Student Pathways and Labour Market Outcomes: Evidence from Tax-Linked Administrative Data

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EPRI Education Policy Research Initiative
Initiative de recherche sur les politiques de l'éducation

START
WITH
WHY
SIMON SINEK

The Question and Approach

The Project

- Pathways through PSE
  - What are they?
  - Associated labour market outcomes?
- Challenging problem
  - Almost infinite pathways
  - Need to identify and classify
  - Then link to labour market outcomes
- Need to develop tractable analytical framework + find data

Our Approach

- Build off previous work on graduates' earnings
  - Linked PSE admin. data to tax records
  - 14 colleges and universities across the country
- Here – use APPTYPE variable some institutions provided
  - Direct from high school
  - Transfer
  - Mature student
  - Other/unknown
- Link these to earnings

Immediate Challenges

- APPTYPE variable questionable
  - Direct entry (DE) looks generally good (at least after a while)
  - Others questionable
  - And different across institutions
- Important lesson for using admin data generally
- Work around it – in this case (but see more below)
  1. DE vs. all others
  2. Also use age at entry (<= 23, <=24)

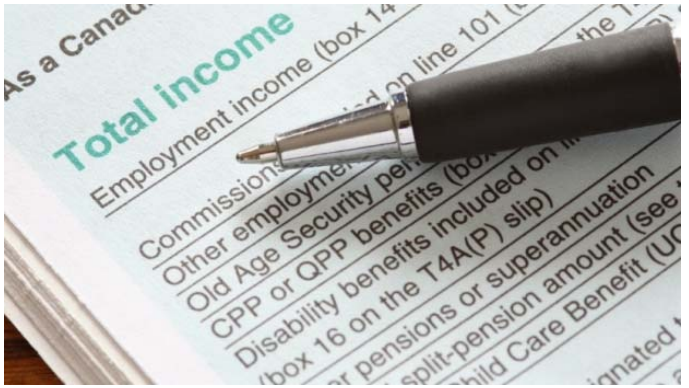
Analysis

1. Post-graduation earnings – track over time by APPTYPE
   - Simple descriptive analysis
   - Regression analysis

2. Pre/Post-Graduation Earnings
   - Getting at “value added”

Data

Graduates 2005-2012



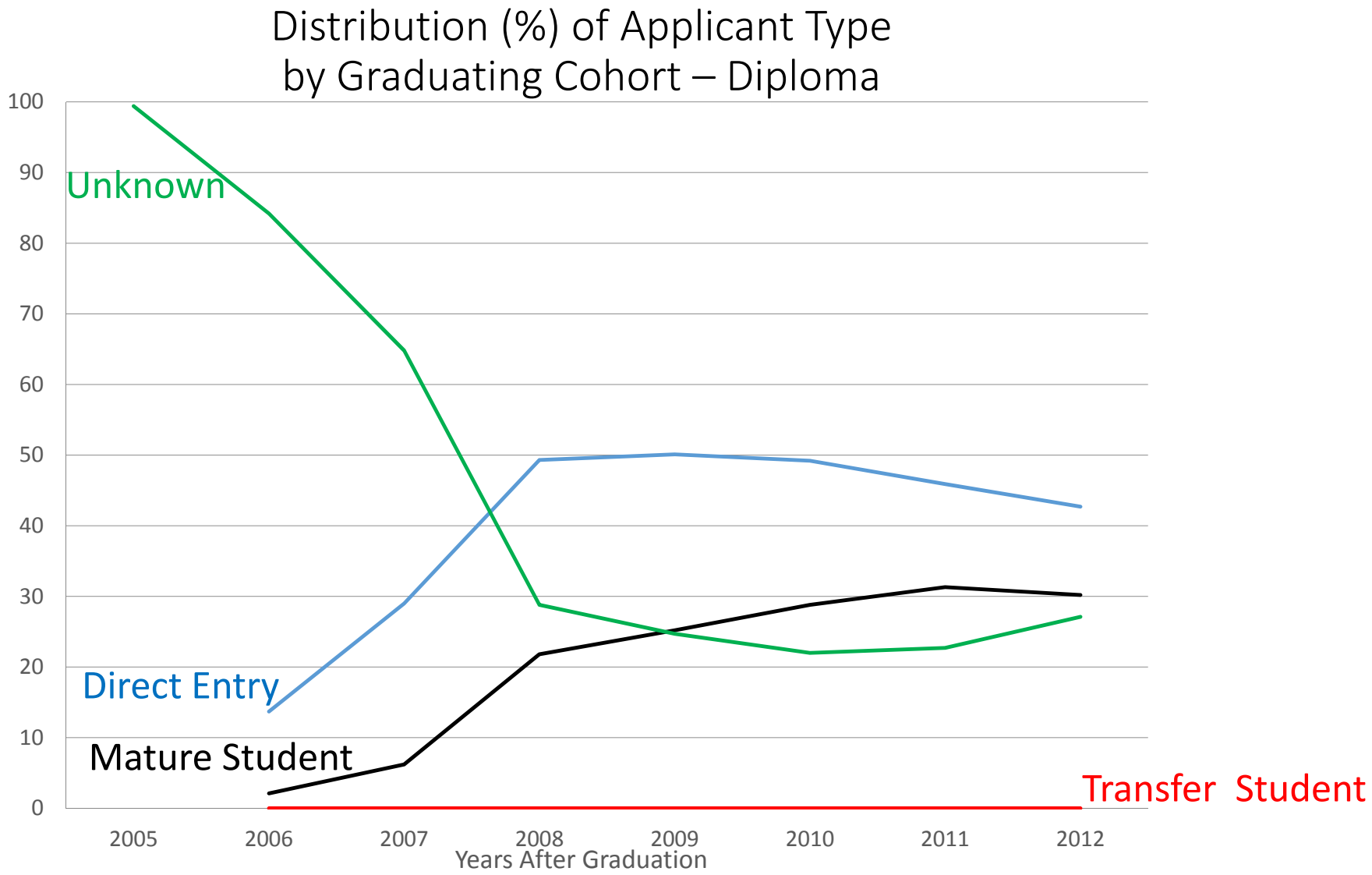
Linked to tax data

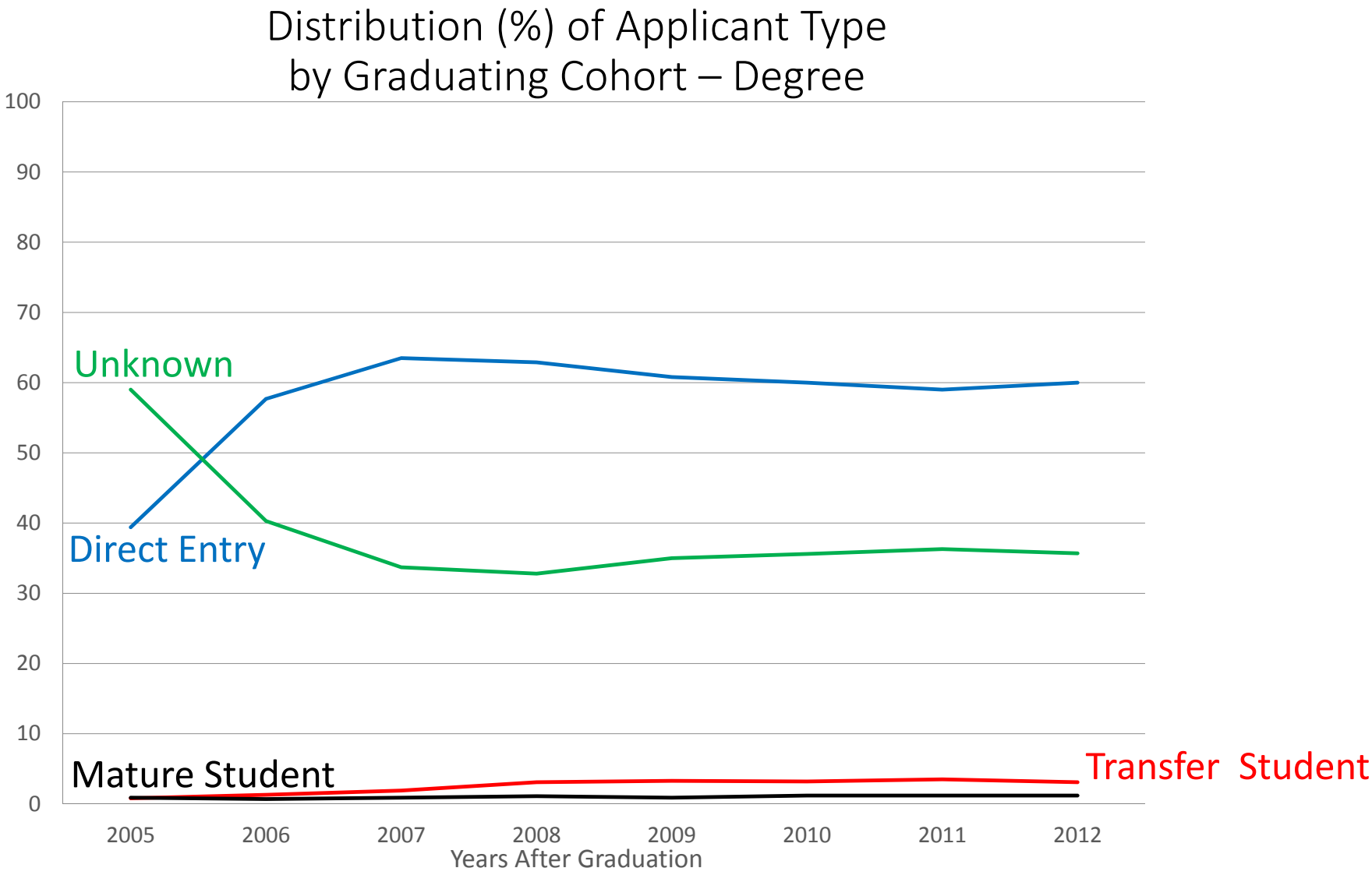
97% linkage rate

?

The Analysis

APPTYPE


Distribution (%) of Applicant Type
by Graduating Cohort – Diploma
100
90
80
70
60
50
40
30
20
10
0
Unknown
Direct Entry
Mature Student
Transfer Student
2005
2006
2007
2008
2009
2010
2011
2012
Years After Graduation


