \\ (0.006) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.016^{* *} \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.003) \end{gathered}$ |
| Enrolled X Year 5 | $\begin{gathered} 0.053^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.004 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.014^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.004^{* *} \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.015^{* * *} \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.011^{*} \\ & (0.006) \end{aligned}$ | $\begin{gathered} -0.003 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.003) \end{gathered}$ |
| Graduated X Year 1 | $\begin{gathered} -0.047^{* * *} \\ (0.012) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.007^{* *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.019^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.006 \\ (0.005) \end{gathered}$ | $\begin{gathered} -0.020 * * \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.006^{*} \\ & (0.003) \end{aligned}$ |
| Graduated X Year 2 | $\begin{aligned} & -0.009 \\ & (0.014) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.007^{*} \\ & (0.004) \end{aligned}$ | $\begin{gathered} -0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.006 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.012^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.006) \end{gathered}$ | $\begin{gathered} -0.029^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.004) \end{gathered}$ |
| Graduated X Year 3 | $\begin{gathered} 0.048^{* * *} \\ (0.014) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.008 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.011 \\ (0.008) \end{gathered}$ | $\begin{aligned} & 0.008^{*} \\ & (0.004) \end{aligned}$ | $\begin{gathered} 0.010 \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.016^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.025^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.031^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.004) \end{gathered}$ | $\begin{aligned} & 0.009^{*} \\ & (0.005) \end{aligned}$ |
| Graduated X Year 4 | $\begin{gathered} 0.071^{* * *} \\ (0.015) \end{gathered}$ | $\begin{aligned} & 0.005^{*} \\ & (0.003) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.006) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.003) \end{gathered}$ | $\begin{aligned} & 0.017^{*} \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.009 \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.014^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.035^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} -0.026^{* *} \\ (0.011) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.003) \end{gathered}$ | $\begin{aligned} & 0.009^{*} \\ & (0.005) \end{aligned}$ |
| Graduated X Year 5 | $\begin{gathered} 0.069^{* * *} \\ (0.016) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.013 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.012 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.013^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.032^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} -0.033^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.016^{* *} \\ (0.006) \end{gathered}$ |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.531 | 0.019 | 0.039 | 0.009 | 0.080 | 0.025 | 0.135 | 0.009 | 0.051 | 0.125 | 0.010 | 0.028 |
| Com. Mean - Year 5 | 0.519 | 0.020 | 0.038 | 0.009 | 0.072 | 0.031 | 0.131 | 0.007 | 0.055 | 0.120 | 0.008 | 0.028 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1 }}\right.$ - $\left.=0\right)$ | 0.876 | 0.143 | 0.692 | 0.863 | 0.791 | 0.914 | 0.037 | 0.668 | 0.723 | 0.246 | 0.889 | 0.708 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Prel-8 }}=0\right)$ | 0.808 | 0.441 | 0.013 | 0.585 | 0.318 | 0.102 | 0.002 | 0.231 | 0.842 | 0.430 | 0.110 | 0.417 |
| $R^{2}$ | 0.43 | 0.35 | 0.33 | 0.27 | 0.25 | 0.28 | 0.21 | 0.35 | 0.40 | 0.28 | 0.27 | 0.23 |
| Observations | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 |
| Individuals | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 |

[^2]Table A-12: Effects of Enrollment and Graduation from The Excel Center on Health Industry Employment

|  | Any Health (1) | Nursing Home (2) | Vocational Rehab (3) | Individual \& Family <br> (4) | Home Health (5) | General Medicine (6) | Other Health (7) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.005^{* *} \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.001) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.001) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.001) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.002) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{gathered} 0.003 \\ (0.004) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.001) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.001) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.002) \end{gathered}$ |
| Enrolled X Year 3 | $\begin{gathered} 0.005 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.001) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.002) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.001) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & 0.005^{* *} \\ & (0.002) \end{aligned}$ |
| Enrolled X Year 5 | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.003) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.001) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & 0.005^{* *} \\ & (0.002) \end{aligned}$ |
| Graduated X Year 1 | $\begin{aligned} & -0.006 \\ & (0.005) \end{aligned}$ | $\begin{gathered} -0.009^{* * *} \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & -0.002 \\ & (0.001) \end{aligned}$ | $\begin{aligned} & 0.004^{*} \\ & (0.002) \end{aligned}$ |
| Graduated X Year 2 | $\begin{gathered} 0.007 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.010^{* * *} \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & -0.002 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.003) \end{aligned}$ |
| Graduated X Year 3 | $\begin{gathered} 0.025^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.015^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.006^{* *} \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.004) \end{gathered}$ |
| Graduated X Year 4 | $\begin{gathered} 0.035^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.011^{* *} \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.009 * * * \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.004) \end{gathered}$ |
| Graduated X Year 5 | $\begin{gathered} 0.032^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.010^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.007^{* *} \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & 0.008^{* *} \\ & (0.003) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ |
| Relative Quarter FE | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.051 | 0.016 | 0.005 | 0.007 | 0.006 | 0.007 | 0.011 |
| Com. Mean - Year 5 | 0.055 | 0.017 | 0.005 | 0.007 | 0.006 | 0.006 | 0.013 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1-8 }}=0\right)$ | 0.723 | 0.160 | 0.894 | 0.678 | 0.040 | 0.638 | 0.351 |
| $P\left(\hat{\beta}_{\text {Grad }}^{P r e 1-8}=0\right)$ | 0.842 | 0.604 | 0.300 | 0.819 | 0.066 | 0.569 | 0.257 |
| $R^{2}$ | 0.40 | 0.37 | 0.23 | 0.18 | 0.24 | 0.39 | 0.27 |
| Observations | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 | 378,600 |
| Individuals | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 | 9,465 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters - 20 through 19 and are re-weighted using inverse propensity score weights. See text for details. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-13: Effects of The Excel Center on Professional Certificates

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.197 | 0.052*** | (0.011) | $0.427^{* * *}$ | (0.016) |
| Agriculture | 0.014 | -0.002 | (0.003) | 0.007* | (0.004) |
| Construction | 0.016 | 0.003 | (0.003) | 0.003 | (0.004) |
| Manufacturing | 0.017 | 0.014*** | (0.004) | $0.154^{* * *}$ | (0.012) |
| Retail Trade | 0.000 | 0.000 | (0.000) | -0.000 | (0.001) |
| Transportation \& Warehousing | 0.003 | 0.003 | (0.002) | $-0.005^{* * *}$ | (0.001) |
| Information | 0.009 | -0.002 | (0.003) | 0.003 | (0.003) |
| Scientific \& Technical Services | 0.023 | 0.009** | (0.004) | $0.100^{* * *}$ | (0.011) |
| Business Services | 0.001 | 0.000 | (0.001) | 0.002 | (0.002) |
| Finance | 0.005 | -0.001 | (0.002) | 0.002 | (0.002) |
| Educational Services | 0.043 | 0.005 | (0.006) | 0.089*** | (0.010) |
| Healthcare \& Social Assistance | 0.058 | 0.016** | (0.007) | 0.092*** | (0.011) |
| Arts, Entertainment, \& Recreation | 0.001 | 0.001 | (0.001) | 0.000 | (0.001) |
| Hotels \& Restaurants | 0.012 | -0.003 | (0.003) | 0.009** | (0.004) |
| Other Services | 0.025 | -0.004 | (0.004) | 0.001 | (0.004) |
| Public Adminministration | 0.003 | -0.001 | (0.001) | -0.000 | (0.001) |
| Life Skills | 0.077 | $0.045^{* * *}$ | (0.008) | $0.165^{* * *}$ | (0.015) |
| Business Skills | 0.021 | $0.017^{* * *}$ | (0.004) | $0.173^{* * *}$ | (0.013) |
| Observations | 3,338 | 4,756 |  | 1,371 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross-section for all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning a professional or course certificate in the the listed industry. See Table B-1 for the mapping of certificate programs to industries. All columns show simple differences re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-14: Effects of The Excel Center on College Credits

|  | Did Not Enroll Mean <br> (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.115 | $-0.026^{* * *}$ | (0.007) | 0.211*** | (0.015) |
| Agriculture | 0.001 | -0.000 | (0.001) | 0.001 | (0.001) |
| Construction | 0.004 | -0.001 | (0.001) | 0.005 | (0.004) |
| Manufacturing | 0.003 | -0.001 | (0.001) | 0.006** | (0.003) |
| Transportation \& Warehousing | 0.000 | 0.000*** | (.) | 0.002 | (0.002) |
| Information | 0.001 | -0.001 | (0.001) | 0.001 | (0.001) |
| Scientific \& Technical Services | 0.014 | -0.004 | (0.003) | 0.039*** | (0.007) |
| Business Services | 0.003 | -0.001 | (0.002) | 0.002 | (0.002) |
| Educational Services | 0.007 | -0.002 | (0.002) | 0.013*** | (0.004) |
| Healthcare \& Social Assistance | 0.035 | -0.008* | (0.004) | 0.071 ${ }^{* * *}$ | (0.009) |
| Arts, Entertainment, \& Recreation | 0.001 | -0.000 | (0.001) | 0.002 | (0.001) |
| Hotels \& Restaurants | 0.001 | -0.000 | (0.001) | $0.008^{* * *}$ | (0.003) |
| Other Services | 0.004 | -0.002 | (0.001) | 0.009** | (0.003) |
| Public Adminministration | 0.005 | 0.002 | (0.002) | 0.005 | (0.003) |
| Business Skills | 0.012 | -0.002 | (0.002) | 0.033*** | (0.007) |
| Liberal Arts | 0.036 | -0.005 | (0.004) | $0.046^{* * *}$ | (0.009) |
| Observations | 3,338 | 4,756 |  | 1,371 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning any college credit in the listed industry. See Table B-2 for the mapping of degree programs to industries. All columns are re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-15: Effects of The Excel Center on Certificate-Predicted Industry Employment

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.512 | $0.008^{* * *}$ | (0.001) | 0.094*** | (0.005) |
| Construction | 0.030 | -0.000 | (0.000) | -0.001 | (0.001) |
| Manufacturing | 0.106 | $-0.002^{* * *}$ | (0.001) | $-0.015^{* * *}$ | (0.003) |
| Wholesal Trade | 0.014 | $-0.000^{* * *}$ | (0.000) | $-0.003^{* * *}$ | (0.000) |
| Retail Trade | 0.066 | 0.001** | (0.001) | 0.000 | (0.001) |
| Transportation \& Warehousing | 0.022 | -0.000* | (0.000) | $-0.004^{* * *}$ | (0.000) |
| Business Services | 0.085 | -0.000 | (0.000) | $-0.013^{* * *}$ | (0.001) |
| Educational Services | 0.009 | $-0.000^{* * *}$ | (0.000) | $-0.003^{* * *}$ | (0.000) |
| Healthcare \& Social Assistance | 0.052 | $0.003^{* * *}$ | (0.001) | 0.059*** | (0.004) |
| Hotels \& Restaurants | 0.095 | $0.007^{* * *}$ | (0.001) | 0.080*** | (0.003) |
| Other Services | 0.013 | -0.000 | (0.000) | $-0.003^{* * *}$ | (0.000) |
| Other | 0.037 | -0.000 | (0.000) | $-0.007^{* * *}$ | (0.001) |
| Healthcare Sub-Industries |  |  |  |  |  |
| Nursing Home | 0.014 | $0.001^{* * *}$ | (0.000) | 0.006*** | (0.001) |
| Vocational Rehabilitation | 0.003 | 0.000 | (0.000) | $-0.000^{* * *}$ | (0.000) |
| Individual \& Family | 0.005 | 0.000 | (0.000) | 0.002*** | (0.000) |
| Home Health | 0.004 | 0.001*** | (0.000) | $0.014^{* * *}$ | (0.001) |
| General Medicine | 0.007 | $-0.000^{* * *}$ | (0.000) | $-0.003^{* * *}$ | (0.000) |
| Other Health | 0.020 | $0.002^{* * *}$ | (0.000) | 0.040*** | (0.004) |
| Observations | 3,338 | 4,756 |  | 1,371 |  |