Distribution (%) of Applicant Type
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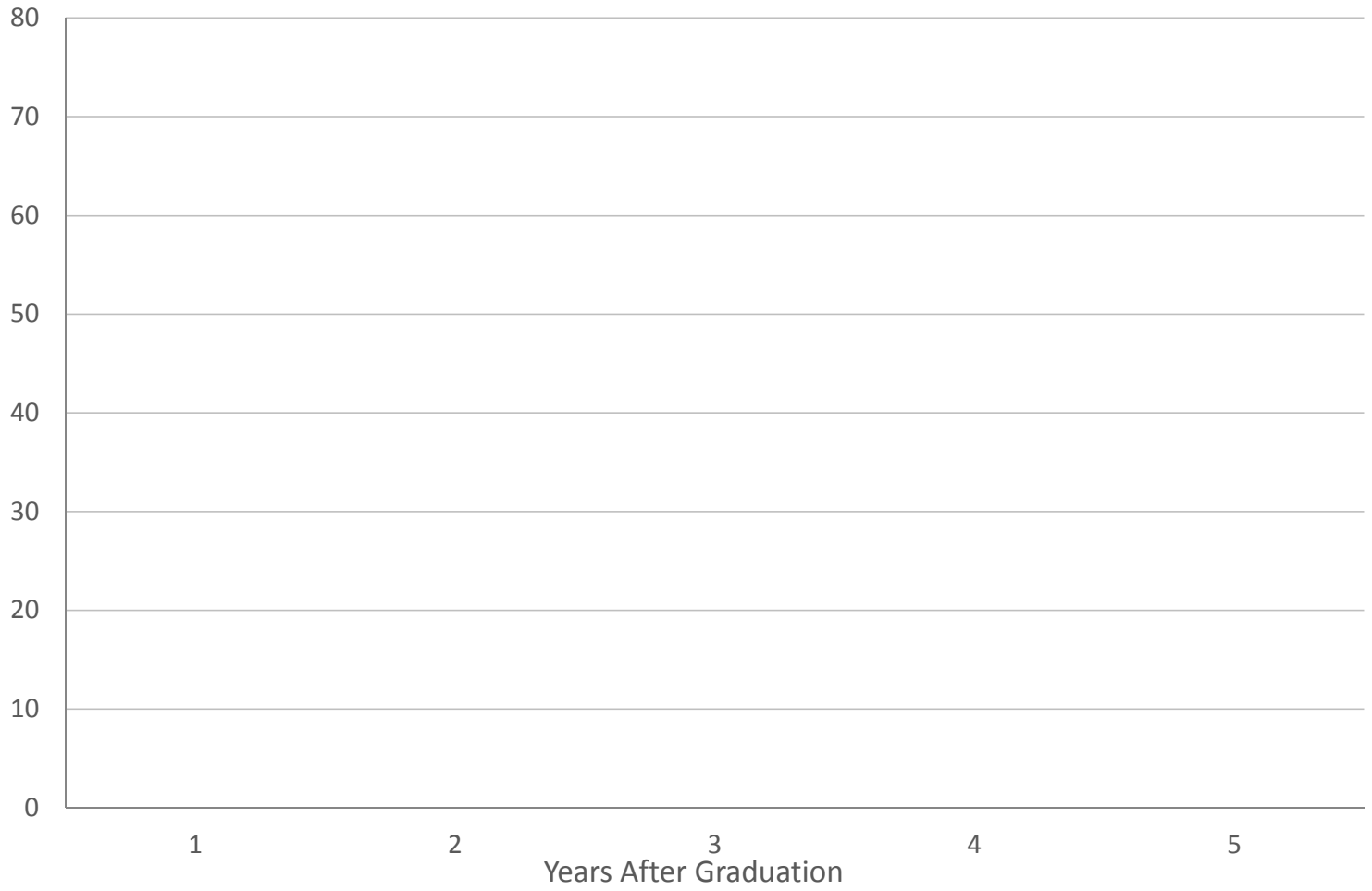
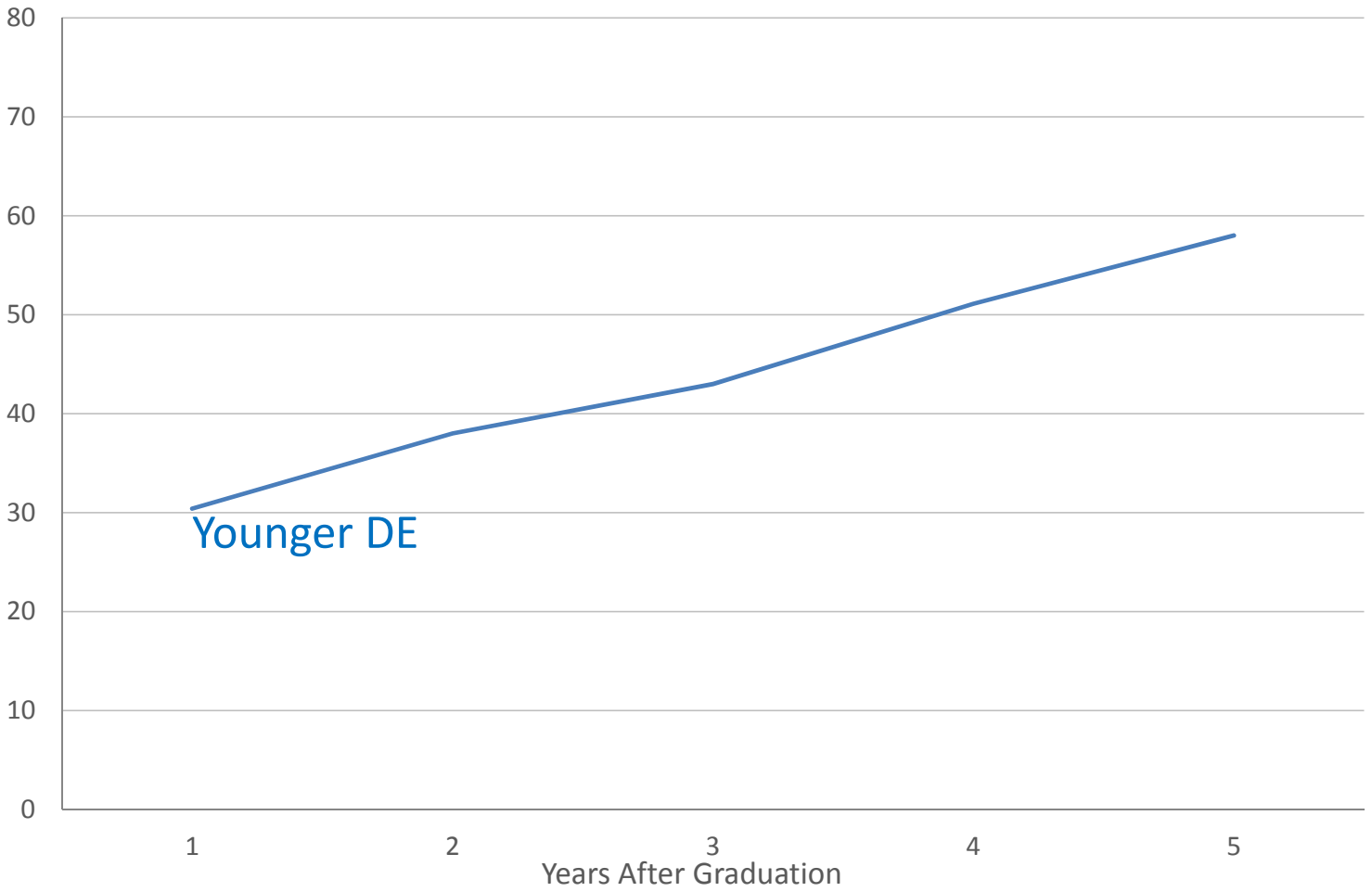
Direct Entry
Mature Student
Transfer Student
2005
2006
2007
2008
2009
2010
2011
2012
Years After Graduation