[^3]Table A-16: Effects of The Excel Center on Credit-Predicted Industry Employment

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.507 | 0.001 | (0.001) | $0.054^{* * *}$ | (0.002) |
| Construction | 0.030 | 0.000 | (0.001) | $0.003^{* * *}$ | (0.001) |
| Manufacturing | 0.104 | 0.001* | (0.000) | -0.001 | (0.001) |
| Wholesal Trade | 0.014 | -0.000 | (0.000) | 0.000 | (0.000) |
| Retail Trade | 0.065 | 0.000 | (0.000) | 0.009*** | (0.001) |
| Transportation \& Warehousing | 0.022 | -0.000 | (0.000) | -0.000 | (0.000) |
| Business Services | 0.085 | 0.000 | (0.000) | 0.001 | (0.000) |
| Educational Services | 0.009 | -0.000 | (0.000) | 0.001** | (0.000) |
| Healthcare \& Social Assistance | 0.051 | -0.001 | (0.001) | 0.019*** | (0.002) |
| Hotels \& Restaurants | 0.094 | $0.002^{* * *}$ | (0.000) | $0.013^{* * *}$ | (0.001) |
| Other Services | 0.013 | -0.000 | (0.000) | $0.001{ }^{* * *}$ | (0.000) |
| Other | 0.037 | -0.000 | (0.000) | $0.010^{* * *}$ | (0.001) |
| Healthcare Sub-Industries |  |  |  |  |  |
| Nursing Home | 0.013 | -0.000 | (0.000) | $0.004^{* * *}$ | (0.000) |
| Vocational Rehabilitation | 0.003 | -0.000 | (0.000) | $0.001^{* * *}$ | (0.000) |
| Individual \& Family | 0.004 | -0.000 | (0.000) | $0.001^{* * *}$ | (0.000) |
| Home Health | 0.004 | -0.000*** | (0.000) | $0.001^{* * *}$ | (0.000) |
| General Medicine | 0.007 | -0.000 | (0.000) | $0.005^{* * *}$ | (0.001) |
| Other Health | 0.020 | -0.000 | (0.000) | $0.006{ }^{* * *}$ | (0.001) |
| Observations | 3,338 | 4,756 |  | 1,371 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is the predicted probability of employment in an industry based on types of college credits earned. All columns are re-weighted using inverse propensity score weights. Standard errors clustered by person are in parentheses. Statistical significance at the 10 , 5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-17: Effects of Enrollment and Graduation from The Excel Center on Industry Employment, Black Females

|  | Any <br> (1) | Const. <br> (2) | Mfg <br> (3) | Wholesale <br> (4) | Retail <br> (5) | Trans. <br> (6) | Business Services <br> (7) | Education <br> (8) | Health <br> (9) | Hotel \& Restaurant (10) | Other Services (11) | Other <br> (12) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{aligned} & \hline-0.033 \\ & (0.034) \end{aligned}$ | $\begin{aligned} & \hline-0.000 \\ & (0.000) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.012 \\ & (0.018) \end{aligned}$ | $\begin{gathered} 0.013 \\ (0.009) \end{gathered}$ | $\begin{aligned} & -0.041 \\ & (0.025) \end{aligned}$ | $\begin{aligned} & -0.000 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.014 \\ & (0.023) \end{aligned}$ | $\begin{gathered} 0.017 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.013) \end{aligned}$ |
| Enrolled X Year 2 | $\begin{gathered} 0.041 \\ (0.029) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.000) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.028) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.011) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.022) \end{gathered}$ | $\begin{gathered} -0.003 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.011 \\ (0.015) \end{gathered}$ | $\begin{aligned} & 0.057^{* *} \\ & (0.027) \end{aligned}$ | $\begin{gathered} -0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.022 \\ (0.015) \end{gathered}$ |
| Enrolled X Year 3 | $\begin{aligned} & 0.053^{*} \\ & (0.031) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.001) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.006) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.045 \\ & (0.047) \end{aligned}$ | $\begin{gathered} 0.013 \\ (0.010) \end{gathered}$ | $\begin{aligned} & -0.010 \\ & (0.029) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.018) \end{gathered}$ | $\begin{aligned} & 0.100^{* *} \\ & (0.042) \end{aligned}$ | $\begin{gathered} -0.001 \\ (0.005) \end{gathered}$ | $\begin{gathered} -0.011 \\ (0.010) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 0.053 \\ (0.035) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & -0.002 \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.016 \\ (0.027) \end{gathered}$ | $\begin{gathered} 0.015 \\ (0.012) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.031) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.023) \end{gathered}$ | $\begin{aligned} & 0.059^{*} \\ & (0.033) \end{aligned}$ | $\begin{aligned} & 0.006^{*} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & -0.015 \\ & (0.014) \end{aligned}$ |
| Enrolled X Year 5 | $\begin{aligned} & 0.059^{*} \\ & (0.032) \end{aligned}$ | $\begin{aligned} & -0.002 \\ & (0.001) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.038^{* * *} \\ (0.014) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.014) \end{gathered}$ | $\begin{aligned} & -0.021 \\ & (0.027) \end{aligned}$ | $\begin{aligned} & 0.014^{*} \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.008 \\ (0.025) \end{gathered}$ | $\begin{aligned} & 0.055^{*} \\ & (0.031) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.050^{*} \\ (0.025) \end{gathered}$ |
| Graduated X Year 1 | $\begin{gathered} 0.003 \\ (0.027) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.000) \end{gathered}$ | $\begin{gathered} -0.012 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.004) \end{gathered}$ | $\begin{aligned} & 0.039^{*} \\ & (0.023) \end{aligned}$ | $\begin{gathered} 0.008 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.018) \end{gathered}$ | $\begin{gathered} -0.006^{* *} \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.008 \\ & (0.012) \end{aligned}$ | $\begin{gathered} -0.019 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.012^{* *} \\ (0.005) \end{gathered}$ |
| Graduated X Year 2 | $\begin{aligned} & -0.033 \\ & (0.032) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.000) \end{gathered}$ | $\begin{gathered} -0.018^{* *} \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.022 \\ (0.021) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.010) \end{aligned}$ | $\begin{gathered} -0.020 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.021 \\ (0.017) \end{gathered}$ | $\begin{gathered} 0.023 \\ (0.019) \end{gathered}$ | $\begin{gathered} -0.055^{* *} \\ (0.025) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.012 \\ (0.007) \end{gathered}$ |
| Graduated X Year 3 | $\begin{gathered} 0.032 \\ (0.030) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.000) \end{aligned}$ | $\begin{gathered} -0.010 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.009 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.022) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.013) \end{gathered}$ | $\begin{aligned} & -0.034 \\ & (0.020) \end{aligned}$ | $\begin{aligned} & 0.038^{*} \\ & (0.022) \end{aligned}$ | $\begin{gathered} 0.051^{* *} \\ (0.022) \end{gathered}$ | $\begin{gathered} -0.044^{*} \\ (0.026) \end{gathered}$ | $\begin{aligned} & 0.011^{*} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.009) \end{aligned}$ |
| Graduated X Year 4 | $\begin{gathered} 0.015 \\ (0.033) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.000) \end{gathered}$ | $\begin{gathered} -0.016^{*} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.013 \\ (0.013) \end{gathered}$ | $\begin{gathered} -0.040^{* *} \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.028 \\ (0.022) \end{gathered}$ | $\begin{aligned} & 0.043^{*} \\ & (0.023) \end{aligned}$ | $\begin{aligned} & -0.052^{*} \\ & (0.027) \end{aligned}$ | $\begin{gathered} -0.000 \\ (0.005) \end{gathered}$ | $\begin{aligned} & 0.026^{*} \\ & (0.015) \end{aligned}$ |
| Graduated X Year 5 | $\begin{gathered} -0.018 \\ (0.034) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.000) \end{gathered}$ | $\begin{aligned} & -0.015 \\ & (0.010) \end{aligned}$ | $\begin{gathered} -0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.023) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.009 \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.015 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.025) \end{gathered}$ | $\begin{gathered} -0.053^{* *} \\ (0.026) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.004) \end{gathered}$ | $\begin{aligned} & 0.034^{*} \\ & (0.018) \end{aligned}$ |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.676 | 0.003 | 0.018 | 0.002 | 0.124 | 0.019 | 0.198 | 0.006 | 0.109 | 0.143 | 0.003 | 0.050 |
| Com. Mean - Year 5 | 0.655 | 0.002 | 0.013 | 0.003 | 0.057 | 0.029 | 0.185 | 0.003 | 0.113 | 0.145 | 0.006 | 0.101 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1-8 }}=0\right)$ | 0.983 | 0.611 | 0.308 | 0.545 | 0.849 | 0.200 | 0.429 | 0.223 | 0.151 | 0.358 | 0.589 | 0.578 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Pre1-8 }}=0\right)$ | 0.224 | 0.633 | 0.421 | 0.956 | 0.192 | 0.104 | 0.237 | 0.444 | 0.679 | 0.077 | 0.216 | 0.869 |
| $R^{2}$ | 0.48 | 0.07 | 0.18 | 0.24 | 0.20 | 0.19 | 0.21 | 0.27 | 0.35 | 0.28 | 0.21 | 0.21 |
| Observations | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 | 55,440 |
| Individuals | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 | 1,386 |

[^4]Table A-18: Effects of Enrollment and Graduation from The Excel Center on Industry Employment, White Females

|  | Any | Const. | Mfg. | Wholesale | Retail | Trans. | Business Services | Education | Health | Hotel \& Restaurant (10) | Other Services (11) | Other |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | 0.027 | 0.002 | 0.001 | 0.001 | -0.026* | 0.003 | -0.003 | -0.000 | -0.002 | 0.051** | 0.000 | 0.001 |
|  | (0.026) | (0.002) | $(0.003)$ | (0.001) | $(0.015)$ | $(0.004)$ | $(0.014)$ | $(0.002)$ | (0.011) | (0.021) | (0.006) | (0.005) |
| Enrolled X Year 2 | 0.051* | -0.000 | -0.001 | 0.000 | -0.015 | -0.000 | 0.004 | -0.004 | 0.011 | 0.045* | 0.010* | 0.002 |
|  | (0.027) | (0.002) | (0.006) | (0.001) | (0.017) | (0.003) | (0.012) | (0.003) | (0.011) | (0.025) | (0.006) | (0.004) |
| Enrolled X Year 3 | 0.043 | 0.003 | 0.002 | -0.001 | 0.006 | 0.001 | 0.014 | -0.005 | -0.011 | 0.032 | 0.005 | -0.001 |
|  | (0.032) | (0.002) | (0.008) | (0.002) | (0.018) | (0.004) | (0.012) | (0.004) | (0.020) | (0.026) | (0.005) | (0.006) |
| Enrolled X Year 4 | 0.078** | 0.002 | 0.011 | 0.000 | 0.030* | 0.001 | 0.013 | -0.010** | 0.012 | 0.007 | 0.008** | 0.004 |
|  | (0.033) | (0.002) | (0.007) | (0.003) | (0.017) | (0.004) | (0.015) | (0.005) | (0.012) | (0.027) | (0.004) | (0.005) |
| Enrolled X Year 5 | 0.093*** | 0.002 | 0.014* | 0.001 | 0.015 | 0.002 | 0.010 | -0.004 | 0.020* | 0.021 | 0.010** | 0.004 |
|  | (0.034) | (0.004) | (0.007) | (0.002) | (0.019) | (0.004) | (0.015) | (0.003) | (0.011) | (0.026) | (0.004) | (0.006) |
| Graduated X Year 1 | -0.053** | -0.003 | -0.001 | -0.001 | 0.005 | -0.000 | -0.025** | 0.002 | -0.002 | -0.028 | -0.000 | 0.000 |
|  | (0.025) | (0.002) | (0.005) | (0.001) | (0.017) | (0.003) | (0.012) | (0.003) | (0.009) | (0.021) | (0.006) | (0.007) |
| Graduated X Year 2 | 0.030 | 0.002 | -0.004 | -0.000 | 0.028 | 0.006 | -0.006 | 0.007 | 0.029** | -0.040* | 0.001 | 0.009 |
|  | (0.029) | (0.003) | (0.006) | (0.002) | (0.019) | (0.005) | (0.015) | (0.005) | (0.013) | (0.024) | (0.007) | (0.009) |
| Graduated X Year 3 | 0.074** | 0.002 | -0.008 | 0.005 | 0.017 | 0.005 | -0.012 | 0.022*** | $0.055^{* * *}$ | -0.030 | 0.006 | 0.012 |
|  | (0.032) | (0.004) | (0.007) | (0.005) | (0.019) | (0.005) | (0.015) | (0.008) | (0.017) | (0.024) | (0.007) | (0.009) |
| Graduated X Year 4 | 0.089*** | 0.003 | 0.002 | 0.003 | 0.029 | 0.001 | -0.014 | 0.023*** | 0.043*** | -0.028 | -0.001 | 0.029** |
|  | (0.033) | (0.004) | (0.009) | (0.004) | (0.020) | (0.004) | (0.016) | (0.008) | (0.015) | (0.023) | (0.005) | (0.012) |
| Graduated X Year 5 | 0.108*** | 0.002 | -0.004 | 0.001 | 0.024 | 0.007 | 0.009 | 0.025** | 0.049*** | -0.034 | 0.002 | 0.025** |
|  | (0.033) | (0.005) | (0.009) | (0.004) | (0.019) | (0.006) | (0.017) | (0.010) | (0.017) | (0.023) | (0.006) | (0.012) |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.387 | 0.001 | 0.013 | 0.003 | 0.064 | 0.005 | 0.070 | 0.009 | 0.034 | 0.177 | 0.002 | 0.010 |
| Com. Mean - Year 5 | 0.343 | 0.004 | 0.012 | 0.002 | 0.066 | 0.004 | 0.069 | 0.002 | 0.035 | 0.138 | 0.001 | 0.011 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1-8 }}=0\right)$ | 0.801 | 0.351 | 0.109 | 0.443 | 0.060 | 0.828 | 0.526 | 0.380 | 0.573 | 0.962 | 0.044 | 0.934 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Pre1-8 }}=0\right)$ | 0.769 | 0.176 | 0.068 | 0.594 | 0.522 | 0.945 | 0.288 | 0.131 | 0.538 | 0.381 | 0.767 | 0.450 |
| $R^{2}$ | 0.41 | 0.17 | 0.16 | 0.09 | 0.22 | 0.14 | 0.15 | 0.23 | 0.34 | 0.27 | 0.30 | 0.14 |
| Observations | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 | 51,680 |
| Individuals | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 | 1,292 |

[^5]Table A-19: Effects of Enrollment and Graduation from The Excel Center on Industry Employment, Black Males

|  | Any <br> (1) | Const. <br> (2) | Mfg. <br> (3) |  | Retail <br> (5) | Trans. <br> (6) | Business Services (7) | Education (8) | Health <br> (9) | Hotel \& Restaurant (10) | Other Services (11) | Other <br> (12) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | 10) | (11) | (12) |
| Enrolled X Year 1 | $\begin{gathered} \hline-0.020 \\ (0.025) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.002 \\ (0.005) \end{gathered}$ | $\begin{aligned} & \hline 0.005^{* *} \\ & (0.002) \end{aligned}$ | $\begin{gathered} \hline-0.008 \\ (0.011) \end{gathered}$ | $\begin{gathered} \hline-0.007 \\ (0.008) \end{gathered}$ | $\begin{aligned} & -0.013 \\ & (0.017) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{gathered} \hline-0.004 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.021) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.001 \\ (0.006) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{gathered} 0.064^{* *} \\ (0.029) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.003) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.002 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.013) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.025 \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.045^{* *} \\ (0.019) \end{gathered}$ | $\begin{aligned} & -0.016 \\ & (0.015) \end{aligned}$ | $\begin{gathered} 0.006 \\ (0.006) \end{gathered}$ |
| Enrolled X Year 3 | $\begin{gathered} 0.072^{* *} \\ (0.029) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.012^{*} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.008 \\ (0.015) \end{gathered}$ | $\begin{aligned} & -0.010 \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.013 \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.011 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.055^{* *} \\ & (0.022) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.004) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.008) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 0.075^{* *} \\ (0.030) \end{gathered}$ | $\begin{gathered} -0.004 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.021^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.007 \\ & (0.015) \end{aligned}$ | $\begin{aligned} & -0.008 \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.025 \\ (0.020) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.008 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.038^{*} \\ & (0.020) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.006) \end{gathered}$ |
| Enrolled X Year 5 | $\begin{gathered} 0.062^{* *} \\ (0.030) \end{gathered}$ | $\begin{aligned} & -0.006 \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.016^{*} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.010^{* *} \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.018 \\ (0.012) \end{gathered}$ | $\begin{gathered} 0.009 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.013 \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.012 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.005) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.008) \end{aligned}$ |
| Graduated X Year 1 | $\begin{aligned} & -0.016 \\ & (0.034) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.007^{*} \\ (0.004) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.021 \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.013) \end{gathered}$ | $\begin{aligned} & -0.023 \\ & (0.020) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.001) \end{gathered}$ | $\begin{aligned} & -0.005 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.007 \\ & (0.023) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.010) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.010) \end{aligned}$ |
| Graduated X Year 2 | $\begin{gathered} 0.057 \\ (0.044) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.004) \end{aligned}$ | $\begin{gathered} 0.007 \\ (0.011) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.006) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.020) \end{gathered}$ | $\begin{aligned} & 0.033^{*} \\ & (0.019) \end{aligned}$ | $\begin{aligned} & -0.009 \\ & (0.030) \end{aligned}$ | $\begin{gathered} 0.006 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.011) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.033) \end{aligned}$ | $\begin{gathered} 0.015 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.012) \end{gathered}$ |
| Graduated X Year 3 | $\begin{aligned} & 0.078^{*} \\ & (0.040) \end{aligned}$ | $\begin{gathered} 0.007 \\ (0.008) \end{gathered}$ | $\begin{aligned} & -0.009 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.021 \\ (0.023) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.013) \end{gathered}$ | $\begin{gathered} 0.027 \\ (0.031) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.005 \\ (0.011) \end{gathered}$ | $\begin{aligned} & -0.014 \\ & (0.038) \end{aligned}$ | $\begin{gathered} 0.022 \\ (0.017) \end{gathered}$ | $\begin{gathered} 0.016 \\ (0.012) \end{gathered}$ |
| Graduated X Year 4 | $\begin{gathered} 0.060 \\ (0.044) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.015) \end{gathered}$ | $\begin{aligned} & -0.005 \\ & (0.006) \end{aligned}$ | $\begin{gathered} 0.033 \\ (0.025) \end{gathered}$ | $\begin{aligned} & -0.012 \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.053^{*} \\ & (0.029) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.015) \end{gathered}$ | $\begin{aligned} & -0.025 \\ & (0.037) \end{aligned}$ | $\begin{aligned} & -0.009^{*} \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.006 \\ (0.012) \end{gathered}$ |
| Graduated X Year 5 | $\begin{aligned} & 0.091^{*} \\ & (0.047) \end{aligned}$ | $\begin{gathered} 0.010 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.014) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.035 \\ (0.026) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.014) \end{aligned}$ | $\begin{gathered} 0.015 \\ (0.029) \end{gathered}$ | $\begin{gathered} 0.011 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.029 \\ (0.020) \end{gathered}$ | $\begin{aligned} & -0.017 \\ & (0.037) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.009) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.011) \end{aligned}$ |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.497 | 0.012 | 0.014 | 0.007 | 0.080 | 0.034 | 0.170 | 0.008 | 0.029 | 0.124 | 0.007 | 0.011 |
| Com. Mean - Year 5 | 0.488 | 0.015 | 0.022 | 0.005 | 0.055 | 0.025 | 0.191 | 0.001 | 0.031 | 0.127 | 0.007 | 0.016 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre1-8 }}=0\right)$ | 0.858 | 0.334 | 0.140 | 0.942 | 0.836 | 0.390 | 0.298 | 0.432 | 0.685 | 0.169 | 0.475 | 0.530 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Prel-8 }}=0\right)$ | 0.624 | 0.216 | 0.020 | 0.167 | 0.953 | 0.778 | 0.182 | 0.601 | 0.297 | 0.399 | 0.379 | 0.267 |
| $R^{2}$ | 0.43 | 0.22 | 0.16 | 0.18 | 0.19 | 0.19 | 0.22 | 0.41 | 0.24 | 0.22 | 0.16 | 0.14 |
| Observations | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 | 47,320 |
| Individuals | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 | 1,183 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters - 20 through 19 and are re-weighted using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-20: Effects of Enrollment and Graduation from The Excel Center on Industry Employment, White Males