Mean Earnings of Diploma Graduates ($2014)

2008 Cohort



2008 Cohort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Younger DE
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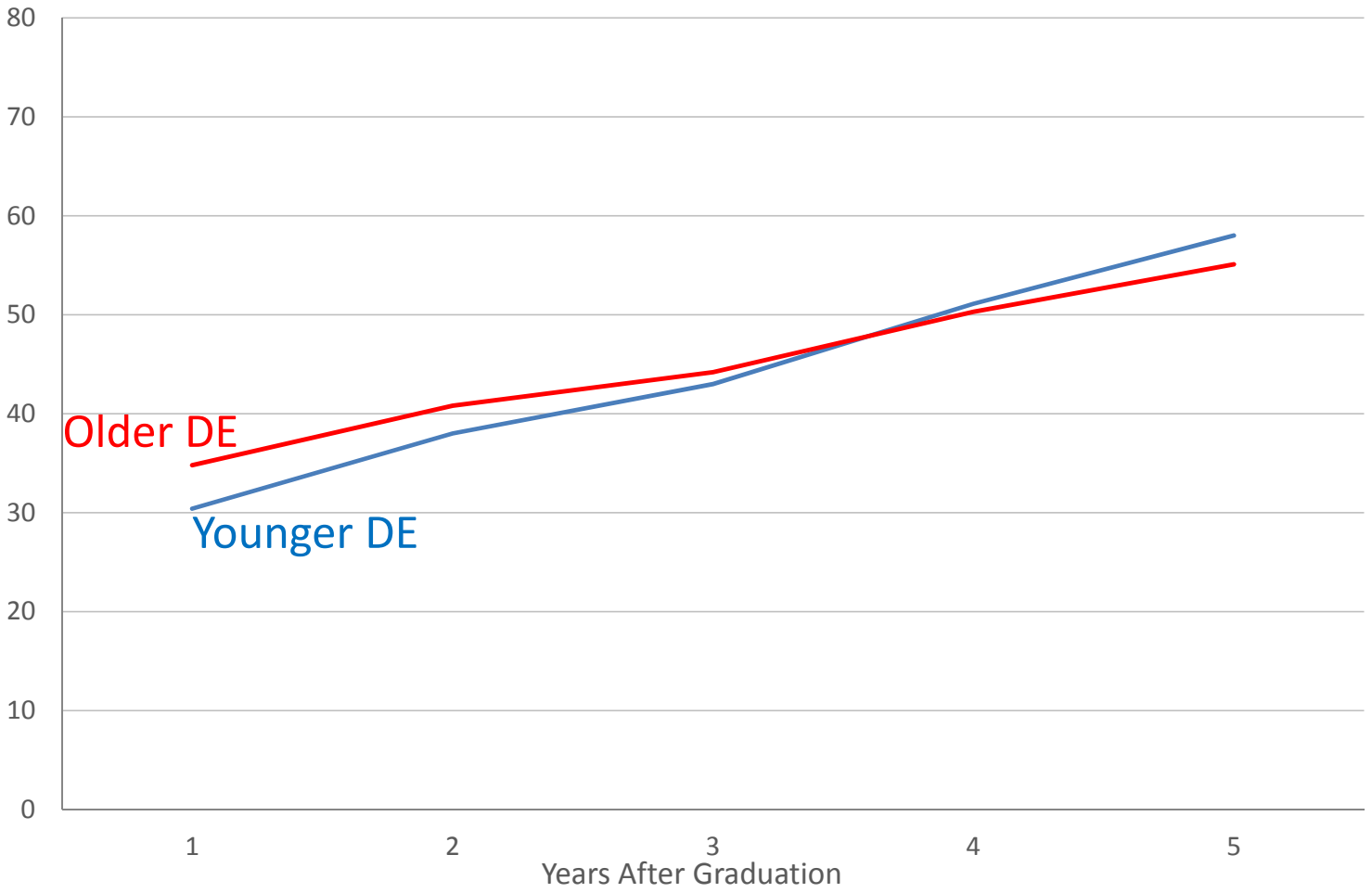
Years After Graduation

2008 Cohort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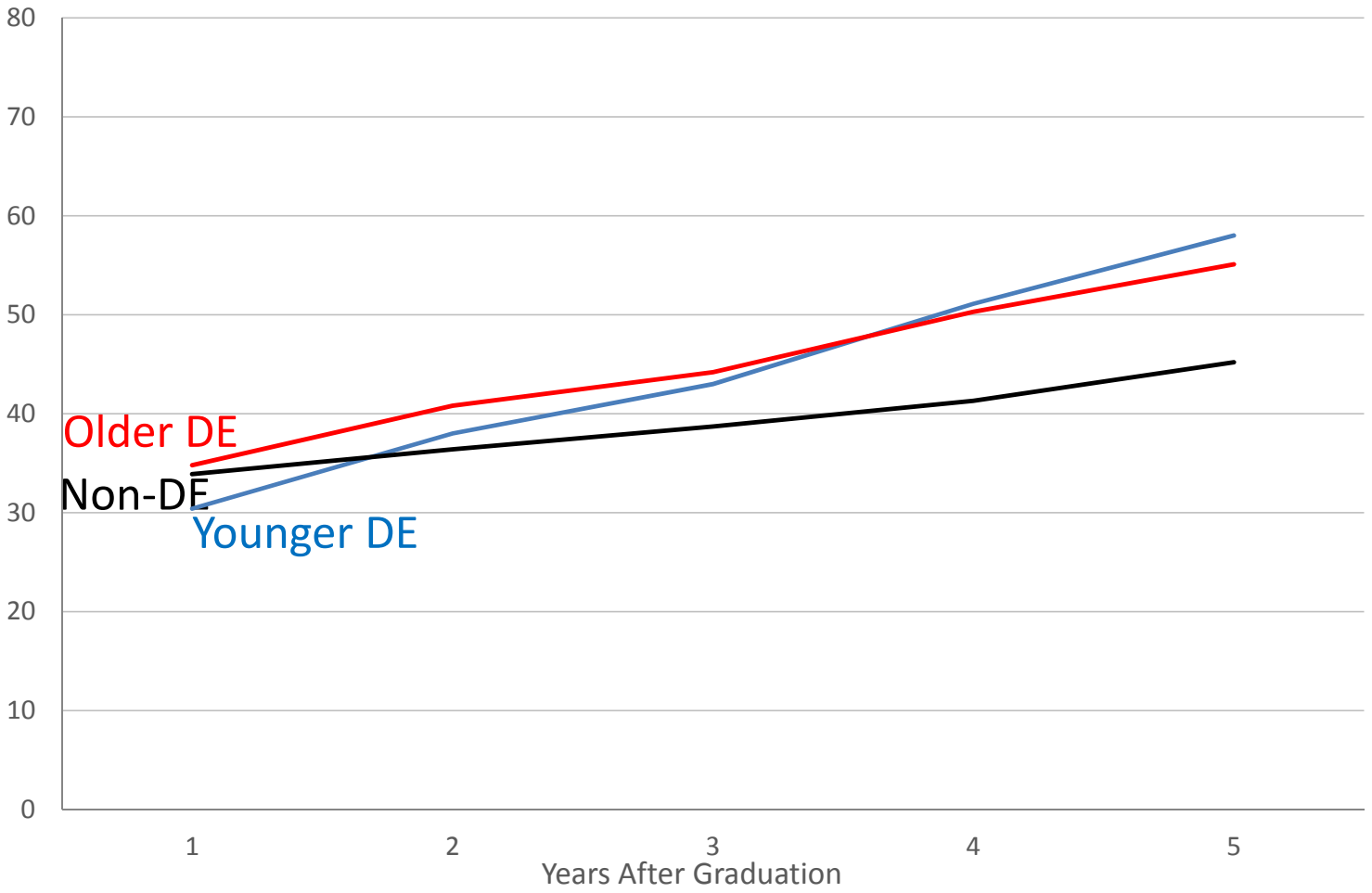
Years After Graduation

2008 Cohort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Older DE
Non-DE
Younger DE
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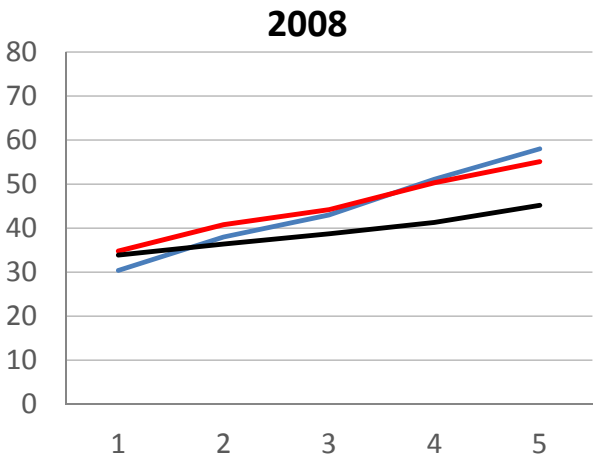
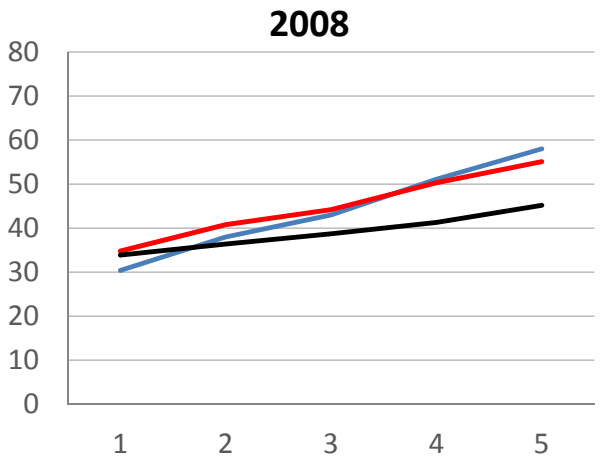
Years After Graduation