|  | Any <br> (1) | Const. <br> (2) | Mfg. <br> (3) | Wholesale <br> (4) | Retail <br> (5) | Trans. <br> (6) | Business Services (7) | Education <br> (8) | Health <br> (9) | $\qquad$ | Other Services (11) | Other <br> (12) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enrolled X Year 1 | $\begin{gathered} -0.036 \\ (0.028) \end{gathered}$ | $\begin{gathered} -0.009 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.008) \end{gathered}$ | $\begin{gathered} -0.009 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.041^{* *} \\ (0.019) \end{gathered}$ | $\begin{aligned} & 0.003^{*} \\ & (0.002) \end{aligned}$ | $\begin{gathered} -0.000 \\ (0.006) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.022) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.009 \\ (0.007) \end{gathered}$ |
| Enrolled X Year 2 | $\begin{aligned} & -0.010 \\ & (0.032) \end{aligned}$ | $\begin{aligned} & -0.029^{*} \\ & (0.017) \end{aligned}$ | $\begin{gathered} 0.017 \\ (0.013) \end{gathered}$ | $\begin{aligned} & -0.008 \\ & (0.005) \end{aligned}$ | $\begin{gathered} 0.047^{* *} \\ (0.020) \end{gathered}$ | $\begin{aligned} & -0.019^{*} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.016 \\ & (0.020) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.016 \\ & (0.030) \end{aligned}$ | $\begin{gathered} 0.007 \\ (0.006) \end{gathered}$ | $\begin{aligned} & 0.012^{*} \\ & (0.007) \end{aligned}$ |
| Enrolled X Year 3 | $\begin{gathered} 0.018 \\ (0.045) \end{gathered}$ | $\begin{aligned} & -0.055^{*} \\ & (0.029) \end{aligned}$ | $\begin{gathered} 0.016 \\ (0.015) \end{gathered}$ | $\begin{aligned} & -0.010 \\ & (0.010) \end{aligned}$ | $\begin{gathered} 0.046^{* *} \\ (0.021) \end{gathered}$ | $\begin{aligned} & -0.010 \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.055^{* * *} \\ (0.020) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.007 \\ & (0.007) \end{aligned}$ | $\begin{gathered} 0.006 \\ (0.029) \end{gathered}$ | $\begin{gathered} -0.026^{* *} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.010) \end{gathered}$ |
| Enrolled X Year 4 | $\begin{gathered} 0.004 \\ (0.047) \end{gathered}$ | $\begin{gathered} -0.051^{*} \\ (0.029) \end{gathered}$ | $\begin{gathered} 0.030^{* *} \\ (0.015) \end{gathered}$ | $\begin{gathered} -0.011 \\ (0.011) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.022) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.008) \end{gathered}$ | $\begin{aligned} & 0.039^{*} \\ & (0.023) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.001) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.006) \end{aligned}$ | $\begin{gathered} 0.010 \\ (0.027) \end{gathered}$ | $\begin{aligned} & -0.021 \\ & (0.014) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.012) \end{gathered}$ |
| Enrolled X Year 5 | $\begin{gathered} 0.058 \\ (0.047) \end{gathered}$ | $\begin{aligned} & -0.034 \\ & (0.031) \end{aligned}$ | $\begin{aligned} & 0.033^{*} \\ & (0.017) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.007) \end{gathered}$ | $\begin{gathered} 0.030 \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.020 \\ (0.022) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.002) \end{aligned}$ | $\begin{gathered} 0.003 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.027 \\ (0.025) \end{gathered}$ | $\begin{aligned} & -0.020 \\ & (0.014) \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.013) \end{aligned}$ |
| Graduated X Year 1 | $\begin{aligned} & -0.035 \\ & (0.029) \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.007 \\ & (0.009) \end{aligned}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.023) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.009) \end{gathered}$ | $\begin{aligned} & -0.005 \\ & (0.022) \end{aligned}$ | $\begin{gathered} 0.008 \\ (0.010) \end{gathered}$ | $\begin{aligned} & -0.012 \\ & (0.011) \end{aligned}$ | $\begin{gathered} 0.001 \\ (0.025) \end{gathered}$ | $\begin{aligned} & -0.014 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.013 \\ & (0.013) \end{aligned}$ |
| Graduated X Year 2 | $\begin{gathered} 0.035 \\ (0.037) \end{gathered}$ | $\begin{aligned} & -0.004 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.015 \\ & (0.013) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.006 \\ (0.024) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.014) \end{gathered}$ | $\begin{aligned} & 0.055^{*} \\ & (0.032) \end{aligned}$ | $\begin{gathered} 0.023 \\ (0.019) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.012) \end{aligned}$ | $\begin{aligned} & -0.022 \\ & (0.030) \end{aligned}$ | $\begin{aligned} & -0.010 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & -0.006 \\ & (0.015) \end{aligned}$ |
| Graduated X Year 3 | $\begin{gathered} 0.086^{* *} \\ (0.036) \end{gathered}$ | $\begin{aligned} & -0.009 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & -0.015 \\ & (0.016) \end{aligned}$ | $\begin{gathered} 0.005 \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.025 \\ (0.027) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.013) \end{gathered}$ | $\begin{aligned} & 0.060^{*} \\ & (0.034) \end{aligned}$ | $\begin{gathered} 0.021 \\ (0.019) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & -0.011 \\ & (0.027) \end{aligned}$ | $\begin{aligned} & -0.007 \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.009 \\ (0.016) \end{gathered}$ |
| Graduated X Year 4 | $\begin{gathered} 0.065 \\ (0.042) \end{gathered}$ | $\begin{aligned} & -0.009 \\ & (0.012) \end{aligned}$ | $\begin{gathered} 0.007 \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.044 \\ (0.028) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.013) \end{gathered}$ | $\begin{gathered} 0.021 \\ (0.030) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.005) \end{gathered}$ | $\begin{gathered} 0.009 \\ (0.012) \end{gathered}$ | $\begin{aligned} & -0.010 \\ & (0.032) \end{aligned}$ | $\begin{aligned} & -0.009 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.016) \end{aligned}$ |
| Graduated X Year 5 | $\begin{gathered} 0.034 \\ (0.048) \end{gathered}$ | $\begin{aligned} & -0.024 \\ & (0.018) \end{aligned}$ | $\begin{aligned} & 0.066^{*} \\ & (0.034) \end{aligned}$ | $\begin{aligned} & -0.011 \\ & (0.007) \end{aligned}$ | $\begin{gathered} 0.028 \\ (0.029) \end{gathered}$ | $\begin{gathered} 0.022 \\ (0.018) \end{gathered}$ | $\begin{gathered} 0.004 \\ (0.025) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.014) \end{gathered}$ | $\begin{gathered} -0.052^{* *} \\ (0.024) \end{gathered}$ | $\begin{aligned} & -0.009 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.009 \\ & (0.017) \end{aligned}$ |
| Relative Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Person FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Calendar Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Age Bin X Rel. Quarter FE | X | X | X | X | X | X | X | X | X | X | X | X |
| Com. Mean - Year 4 | 0.583 | 0.096 | 0.052 | 0.021 | 0.089 | 0.018 | 0.106 | 0.000 | 0.009 | 0.133 | 0.031 | 0.027 |
| Com. Mean - Year 5 | 0.548 | 0.109 | 0.059 | 0.011 | 0.064 | 0.021 | 0.105 | 0.001 | 0.006 | 0.110 | 0.024 | 0.038 |
| $P\left(\hat{\beta}_{\text {Enroll }}^{\text {Pre }}{ }^{\text {P }}=0\right)$ | 0.688 | 0.172 | 0.668 | 0.593 | 0.465 | 0.203 | 0.219 | 0.297 | 0.678 | 0.398 | 0.658 | 0.105 |
| $P\left(\hat{\beta}_{\text {Grad }}^{\text {Pre1-8 }}=0\right)$ | 0.736 | 0.363 | 0.121 | 0.412 | 0.559 | 0.490 | 0.300 | 0.290 | 0.514 | 0.898 | 0.345 | 0.150 |
| $R^{2}$ | 0.45 | 0.29 | 0.24 | 0.16 | 0.23 | 0.25 | 0.19 | 0.21 | 0.30 | 0.24 | 0.24 | 0.17 |
| Observations | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 | 39,640 |
| Individuals | 991 | 991 | 991 | 991 | 991 | 991 | 991 | 991 | 991 | 991 | 991 | 991 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters - 20 through 19 and are re-weighted using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-21: Effect of Enrollment and Graduation from The Excel Center on Employment Stability

|  | Number of Quarters |  |  |  | Coef. of Variation Earnings <br> (5) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employed <br> (1) | Continuous Employment Any <br> (2) | Continuous <br> Employment in Sector <br> (3) | Continuous Employment in Industry <br> (4) |  |
| Panel A: Black Females |  |  |  |  |  |
| Graduated | $\begin{gathered} -0.19 \\ (0.51) \end{gathered}$ | $\begin{gathered} -0.14 \\ (0.54) \end{gathered}$ | $\begin{gathered} 0.09 \\ (0.35) \end{gathered}$ | $\begin{gathered} 0.43 \\ (0.30) \end{gathered}$ | $\begin{aligned} & -0.05 \\ & (0.07) \end{aligned}$ |
| Enrolled | $\begin{aligned} & -0.25 \\ & (0.80) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.57 \\ & (1.05) \\ & \hline \end{aligned}$ | $\begin{gathered} 0.10 \\ (0.35) \\ \hline \end{gathered}$ | $\begin{gathered} 0.08 \\ (0.26) \\ \hline \end{gathered}$ | $\begin{gathered} -0.02 \\ (0.12) \\ \hline \end{gathered}$ |
| Comp. Mean | 13.08 | 10.27 | 5.22 | 4.36 | 1.31 |
| $R^{2}$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Observations | 1,386 | 1,386 | 1,386 | 1,386 | 1,320 |
| Panel B: White Females |  |  |  |  |  |
| Graduated | $\begin{aligned} & 0.94^{*} \\ & (0.50) \end{aligned}$ | $\begin{aligned} & 0.89^{*} \\ & (0.47) \end{aligned}$ | $\begin{gathered} 0.80^{* *} \\ (0.32) \end{gathered}$ | $\begin{gathered} 0.96^{* * *} \\ (0.29) \end{gathered}$ | $\begin{gathered} -0.35^{* * *} \\ (0.07) \end{gathered}$ |
| Enrolled | $\begin{gathered} 1.76^{* * *} \\ (0.63) \\ \hline \end{gathered}$ | $\begin{gathered} 1.57^{* * *} \\ (0.52) \\ \hline \end{gathered}$ | $\begin{gathered} 0.86^{* *} \\ (0.36) \\ \hline \end{gathered}$ | $\begin{aligned} & 0.62^{*} \\ & (0.33) \\ & \hline \end{aligned}$ | $\begin{gathered} -0.12 \\ (0.09) \\ \hline \end{gathered}$ |
| Comp. Mean | 8.01 | 5.81 | 3.81 | 3.36 | 1.77 |
| $R^{2}$ | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 |
| Observations | 1,293 | 1,293 | 1,293 | 1,293 | 1,168 |
| Panel C: Black Males |  |  |  |  |  |
| Graduated | $\begin{aligned} & 1.34^{* *} \\ & (0.62) \end{aligned}$ | $\begin{gathered} 1.55^{* *} \\ (0.63) \end{gathered}$ | $\begin{aligned} & 0.76^{*} \\ & (0.42) \end{aligned}$ | $\begin{gathered} 0.81^{* *} \\ (0.40) \end{gathered}$ | $\begin{gathered} -0.19 * * \\ (0.08) \end{gathered}$ |
| Enrolled | $\begin{gathered} 1.24^{* * *} \\ (0.43) \end{gathered}$ | $\begin{gathered} 1.03^{* *} \\ (0.41) \end{gathered}$ | $\begin{gathered} 0.71^{* * *} \\ (0.21) \end{gathered}$ | $\begin{gathered} 0.77^{* * *} \\ (0.19) \end{gathered}$ | $\begin{gathered} -0.19 * * \\ (0.07) \end{gathered}$ |
| Comp. Mean | 9.87 | 6.99 | 3.89 | 3.30 | 1.70 |
| $R^{2}$ | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 |
| Observations | 1,183 | 1,183 | 1,183 | 1,183 | 1,100 |
| Panel D: White Males |  |  |  |  |  |
| Graduated | $\begin{gathered} 0.89 \\ (0.55) \end{gathered}$ | $\begin{aligned} & 1.32^{* *} \\ & (0.59) \end{aligned}$ | $\begin{gathered} 0.95^{* *} \\ (0.39) \end{gathered}$ | $\begin{gathered} 1.07^{* * *} \\ (0.34) \end{gathered}$ | $\begin{gathered} -0.27^{* * *} \\ (0.07) \end{gathered}$ |
| Enrolled | $\begin{gathered} 0.57 \\ (0.52) \\ \hline \end{gathered}$ | $\begin{array}{r} -0.05 \\ (0.55) \\ \hline \end{array}$ | $\begin{gathered} -0.42 \\ (0.45) \\ \hline \end{gathered}$ | $\begin{aligned} & -0.76^{*} \\ & (0.44) \\ & \hline \end{aligned}$ | $\begin{gathered} 0.01 \\ (0.08) \\ \hline \end{gathered}$ |
| Comp. Mean | 11.11 | 8.87 | 5.74 | 5.35 | 1.42 |
| $R^{2}$ | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Observations | 994 | 994 | 994 | 994 | 935 |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. This sample uses one observation per applicant. Outcomes are measured using post-application earnings data in quarter -20 to quarter 19. Column (1) counts the total number of quarters with positive earnings. Columns (2) count the longest string of consecutive quarters of with positive earnings. Columns (3) and (4) narrow to consecutive strings with the same 2-digit NAICS code and 6-digit NAICS code, respectively. Column (5) measures the coefficient of variation of total earnings across quarters within a person. All specifications measure simple post-period differences, weighted by inverse propensity scores. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-22: Effects of The Excel Center on Professional Certificates, Black Females