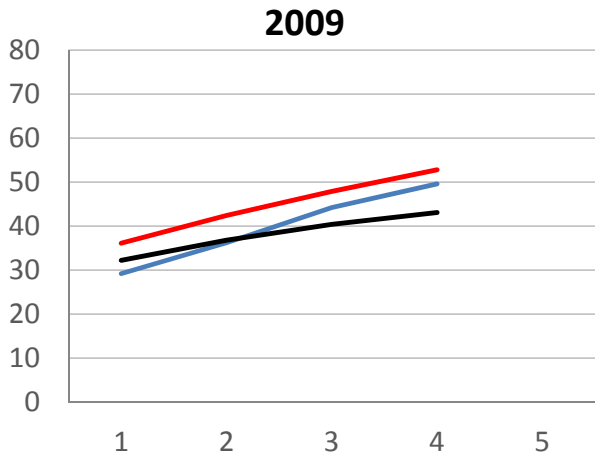
All Cohorts



Older DE
Younger DE
Non-DE

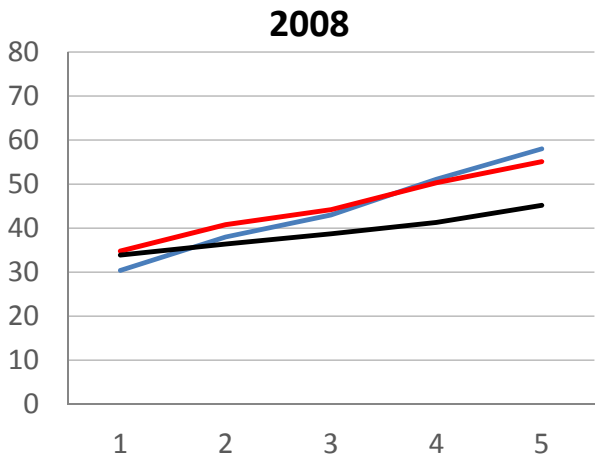
All Cohorts

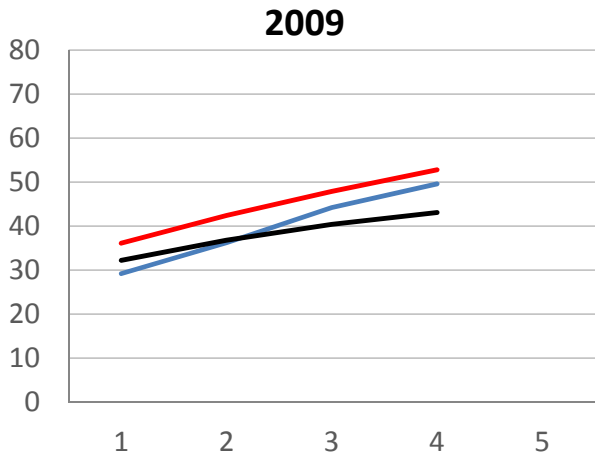


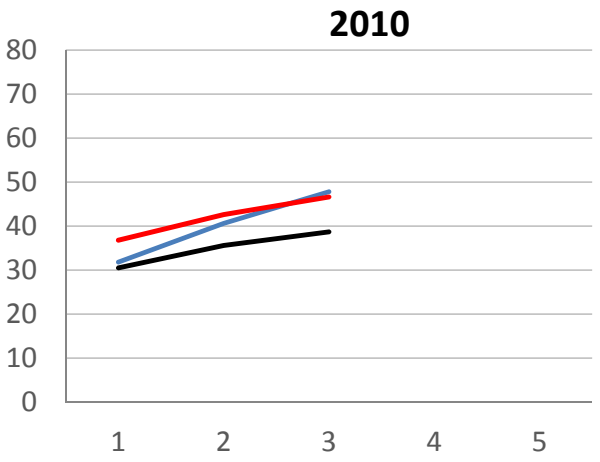


Older DE
Younger DE
Non-DE

All Cohorts

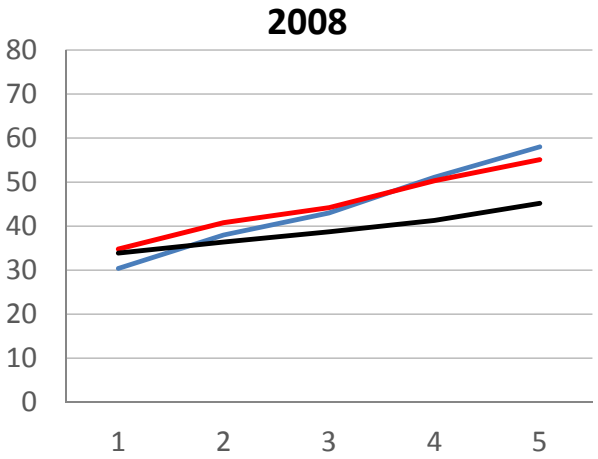


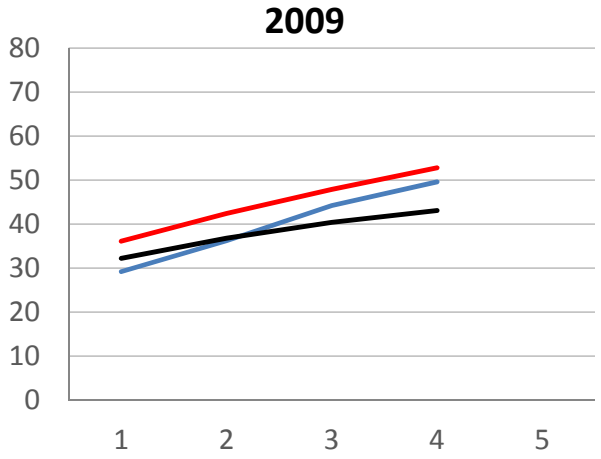


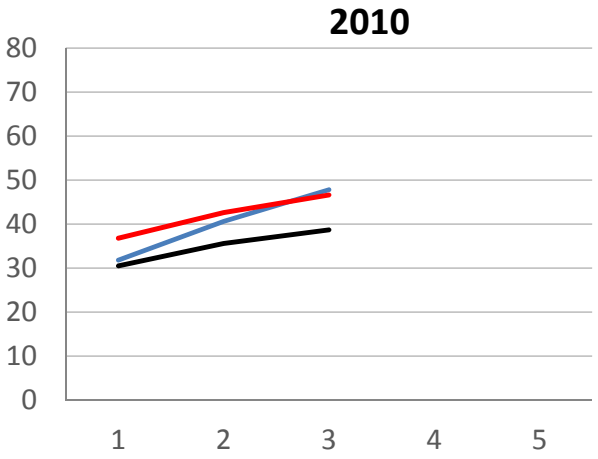


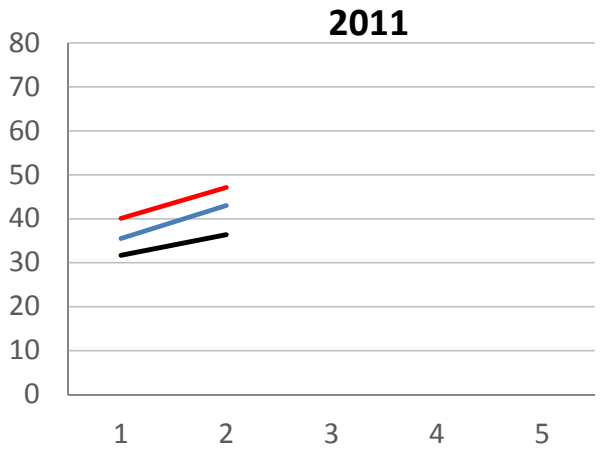
Older DE
Younger DE
Non-DE

All Cohorts









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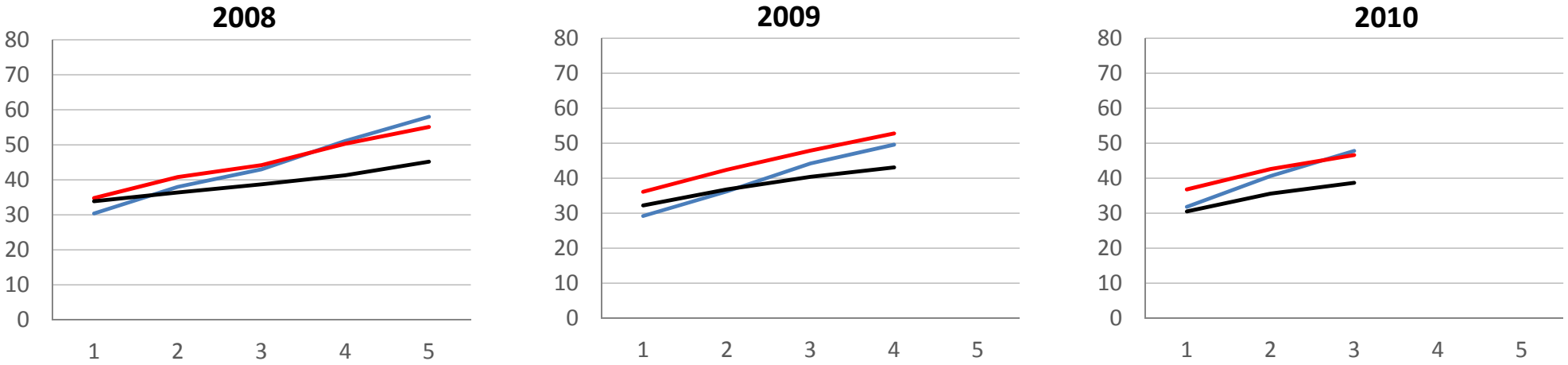
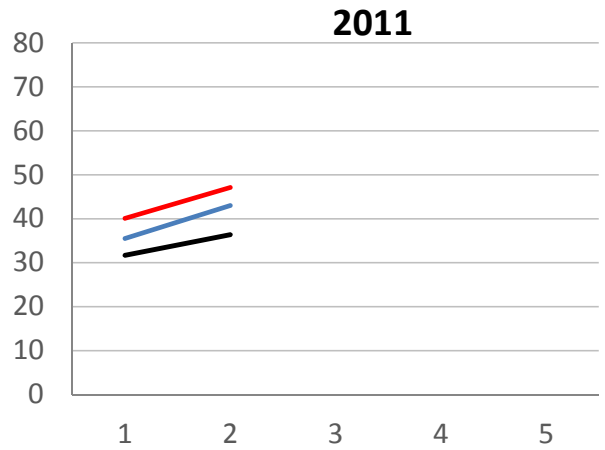
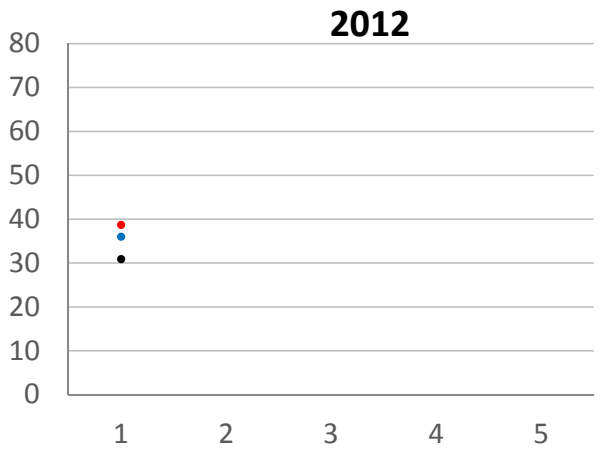
Non-DE