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.232 | 0.079** | (0.039) | 0.434*** | (0.037) |
| Agriculture | 0.002 | 0.002 | (0.003) | -0.003 | (0.002) |
| Construction | 0.003 | -0.000 | (0.004) | -0.001 | (0.003) |
| Manufacturing | 0.026 | 0.016 | (0.012) | 0.049** | (0.021) |
| Retail Trade | 0.000 | 0.000*** | (0.000) | 0.000*** | (0.000) |
| Transportation \& Warehousing | 0.000 | 0.000*** | (0.000) | 0.000*** | (0.000) |
| Information | 0.021 | -0.015 | (0.010) | -0.004 | (0.004) |
| Scientific \& Technical Services | 0.025 | 0.004 | (0.012) | 0.134*** | (0.032) |
| Business Services | -0.000 | -0.000 | (0.000) | 0.005 | (0.005) |
| Finance | 0.000 | 0.001 | (0.001) | 0.001 | (0.003) |
| Educational Services | 0.090 | 0.005 | (0.023) | 0.071** | (0.030) |
| Healthcare \& Social Assistance | 0.091 | 0.030 | (0.024) | $0.138^{* * *}$ | (0.033) |
| Arts, Entertainment, \& Recreation | 0.002 | -0.002 | (0.002) | -0.000 | (0.000) |
| Hotels \& Restaurants | 0.014 | -0.003 | (0.007) | 0.013 | (0.010) |
| Other Services | 0.022 | -0.003 | (0.009) | 0.012 | (0.013) |
| Public Adminministration | 0.002 | 0.002 | (0.003) | -0.004* | (0.002) |
| Life Skills | 0.091 | 0.065*** | (0.024) | 0.228*** | (0.039) |
| Business Skills | 0.008 | $0.031^{* * *}$ | (0.008) | $0.267^{* * *}$ | (0.035) |
| Observations | 319 | 918 |  | 268 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross-section for all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning a professional or course certificate in the the listed industry. See Table B-1 for the mapping of certificate programs to industries. All columns show simple differences re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-23: Effects of The Excel Center on Professional Certificates, White Females

|  | Did Not Enroll Mean <br> (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.347 | 0.028 | (0.046) | $0.368^{* * *}$ | (0.035) |
| Agriculture | 0.029 | -0.000 | (0.012) | 0.016 | (0.013) |
| Construction | 0.003 | 0.007 | (0.005) | -0.003 | (0.006) |
| Manufacturing | 0.022 | -0.004 | (0.010) | $0.148^{* * *}$ | (0.025) |
| Retail Trade | 0.003 | 0.000 | (0.004) | -0.001 | (0.004) |
| Transportation \& Warehousing | -0.000 | 0.001 | (0.001) | -0.001 | (0.001) |
| Information | 0.007 | -0.002 | (0.005) | 0.000 | (0.005) |
| Scientific \& Technical Services | 0.048 | -0.007 | (0.016) | 0.051*** | (0.019) |
| Business Services | 0.001 | 0.001 | (0.002) | -0.002 | (0.002) |
| Finance | 0.016 | -0.006 | (0.009) | 0.013 | (0.009) |
| Educational Services | 0.110 | 0.038 | (0.026) | 0.183*** | (0.033) |
| Healthcare \& Social Assistance | 0.135 | 0.022 | (0.029) | $0.081^{* * *}$ | (0.031) |
| Arts, Entertainment, \& Recreation | 0.000 | 0.000*** | (0.000) | 0.000*** | (0.000) |
| Hotels \& Restaurants | 0.014 | 0.002 | (0.008) | 0.000 | (0.009) |
| Other Services | 0.015 | 0.001 | (0.010) | -0.012* | (0.007) |
| Public Adminministration | -0.000 | 0.003 | (0.002) | 0.008 | (0.006) |
| Life Skills | 0.143 | 0.015 | (0.029) | $0.205^{* * *}$ | (0.034) |
| Business Skills | 0.054 | 0.013 | (0.018) | $0.183 * * *$ | (0.030) |
| Observations | 283 | 814 |  | 325 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross-section for all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning a professional or course certificate in the the listed industry. See Table B-1 for the mapping of certificate programs to industries. All columns show simple differences re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-24: Effects of The Excel Center on Professional Certificates, Black Males

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.288 | 0.062* | (0.032) | 0.367*** | (0.051) |
| Agriculture | 0.003 | 0.003 | (0.004) | $-0.006^{* *}$ | (0.003) |
| Construction | 0.042 | -0.006 | (0.013) | 0.026 | (0.022) |
| Manufacturing | 0.018 | 0.022** | (0.010) | 0.167*** | (0.038) |
| Retail Trade | 0.000 | $0.000{ }^{* * *}$ | (0.000) | 0.000*** | (0.000) |
| Transportation \& Warehousing | 0.013 | -0.006 | (0.007) | 0.001 | (0.009) |
| Information | 0.011 | 0.003 | (0.008) | 0.022 | (0.016) |
| Scientific \& Technical Services | 0.033 | $0.043^{* * *}$ | (0.014) | $0.154^{* * *}$ | (0.042) |
| Business Services | 0.000 | $-0.000^{* * *}$ | (.) | 0.005 | (0.005) |
| Finance | 0.002 | 0.001 | (0.003) | 0.001 | (0.005) |
| Educational Services | 0.024 | -0.012 | (0.009) | 0.026* | (0.015) |
| Healthcare \& Social Assistance | 0.059 | 0.022 | (0.016) | 0.074** | (0.033) |
| Arts, Entertainment, \& Recreation | 0.003 | 0.001 | (0.004) | -0.000 | (0.004) |
| Hotels \& Restaurants | 0.022 | -0.014 | (0.009) | 0.025 | (0.019) |
| Other Services | 0.056 | -0.017 | (0.015) | 0.004 | (0.022) |
| Public Adminministration | 0.008 | -0.006 | (0.006) | -0.003 | (0.002) |
| Life Skills | 0.099 | $0.079^{* * *}$ | (0.023) | $0.154^{* * *}$ | (0.050) |
| Business Skills | 0.021 | $0.028^{* *}$ | (0.011) | $0.193 * * *$ | (0.044) |
| Observations | 344 | 751 |  | 149 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross-section for all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning a professional or course certificate in the the listed industry. See Table B-1 for the mapping of certificate programs to industries. All columns show simple differences re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-25: Effects of The Excel Center on Professional Certificates, White Males

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.481 | -0.044 | (0.045) | $0.431^{* * *}$ | (0.034) |
| Agriculture | 0.061 | -0.010 | (0.019) | 0.044* | (0.024) |
| Construction | 0.080 | -0.005 | (0.023) | 0.026 | (0.027) |
| Manufacturing | 0.041 | 0.034* | (0.018) | $0.283{ }^{* * *}$ | (0.043) |
| Retail Trade | 0.000 | 0.000*** | (0.000) | $0.000^{* * *}$ | (0.000) |
| Transportation \& Warehousing | 0.003 | 0.027*** | (0.008) | $-0.027^{* * *}$ | (0.008) |
| Information | 0.013 | 0.010 | (0.011) | -0.012 | (0.010) |
| Scientific \& Technical Services | 0.053 | -0.008 | (0.019) | $0.116^{* * *}$ | (0.029) |
| Business Services | 0.006 | -0.001 | (0.005) | 0.008 | (0.008) |
| Finance | 0.004 | 0.005 | (0.006) | -0.000 | (0.008) |
| Educational Services | 0.019 | 0.007 | (0.012) | $0.128^{* * *}$ | (0.037) |
| Healthcare \& Social Assistance | 0.107 | -0.015 | (0.039) | 0.070** | (0.031) |
| Arts, Entertainment, \& Recreation | 0.008 | 0.001 | (0.009) | -0.005 | (0.006) |
| Hotels \& Restaurants | 0.035 | -0.022 | (0.016) | 0.008 | (0.011) |
| Other Services | 0.119 | -0.033 | (0.027) | 0.006 | (0.026) |
| Public Adminministration | 0.004 | -0.002 | (0.005) | -0.002 | (0.002) |
| Life Skills | 0.140 | 0.064** | (0.031) | 0.087** | (0.044) |
| Business Skills | 0.059 | 0.008 | (0.019) | $0.097^{* *}$ | (0.038) |
| Observations | 263 | 628 |  | 197 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross-section for all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning a professional or course certificate in the the listed industry. See Table B-1 for the mapping of certificate programs to industries. All columns show simple differences re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

Table A-26: Effects of The Excel Center on College Credits, Black Females

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef <br> (2) | S.E <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.136 | -0.017 | (0.029) | 0.215*** | (0.037) |
| Agriculture | -0.000 | 0.001 | (0.001) | -0.001 | (0.001) |
| Construction | 0.000 | 0.000*** | (0.000) | 0.000*** | (0.000) |
| Manufacturing | 0.002 | -0.002 | (0.002) | 0.006 | (0.006) |
| Transportation \& Warehousing | 0.000 | 0.000*** | (0.000) | 0.000*** | (0.000) |
| Information | 0.004 | -0.004 | (0.004) | 0.004 | (0.004) |
| Scientific \& Technical Services | 0.012 | -0.003 | (0.007) | 0.009 | (0.008) |
| Business Services | 0.000 | 0.003* | (0.002) | 0.001 | (0.004) |
| Educational Services | 0.010 | -0.005 | (0.006) | 0.026** | (0.011) |
| Healthcare \& Social Assistance | 0.066 | -0.014 | (0.018) | $0.107^{* * *}$ | (0.030) |
| Arts, Entertainment, \& Recreation | 0.002 | -0.001 | (0.003) | -0.002 | (0.002) |
| Hotels \& Restaurants | 0.003 | -0.000 | (0.003) | 0.014 | (0.011) |
| Other Services | -0.000 | 0.001 | (0.001) | 0.002 | (0.003) |
| Public Adminministration | 0.005 | 0.002 | (0.004) | 0.006 | (0.007) |
| Business Skills | 0.014 | 0.010 | (0.013) | 0.036** | (0.018) |
| Liberal Arts | 0.035 | -0.008 | (0.014) | $0.035^{* *}$ | (0.016) |
| Observations | 319 | 918 |  | 268 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning any college credit in the listed industry. See Table B-2 for the mapping of degree programs to industries. All columns are re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-27: Effects of The Excel Center on College Credits, White Females

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.133 | -0.046 | (0.040) | $0.202^{* * *}$ | (0.031) |
| Agriculture | 0.000 | 0.000 | (0.000) | 0.005 | (0.005) |
| Construction | 0.000 | -0.000 | (0.000) | 0.003 | (0.003) |
| Manufacturing | -0.000 | 0.001 | (0.001) | -0.001 | (0.001) |
| Transportation \& Warehousing | 0.000 | 0.000*** | (0.000) | $0.000^{* * *}$ | (0.000) |
| Information | 0.003 | -0.002 | (0.004) | 0.002 | (0.003) |
| Scientific \& Technical Services | 0.040 | -0.033 | (0.036) | 0.027* | (0.015) |
| Business Services | 0.005 | -0.001 | (0.005) | -0.002 | (0.003) |
| Educational Services | 0.007 | -0.000 | (0.005) | 0.029** | (0.012) |
| Healthcare \& Social Assistance | 0.044 | -0.004 | (0.014) | 0.069*** | (0.020) |
| Arts, Entertainment, \& Recreation | -0.000 | 0.002 | (0.002) | -0.002 | (0.002) |
| Hotels \& Restaurants | 0.000 | 0.002 | (0.002) | 0.001 | (0.004) |
| Other Services | 0.000 | 0.000 | (0.000) | 0.012* | (0.006) |
| Public Adminministration | 0.001 | 0.001 | (0.002) | 0.016* | (0.010) |
| Business Skills | 0.011 | -0.004 | (0.006) | 0.020** | (0.010) |
| Liberal Arts | 0.037 | -0.007 | (0.016) | $0.063^{* * *}$ | (0.020) |
| Observations | 283 | 814 |  | 325 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning any college credit in the listed industry. See Table B-2 for the mapping of degree programs to industries. All columns are re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-28: Effects of The Excel Center on College Credits, Black Males

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.078 | -0.027 | (0.017) | $0.170^{* * *}$ | (0.045) |
| Agriculture | 0.000 | $0.000^{* * *}$ | (0.000) | 0.000*** | (0.000) |
| Construction | 0.012 | -0.007 | (0.007) | -0.000 | (0.005) |
| Manufacturing | 0.007 | -0.005 | (0.005) | 0.004 | (0.006) |
| Transportation \& Warehousing | 0.000 | 0.000 | (0.000) | 0.005 | (0.005) |
| Information | 0.000 | $-0.000^{* * *}$ | (.) | 0.011 | (0.011) |
| Scientific \& Technical Services | 0.013 | -0.003 | (0.008) | 0.046** | (0.018) |
| Business Services | 0.003 | -0.003 | (0.003) | -0.000 | (0.000) |
| Educational Services | 0.000 | 0.004 | (0.003) | -0.004 | (0.003) |
| Healthcare \& Social Assistance | 0.007 | 0.000 | (0.005) | -0.007** | (0.003) |
| Arts, Entertainment, \& Recreation | 0.000 | $0.000^{* * *}$ | (0.000) | $0.000^{* * *}$ | (0.000) |
| Hotels \& Restaurants | 0.003 | -0.001 | (0.003) | 0.010 | (0.009) |
| Other Services | 0.005 | -0.002 | (0.004) | 0.027 | (0.019) |
| Public Adminministration | 0.000 | 0.003* | (0.002) | 0.003 | (0.004) |
| Business Skills | 0.011 | -0.002 | (0.006) | 0.053 | (0.035) |
| Liberal Arts | 0.020 | -0.007 | (0.009) | $0.054^{* *}$ | (0.024) |
| Observations | 344 | 751 |  | 149 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning any college credit in the listed industry. See Table B-2 for the mapping of degree programs to industries. All columns are re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

Table A-29: Effects of The Excel Center on College Credits, While Males

|  | Did Not Enroll Mean (1) | Enrolled |  | Graduated |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Coef. <br> (2) | S.E. <br> (3) | Coef. <br> (4) | S.E. <br> (5) |
| Any | 0.070 | -0.016 | (0.019) | $0.166^{* * *}$ | (0.036) |
| Agriculture | 0.002 | -0.002 | (0.002) | 0.006 | (0.006) |
| Construction | 0.006 | 0.003 | (0.006) | 0.004 | (0.009) |
| Manufacturing | 0.007 | -0.003 | (0.005) | 0.031 | (0.020) |
| Transportation \& Warehousing | 0.000 | $0.000^{* * *}$ | (0.000) | $0.000^{* * *}$ | (0.000) |
| Information | 0.006 | -0.006 | (0.006) | 0.000 | (0.000) |
| Scientific \& Technical Services | 0.019 | -0.016* | (0.009) | 0.022** | (0.010) |
| Business Services | 0.000 | $0.000^{* * *}$ | (0.000) | $0.000^{* * *}$ | (0.000) |
| Educational Services | 0.010 | -0.010 | (0.007) | 0.006 | (0.006) |
| Healthcare \& Social Assistance | 0.006 | -0.001 | (0.007) | 0.014 | (0.010) |
| Arts, Entertainment, \& Recreation | 0.001 | -0.001 | (0.001) | 0.015* | (0.009) |
| Hotels \& Restaurants | 0.000 | $0.000^{* * *}$ | (0.000) | $0.000^{* * *}$ | (0.000) |
| Other Services | 0.005 | 0.002 | (0.006) | 0.027 | (0.017) |
| Public Adminministration | 0.002 | 0.006 | (0.004) | 0.002 | (0.008) |
| Business Skills | 0.005 | 0.003 | (0.005) | 0.012 | (0.010) |
| Liberal Arts | 0.017 | 0.005 | (0.010) | 0.044** | (0.020) |
| Observations | 263 | 628 |  | 197 |  |

Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is an indicator for earning any college credit in the listed industry. See Table B-2 for the mapping of degree programs to industries. All columns are re-weighted using inverse propensity score weights. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

## B Data Appendix

## B. 1 State Administrative Records

We measure education and labor market outcomes using administrative data from the Indiana Management Performance Hub (MPH). The data include quarterly wage records from the Indiana Department of Workforce Development (DWD); information on demographics, high school enrollment and graduation - including qualifying graduation exam (QGE) results - from the Indiana Department of Education (DOE); post-secondary education information from the Indiana Commission for Higher Education (CHE); and professional and course certificates and GED test results from DWD. All state administrative records are limited to what is observable in the state of Indiana, i.e. formal sector employment in Indiana and education obtained by public schools in Indiana.

In addition to the main sample of TEC applicants, we have these same administrative records for all recorded GED test takers in the MPH database. These records primarily cover January 2011 to January 2020. They include all people passing the GED. Coverage of unsuccessful and repeat attempts varies over time. We use data on all available GED takers to categorize higher education credits and certificates (see below). When we measure the return to the GED, we focus on a subset of people who took the test in Indiana between February and September 2014. This group has sufficient follow-up data to match our main sample and complete histories of unsuccessful and repeat tests.

## B.1.1 Employment and Earnings

Employment and earnings records maintained by DWD come from the unemployment insurance (UI) system. Wages associated with quarterly UI records reflect the sum of all wages earned in a given quarter in UI-covered employment. We observe data from the first quarter of 2008 through the first quarter of 2020. This time frame allows us to observe applicants' employment and earnings outcomes at least five years before and after application for our primary sample. We winsorize earnings at the $99^{\text {th }}$ percentile within each calendar quarter separately for our three comparison groups. ${ }^{29}$ When identifying the $99^{\text {th }}$ percentile, we include the implicit 0 values for individuals who do not have a wage record in a given quarter. We adjust earnings for inflation to first quarter 2014 values using the CPI-U Midwest.

We categorize employment by sector using NAICS codes. For people with multiple employers in a quarter, the data list the NAICS code for the employer that paid the most earnings. We construct NAICS industry groups based on the first two digits of the NAICS code. We concentrate on the most popular industries for our sample, including construction (23), manufacturing (31-33), wholesale (42), retail (44-45), transportation (48-49), business services (56), education (61), health care (62), hotels and restaurants (72), and other services (81). All remaining industries are classified as other. Additional detail is used to analyze employment trends in health care and social assistance. We use 4-digit NAICS codes to construct sub-sectors of health, include vocational rehab, general medicine, and home health care. All remaining health sectors are classified as "Other health." We adhere to all NAICS categorizations with the exception of daycare (62-4410), which we classify as education for our analysis.

[^6]
## B.1.2 Secondary Education

The MPH data includes secondary schooling records maintained by DOE. We observe enrollment records but only for secondary school enrollments that occurred within four years of starting ninth grade. The limit to four years means that we can measure enrollment in traditional schooling, which we use to define some baseline demographic and school experience controls. However, we cannot observe adult enrollment in or graduation from secondary school (TEC or otherwise) for most applicants in the administrative data. Instead, we focus on DOE reported results of the Indiana state Graduation Qualifying Exam (GQE).

We also observe GED test attempts from DWD, including test dates and test outcome (pass or fail). States use different but very similar tests for high school equivalency. In 2014, Indiana switched from the GED to the similar TASC High School Equivalency test. We refer to both of these tests as "the GED" and treat taking and passing them as interchangeable.

## B.1.3 Certificates and Higher Education

We track professional and course certificates using DWD data. Common certificates for our study sample include, Preparing for College and Careers; Nutrition and Wellness; Child Development; Applied Digital Application and Responsibilities; and Technical Business Communications. These certificates do not track the date of certificate, so we consider all certificates earned as of the second quarter of 2020.

We categorize certificates into NAICS 2-digit industry codes in two ways. First, we categorize certificates directly based on course descriptions available through annually updated publications of "Indiana State Approved Course Titles and Descriptions." Certificates that were not closely associated with NAICS sectors could be classified as "Life Skills" or "Business Skills." Courses in these categories include "Preparing for College and Careers," "Technical Business Communication," or "Technology Lab." ${ }^{30}$ Second, we categorize certificates based on the empirical distribution of employment among GED test-takers who hold that certificate. To do this, we link all GED testtakers to their industry of employment in the third quarter of 2019. We group employment into sectors using the same NAICS categorization scheme described above. For each certificate, we estimate the share of certificate-earners who work in a given industry and use these industry shares to proxy for the probability of employment in a given sector for our TEC sample. ${ }^{31}$

We measure higher education participation using CHE data on college credits earned and attempted. These data cover only public schools in Indiana, but the vast majority of college-going for this population will be covered by such institutions. For example, Indiana's College Readiness Reports indicate that public schools in Indiana cover $79 \%$ of college-going even for the full population of Indianapolis Public Schools students. The data are reported by school year and we aggregate across schools. Common college credit programs for our sample include Medical/Health Management and Clinical Assistant/Specialist; Liberal Arts and Science; General Studies; Business Administration and Management; and Criminal Justice/Safety Studies.

[^7]We also categorize credit programs into 2-digit NAICS industry codes in two ways. First, we directly code courses to industries informed by course definitions available through the National Center for Education Statistics' Classification of Instruction Programs (CIP) (National Center for Education Statistics, 2022). Courses that could not be associated with any NAICS 2-digit industry code could be classified as "Liberal Arts" (examples include humanities, liberal arts, and general studies) or "Business" (examples include business administration and management). Second, we categorize credit programs using the empirical distribution of employment among GED test-takers with at least one credit in a given field. We implement this method in the same way as for certificates.

## B. 2 Age Bins

In many specifications, we include interactions between a set of age bins and relative time fixed effects. We construct these age bins by identifying 20 age ventiles based on an applicant's integer age at the time of TEC application. In practice, this groups applicants into 15 age groups: 18 and under, $19,20,21,22-23,24,25,26-27,28,29-30,31-32,33-35,36-39,40-45$, and 46 and older.

Table B-1: Certificate Classifications

| Category | DOE Code | Course Title |
| :--- | :---: | :--- |
| Agriculture |  |  |
|  | 5622 | Tractor/Trailer Operation |
|  | 5070 | Advanced Life Science: Animals (L) |
|  | 5072 | Advanced Life Science: Foods (L) |
|  | 5074 | Advanced Life Science: Plants and Soils (L) |
|  | 5002 | Agribusiness Management |
|  | 5088 | Agriculture Power, Structure and Technology |
|  | 5008 | Animal Sciences |
|  | 5022 | Farm Management |
|  | 5132 | Horticultural Science |
|  | 5056 | Introduction to Agriculture, Food and Natural Resources |
|  | 5170 | Plant and Soil Science |
| Business Services | Sustainable Energy Alternatives |  |
|  | 5592 | Building and Facilities Management I |
|  | 5593 | Business \& Facilities Maintenance I |
|  | 5136 | Landscape Management I |
|  | 5137 | Landscape Management II |
| Business Skills |  |  |
|  | 5268 | Advanced Business Management |
|  | 4512 | Applied Business Math |
|  | 4560 | Business Law and Ethics |
|  | 5240 | Business Technology Lab I |
|  | 5244 | Business Technology Lab II |
|  | 5334 | Consumer Economics |
|  | 5966 | Entrepreneurship and New Ventures |
| 4518 | Introduction to Business |  |
|  | 4562 | Principles of Business Management |
|  | 4508 | Technical Business Communications |
| 5260 | Work Based Learning, Business and Marketing |  |
| Construction | 4830 |  |
|  | 4832 | Construction Trades: Electrical I |
|  | 4792 | Introduction to Construction |
|  |  |  |
|  | 5360 | Advanced Child Development |
|  | 5412 | Child Development |
|  | Early Childhood Education I |  |
|  | Early Childhood Education II |  |
|  | Education Professions I |  |

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Table B-1 - continued from previous page

| Category DOE Code Course Title |  |  |
| :---: | :---: | :---: |
| Finance |  |  |
|  | 5258 | Banking and Investment Careers |
| Healthcare |  |  |
|  | 5340 | Advanced Nutrition and Wellness |
|  | 5276 | Anatomy \& Physiology |
|  | 5206 | Dental Assisting IV |
|  | 5203 | Dental Careers I |
|  | 5204 | Dental Careers II |
|  | 5210 | Emergency Medical Services |
|  | 5282 | Health Science Education I |
|  | 5284 | Health Science Education II: Nursing |
|  | 5214 | Health Science II: Pharmacy |
|  | 5215 | Health Science II: Physical Therapy |
|  | 5286 | Health Science II: Special Topics |
|  | 5366 | Human Development and Wellness |
|  | 5336 | Human and Social Services I |
|  | 5294 | Integrated Health Sciences I |
|  | 5208 | Intro to Community Health Services |
|  | 5213 | Intro to Medical Assisting |
|  | 5272 | Introduction to Health Science Careers |
|  | 5274 | Medical Terminology |
|  | 5456 | Nutrition Science Careers I |
|  | 5342 | Nutrition and Wellness |
|  | 5216 | PLTW Human Body Systems |
|  | 5217 | PLTW Medical Interventions |
|  | 5218 | PLTW Principles of Biomedical Sciences |
|  | 5207 | Work Based Learning, Health Science |
| Hotels $\mathcal{E}^{\text {R Restaurants }}$ |  |  |
|  | 5346 | Culinary Arts and Hospitality II: Culinary Arts |
|  | 5440 | Culinary Arts and Hospitality Management |
|  | 5438 | Introduction to Culinary Arts and Hospitality |
|  | 5982 | Marketing in Hospitality |
| Information |  |  |
|  | 4790 | Introduction to Communication |
|  | 5986 | Radio and Television I |
|  | 5992 | Radio and Television II |
| Life Skills |  |  |
|  | 4528 | Digital Applications and Responsibility |
|  | 4540 | Personal Financial Responsibility |
|  | 5254 | Career Planning and Success Skills |
|  | 5364 | Interpersonal Relationships |

Table B-1 - continued from previous page

| Category | DOE Code | Course Title |
| :---: | :---: | :--- |
| 5484 | Personal Resource Management and Family Finance |  |
| 5394 | Preparing for College and Careers |  |
|  | 5256 | Professional Career Internship |
| 5330 | Adult Roles and Responsibilities |  |
| Manufacturing |  |  |
| 5608 | Advanced Manufacturing I |  |
| 5606 | Advanced Manufacturing II |  |
| 5888 | Cabinet and Furniture Manufacturing |  |
| 5420 | Fashion and Textile Careers I \& II |  |
| 5102 | Food Science |  |
| 4796 | Introduction to Advanced Manufacturing and Logistics |  |
| 5380 | Introduction to Fashion and Textiles |  |
| 4784 | Introduction to Manufacturing |  |
| 5782 | Precision Machining I |  |
| 5784 | Precision Machining II |  |
| 5602 | Warehouse Operations and Materials Handling |  |
| 5776 | Welding Technology I |  |
| 5778 | Welding Technology II |  |
| 5892 | Work Based Learning, Trade and Industry |  |
| Other Services |  |  |
|  | X117 | Auto Collision Repair Technology 1 \& 2 |
| 5514 | Automotive Collision Repair I |  |
| 5544 | Automotive Collision Repair II |  |
|  | 5510 | Automotive Services Technology I |
| 5546 | Automotive Services Technology II |  |
| 5802 | Cosmetology I |  |
| 5806 | Cosmetology II |  |
| 5620 | Diesel Service Technology I |  |
| 5842 | Recreational and Mobile Equipment I |  |
| Professional \& Science | Tech Services |  |
| 4816 | Aerospace Engineering PLTW |  |
| 5640 | Architectural Drafting and Design I |  |
| 5610 | Automation and Robotics I |  |
| 4820 | Civil Engineering and Architecture PLTW |  |
| 5650 | Civil Engineering and Architecture non PLTW |  |
| 5570 | Commercial Photography |  |
| 4810 | Computer Integrated Manufacturing PLTW |  |
| 5532 | Computer Network Technology |  |
| 4534 | Computer Programming I |  |
| 5236 | Computer Programming II |  |
|  | Computer Science and Software Engineering PLTW |  |
|  |  |  |

Table B-1 - continued from previous page

| Category | DOE Code | Course Title |
| :---: | :---: | :--- |
| 5230 | Computer Tech Support |  |
| 4800 | Computers in Design and Production |  |
| 4826 | Digital Electronics PLTW |  |
| 5684 | Electronics and Computer Technology I |  |
| 4828 | Engineering Design and Development PLTW |  |
| 5550 | Graphic Design and Layout |  |
| 5572 | Graphic Imaging Technology |  |
| 5232 | Interactive Media |  |
| 4524 | Introduction to Accounting |  |
| 4794 | Introduction to Design Processes |  |
| 4812 | Introduction to Engineering Design PLTW |  |
| 4802 | Introduction to Engineering Design non PLTW |  |
| 5350 | Introduction to Housing and Interior Design |  |
| 5990 | Marketing Field Experience |  |
| 5234 | Network Fundamentals |  |
| 4062 | Photography |  |
| 4814 | Principles of Engineering PLTW |  |
| 5644 | Principles of Engineering non PLTW |  |
| 5914 | Principles of Marketing |  |
| 5918 | Strategic Marketing |  |
| 5601 | Supply Chain Management and Logistics |  |
|  | 5530 | Three D Computer Animation and Visualization |
| 5211 | Veterinary Careers I |  |
| 5212 | Veterinary Careers II |  |
| Public Administration |  |  |
| 5822 | Criminal Justice I |  |
| 5824 | Criminal Justice II Advanced |  |
| 5820 | Fire and Rescue I |  |
| 5826 | Fire and Rescue II |  |
|  |  |  |
| Transportation | 5430 | Consumer Service Careers I \& II |
| 5962 | Merchandising |  |
| 5520 | Aviation Maintenance |  |
|  | 4528 | Aviation Operations |
|  | Introduction to Transportation |  |
|  |  |  |

Table B-2: Credit Classifications

| Category | CIP Code | Course Title |
| :---: | :---: | :---: |
| Agriculture |  |  |
|  | 01.0000 | Agriculture, General |
|  | 03.0301 | Fishing and Fisheries Sciences and Management |
|  | 03.0101 | Natural Resources/Conservation, General |
| Business Services |  |  |
|  | 52.0302 | Accounting Technology/Technician and Bookkeeping |
|  | 52.0401 | Administrative Assistant and Secretarial Science, General |
|  | 52.0407 | Business/Office Automation/Technology/Data Entry |
|  | 52.0402 | Executive Assistant/Executive Secretary |
|  | 52.1001 | Human Resources Management/Personnel |
|  |  | Administration, General |
|  | 52.1201 | Management Information Systems, General |
| Business Skills |  |  |
|  | 52.0201 | Business Administration and Management, General |
|  | 52.9999 | Business, Management, Marketing, and Related - Support Services, Other |
|  | 52.0101 | Business/Commerce, General |
|  | 52.0701 | Entrepreneurship/Entrepreneurial Studies |
|  | 52.0203 | Logistics, Materials, and Supply Chain Management |
|  | 52.1201 | Management Information Systems, General |
|  | 52.0205 | Operations Management and Supervision |
|  | 52.0213 | Organizational Leadership |
| Construction |  |  |
|  | 46.0499 | Building/Construction Finishing, Management, - and Inspection, Other |
|  | 46.0412 | Building/Construction Site Management/Manager |
|  | 46.0201 | Carpentry/Carpenter |
|  | 15.1001 | Construction Engineering Technology/Technician |
|  | 46.0000 | Construction Trades, General |
|  | 46.9999 | Construction Trades, Other |
|  | 49.0202 | Construction/Heavy Equipment/Earthmoving Equipment Operation |
|  | 46.0301 | Electrical and Power Transmission Installation/Installer, General |
|  | 46.0399 | Electrical and Power Transmission Installers, Other |
|  | 46.0302 | Electrician |
|  | 47.0201 | Heating, Air Conditioning, Ventilation and Refrigeration - Maintenance Technology/Technician |
|  | 46.0414 | Insulator |
|  | 46.0101 | Mason/Masonry |
|  | 47.0000 | Mechanics and Repairers, General |
|  | 46.0502 | Pipefitting/Pipefitter and Sprinkler Fitter |

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Table B-2 - continued from previous page

| Category | CIP Code | Course Title |
| :---: | :---: | :---: |
|  | 46.0503 | Plumbing Technology/Plumber |
| Education |  |  |
|  | 13.0201 | Bilingual and Multilingual Education |
|  | 19.0706 | Child Development |
|  | 13.1210 | Early Childhood Education and Teaching |
|  | 13.0101 | Education, General |
|  | 13.1202 | Elementary Education and Teaching |
|  | 13.1305 | English/Language Arts Teacher Education |
|  | 19.0701 | Human Development and Family Studies, General |
|  | 13.1311 | Mathematics Teacher Education |
|  | 13.1205 | Secondary Education and Teaching |
|  | 13.1099 | Special Education and Teaching, Other |
| Fine Arts |  |  |
|  | 50.0701 | Art/Art Studies, General |
|  | 50.0501 | Drama and Dramatics/Theatre Arts, General |
|  | 50.0799 | Fine Arts and Art Studies, Other |
|  | 50.1002 | Fine and Studio Arts Management |
|  | 50.0702 | Fine/Studio Arts, General |
|  | 50.0913 | Music Technology |
|  | 50.0901 | Music, General |
|  | 31.0504 | Sport and Fitness Administration/Management |
| Healthcare |  |  |
|  | 51.0999 | Allied Health Diagnostic, Intervention, and Treatment - Professions, Other |
|  | 51.0899 | Allied Health and Medical Assisting Services, Other |
|  | 51.0204 | Audiology/Audiologist and Speech-Language Pathology/Pathologist |
|  | 26.0101 | Biology/Biological Sciences, General |
|  | 51.1005 | Clinical Laboratory Science/Medical Technology/Technologist |
|  | 51.1004 | Clinical/Medical Laboratory Technician |
|  | 30.25 | Cognitive Science |
|  | 51.1504 | Community Health Services/Liaison/Counseling |
|  | 11.0101 | Computer and Information Sciences, General |
|  | 51.0601 | Dental Assisting/Assistant |
|  | 51.0602 | Dental Hygiene/Hygienist |
|  | 51.0699 | Dental Services and Allied Professions, Other |
|  | 51.0910 | Diagnostic Medical Sonography/Sonographer and - Ultrasound Technician |
|  | 09.0702 | Digital Communication and Media/Multimedia |
|  | 51.0810 | Emergency Care Attendant (EMT Ambulance) |
|  | 51.0904 | Emergency Medical Technology/Technician (EMT Paramedic) |
|  | 42.2704 | Experimental Psychology |

Table B-2 - continued from previous page

| Category | CIP Code | Course Title |
| :---: | :---: | :--- |
| 51.3805 | Family Practice Nurse/Nursing |  |
| 51.2601 | Health Aide |  |
| 51.0706 | Health Information/Medical Records Administration/ |  |
|  | 51.0707 | - Administrator |
| 51.2211 | Health Information/Medical Records Technology/Technician |  |
| 51.0701 | Health/Hervices Administration Care Administration/Management |  |
| 30.2701 | Human Biology |  |
| 50.0408 | Interior Design |  |
| 51.3901 | Licensed Practical/Vocational Nurse Training |  |
| 51.1505 | Marriage and Family Therapy/Counseling |  |
| 51.3501 | Massage Therapy/Therapeutic Massage |  |
| 51.0713 | Medical Insurance Coding Specialist/Coder |  |
| 51.0907 | Medical Radiologic Technology/Science - Radiation Therapist |  |
| 51.0801 | Medical/Clinical Assistant |  |
| 51.0711 | Medical/Health Management and Clinical Assistant/Specialist |  |
| 51.2603 | Medication Aide |  |
| 51.3902 | Nursing Assistant/Aide and Patient Care Assistant/Aide |  |
| 51.2306 | Occupational Therapy/Therapist |  |
| 51.0805 | Pharmacy Technician/Assistant |  |
| 51.1009 | Phlebotomy Technician/Phlebotomist |  |
| 51.1102 | Pre-Medicine/Pre-Medical Studies |  |
| 51.1105 | Pre-Nursing Studies |  |
| 51.1502 | Psychiatric/Mental Health Services Technician |  |
| 42.0101 | Psychology, General |  |
| 51.2201 | Public Health, General |  |
| 51.0911 | Radiologic Technology/Science - Radiographer |  |
| 10.0203 | Recording Arts Technology/Technician |  |
| 51.3899 | Registered Nursing, Nursing Administration, Nursing |  |
|  | - Research and Clinical Nursing, Other |  |
| 51.3801 | Registered Nursing/Registered Nurse |  |
| 42.2799 | Research and Experimental Psychology, Other |  |
| 51.0908 | Respiratory Care Therapy/Therapist |  |
| 44.0701 | Social Work |  |
| 51.1501 | Substance Abuse/Addiction Counseling |  |
| 51.0909 | Surgical Technology/Technologist |  |
| 09.0908 | Technical and Scientific Communication |  |
| Hotels \& Restaurants |  |  |
| 12.0503 | Culinary Arts/Chef Training |  |
| 12.0509 | Culinary Science/Culinology |  |
| 52.0901 | Hospitality Administration/Management, General |  |
|  |  |  |

Table B-2 - continued from previous page

| Category | CIP Code | Course Title |
| :---: | :---: | :---: |
|  | 52.0999 | Hospitality Administration/Management, Other |
|  | 12.0501 | Baking and Pastry Arts/Baker/Pastry Chef |
|  | 12.0503 | Culinary Arts/Chef Training |
|  | 12.0509 | Culinary Science/Culinology |
|  | 52.0901 | Hospitality Administration/Management, General |
|  | 52.0999 | Hospitality Administration/Management, Other |
|  | 12.0504 | Restaurant, Culinary, and Catering Management/Manager |
|  | 52.0903 | Tourism and Travel Services Management |
| Information |  |  |
|  | 09.9999 | Communication, Journalism, and Related Programs, Other |
|  | 09.0702 | Digital Communication and Media/Multimedia |
|  | 09.0401 | Journalism |
|  | 25.0301 | Library and Archives Assisting |
|  | 10.0203 | Recording Arts Technology/Technician |
|  | 09.0101 | Speech Communication and Rhetoric |
|  | 11.1004 | Web/Multimedia Management and Webmaster |
| Liberal Arts |  |  |
|  | 24.0101 | Liberal Arts and Sciences/Liberal Studies |
|  | 24.0199 | Liberal Arts and Sciences, General Studies - and Humanities, Other |
|  | 24.0101 | Liberal Arts and Sciences/Liberal Studies |
| Liberal Arts - Humanities |  |  |
|  | 16.0300 | East Asian Languages, Literatures, and Linguistics, General |
|  | 23.0101 | English Language and Literature, General |
|  | 05.0209 | Folklore Studies |
|  | 16.9999 | Foreign Languages, Literatures, and Linguistics, Other |
|  | 54.0101 | History, General |
|  | 16.0902 | Italian Language and Literature |
|  | 16.0302 | Japanese Language and Literature |
|  | 24.0199 | Liberal Arts and Sciences, General Studies - and Humanities, Other |
|  | 23.0101 | English Language and Literature, General |
|  | 24.0102 | General Studies |
|  | 54.0101 | History, General |
|  | 54.0199 | History, Other |
|  | 24.0103 | Humanities/Humanistic Studies |
| Liberal Arts - Social Science |  |  |
|  | 45.02 | Anthropology |
|  | 45.0601 | Economics, General |
|  | 45.1001 | Political Science and Government, General |
|  | 45.11 | Sociology |

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Table B-2 - continued from previous page

| Category | CIP Code | Course Title |
| :---: | :---: | :---: |
|  | 45.0401 | Criminology |
|  | 45.0601 | Economics, General |
|  | 45.0901 | International Relations and Affairs |
|  | 45.1001 | Political Science and Government, General |
|  | 44.0701 | Social Work |
| Manufacturing |  |  |
|  | 19.0901 | Apparel and Textiles, General |
|  | 15.0699 | Industrial Production Technologies/Technicians, Other |
|  | 15.0612 | Industrial Technology/Technician |
|  | 48.0509 | Ironworking/Ironworker |
|  | 15.0613 | Manufacturing Engineering Technology/Technician |
|  | 48.0506 | Sheet Metal Technology/Sheetworking |
|  | 48.0508 | Welding Technology/Welder |
| Other Services |  |  |
|  | 47.0608 | Aircraft Powerplant Technology/Technician |
|  | 47.0607 | Airframe Mechanics and Aircraft Maintenance |
|  | 47.0604 | Automobile/Automotive Mechanics Technology/Technician |
|  | 47.0605 | Diesel Mechanics Technology/Technician |
|  | 12.0301 | Funeral Service and Mortuary Science, General |
|  | 48.0503 | Machine Shop Technology/Assistant |
|  | 47.0613 | Medium/Heavy Vehicle and Truck Technology/Technician |
| Professional Science $\varepsilon^{8}$ Tech Services |  |  |
|  | 52.0301 | Accounting |
|  | 52.0302 | Accounting Technology/Technician and Bookkeeping |
|  | 14.0501 | Bioengineering and Biomedical Engineering |
|  | 26.9999 | Biological and Biomedical Sciences, Other |
|  | 30.0101 | Biological and Physical Sciences |
|  | 26.0101 | Biology/Biological Sciences, General |
|  | 26.1201 | Biotechnology |
|  | 40.0501 | Chemistry, General |
|  | 14.0801 | Civil Engineering, General |
|  | 50.0402 | Commercial and Advertising Art |
|  | 14.0901 | Computer Engineering, General |
|  | 11.0203 | Computer Programming, Vendor/Product Certification |
|  | 11.0701 | Computer Science |
|  | 11.1006 | Computer Support Specialist |
|  | 11.0901 | Computer Systems Networking and Telecommunications |
|  | 11.0101 | Computer and Information Sciences, General |
|  | 11.1099 | Computer/Information Technology Services |
|  |  | Administration and Management, Other |

Table B-2 - continued from previous page

| Category | CIP Code | Course Title |
| :--- | :---: | :--- |
|  | 11.0802 | Data Modeling/Warehousing and Database Administration |
| 50.0401 | Design and Visual Communications, General |  |
| 15.1301 | Drafting and Design Technology/Technician, General |  |
| 14.1001 | Electrical and Electronics Engineering |  |
| 15.0503 | Energy Management and Systems Technology/Technician |  |
| 14.0101 | Engineering, General |  |
| 15.0699 | Industrial Production Technologies/Technicians, Other |  |
| 11.0104 | Informatics |  |
| 11.0401 | Information Science/Studies |  |
| 11.0103 | Information Technology |  |
| 22.0302 | Legal Assistant/Paralegal |  |
| 52.1401 | Marketing/Marketing Management, General |  |
| 15.1306 | Mechanical Drafting and Mechanical Drafting CAD/CADD |  |
| 14.1901 | Mechanical Engineering |  |
| 30.1801 | Natural Sciences |  |
| 11.1001 | Network and System Administration/Administrator |  |
| 15.0701 | Occupational Safety and Health Technology/Technician |  |
| 14.0102 | Pre-Engineering |  |
| 22.0202 | Programs for Foreign Lawyers |  |
| 16.1603 | Sign Language Interpretation and Translation |  |
| 11.0801 | Web Page, Digital/Multimedia and Information Resources Design |  |
| 11.1004 | Web/Multimedia Management and Webmaster |  |
| Public Administration |  |  |
| 43.0103 | Criminal Justice/Law Enforcement Administration |  |
| 43.0107 | Criminal Justice/Police Science |  |
| 43.0104 | Criminal Justice/Safety Studies |  |
| 45.0401 | Criminology |  |
| 43.9999 | Homeland Security, Law Enforcement, |  |
|  | - and Related Protective Services, Other |  |
| 44.0401 | Public Administration |  |
|  |  | Truck and Bus Driver/Commercial |
| Transportation | - Vehicle Operator and Instructor |  |
| 49.0205 |  |  |


[^0]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development and TEC enrollment records. The sample includes all TEC applicants who applied between January 2013 through June 2015 with any pre-application MPH record and were 23 years or younger at application. Applicants are divided into groups based on enrollment and graduation. The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. Panel A plots average quarterly UI-covered earnings (2014Q1 USD) of TEC graduates (navy circles), TEC students who exited before graduation (gold diamonds), and applicants who did not enroll (teal triangles). Panel B plots the regression coefficients from weighted event study specifications that control for individual, calendar quarter, and relative quarter-age ventile fixed effects. The reference quarter is the quarter before application. Vertical bars represent 95 percent confidence intervals, where standard errors are clustered at the individual level.

[^1]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development and TEC enrollment records. The sample includes all TEC applicants who applied between January 2013 through June 2015 with any pre-application MPH record and were 24 years or older at application. Applicants are divided into groups based on enrollment and graduation. The horizontal axis indicates quarter relative to initial TEC application date, where quarter 0 represents the quarter in which an individual applied to TEC. Panel A plots average quarterly UI-covered earnings (2014Q1 USD) of TEC graduates (navy circles), TEC students who exited before graduation (gold diamonds), and applicants who did not enroll (teal triangles). Panel B plots the regression coefficients from weighted event study specifications that control for individual, calendar quarter, and relative quarter-age ventile fixed effects. The reference quarter is the quarter before application. Vertical bars represent 95 percent confidence intervals, where standard errors are clustered at the individual level.

[^2]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters - 20 through 19 and are re-weighted using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, **, and ${ }^{* * *}$.

[^3]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample is a cross section of all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. The outcome is the predicted probability of employment in an industry based on types of certificates obtained. All columns are re-weighted using inverse propensity score weights. Standard errors clustered by person are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*},{ }^{* *}$, and ${ }^{* * *}$.

[^4]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters -20 through 19 and are re-weighted using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

[^5]:    Notes: Data come from TEC application records linked to UI earnings data from the Indiana Department of Workforce Development. The sample includes all TEC applicants from January 2013 through June 2015 with any pre-application MPH record. Time is measured in quarters relative to application date. The outcome is an indicator for quarterly employment in the listed industry. All columns include quarters -20 through 19 and are re-weighted using inverse propensity score weights. Standard errors clustered by individual are in parentheses. Statistical significance at the 10,5 , and 1 percent levels are denoted respectively by ${ }^{*}$, ${ }^{* *}$, and ${ }^{* * *}$.

[^6]:    ${ }^{29}$ When winsorizing earnings for the GED and community college samples, we similarly winsorize separately by the relevant comparison groups.

[^7]:    ${ }^{30}$ Technical Business Communication and Technology Lab provide introductory information on communicating in the business place and using a suite of basic business products include Microsoft Office.
    ${ }^{31}$ For individuals in our TEC sample who have earned multiple certificates, we average the industry shares across the various earned certificates. Individuals who have not earned a certificate are assigned the industry distribution from the subset of GED-takers who also had not eared any certificates.