All Cohorts



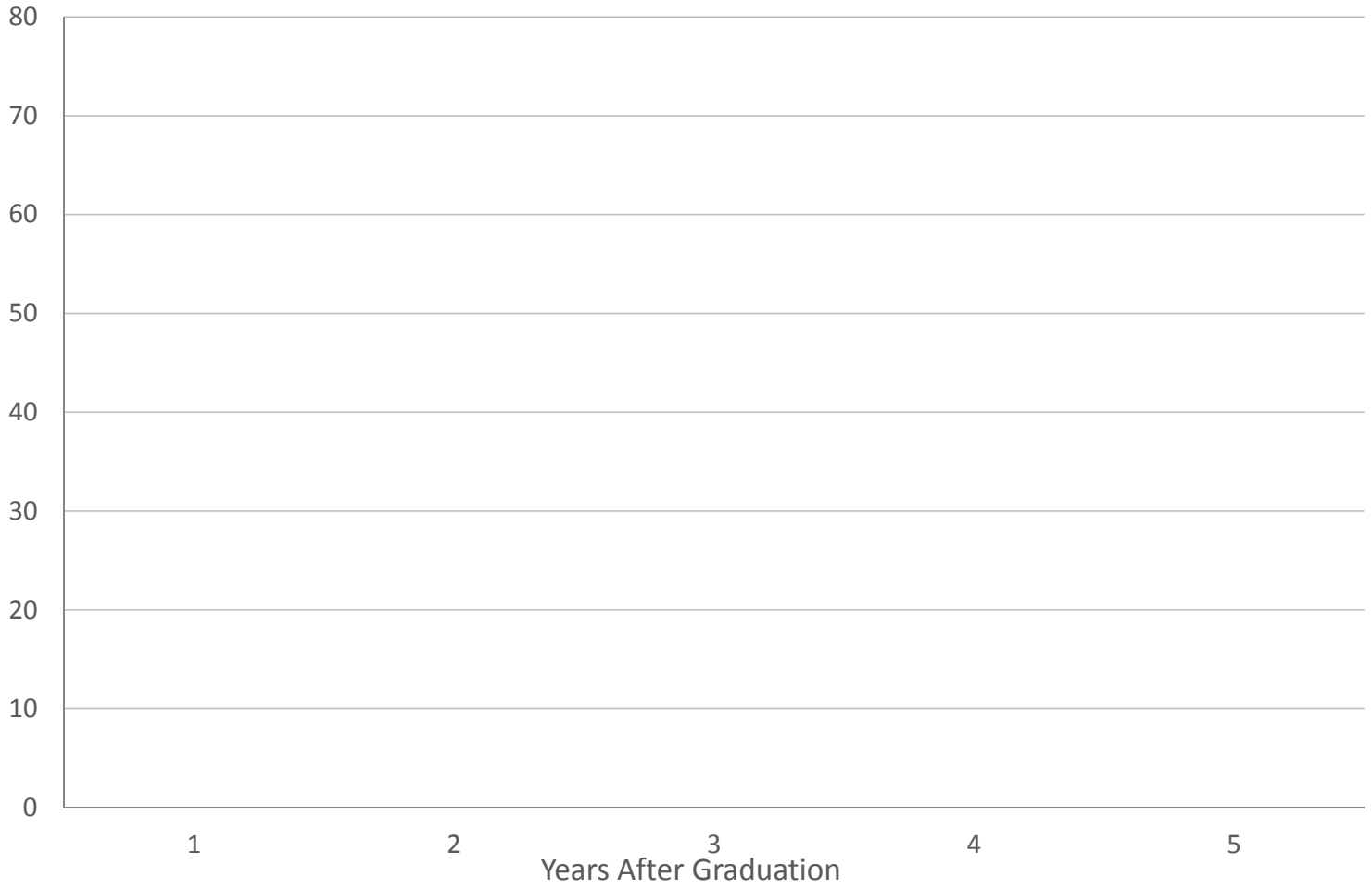




Older DE
Younger DE
Non-DE

Degree Graduates ($2014)

2008 Cohort



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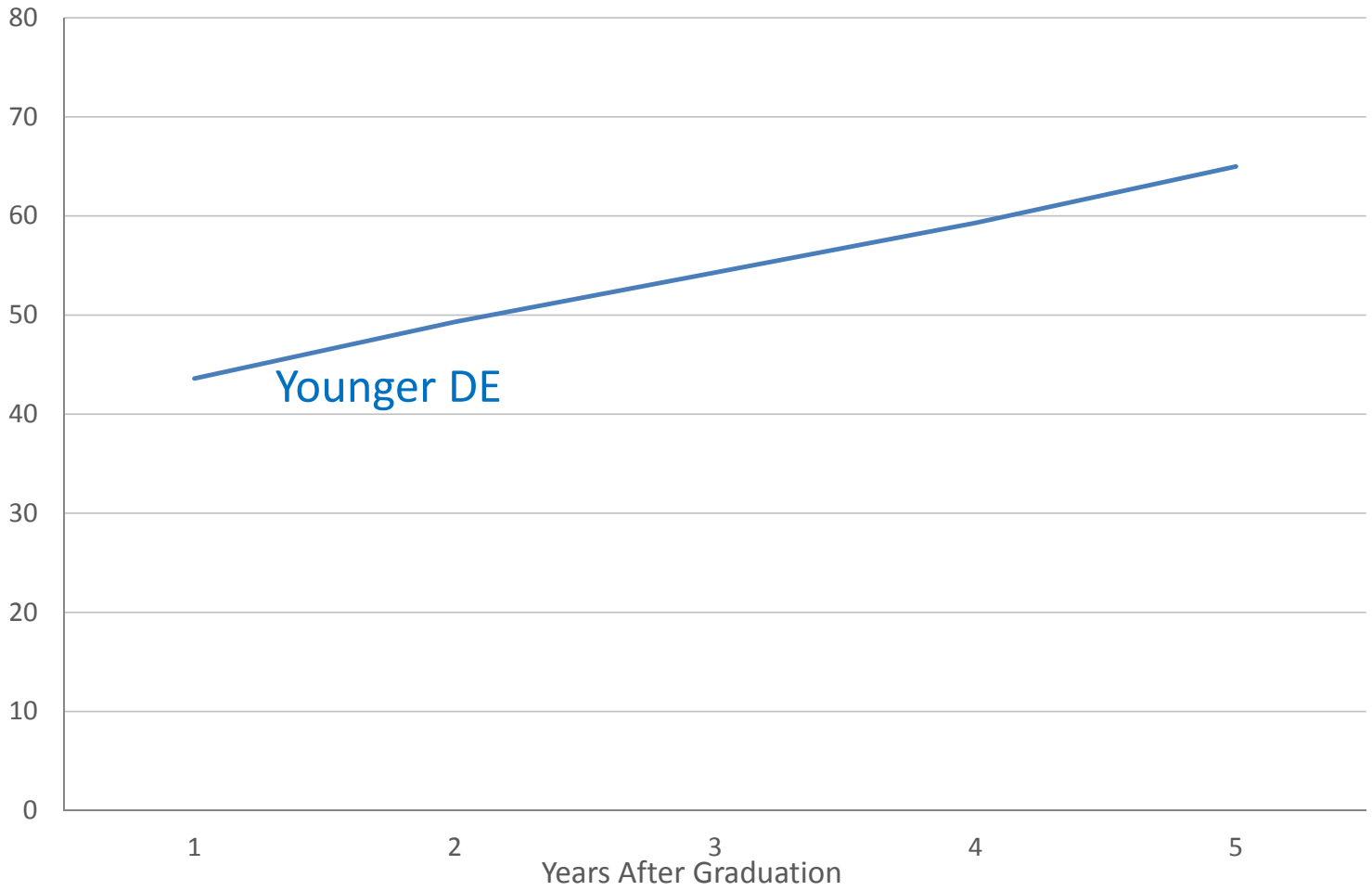
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Years After Graduation

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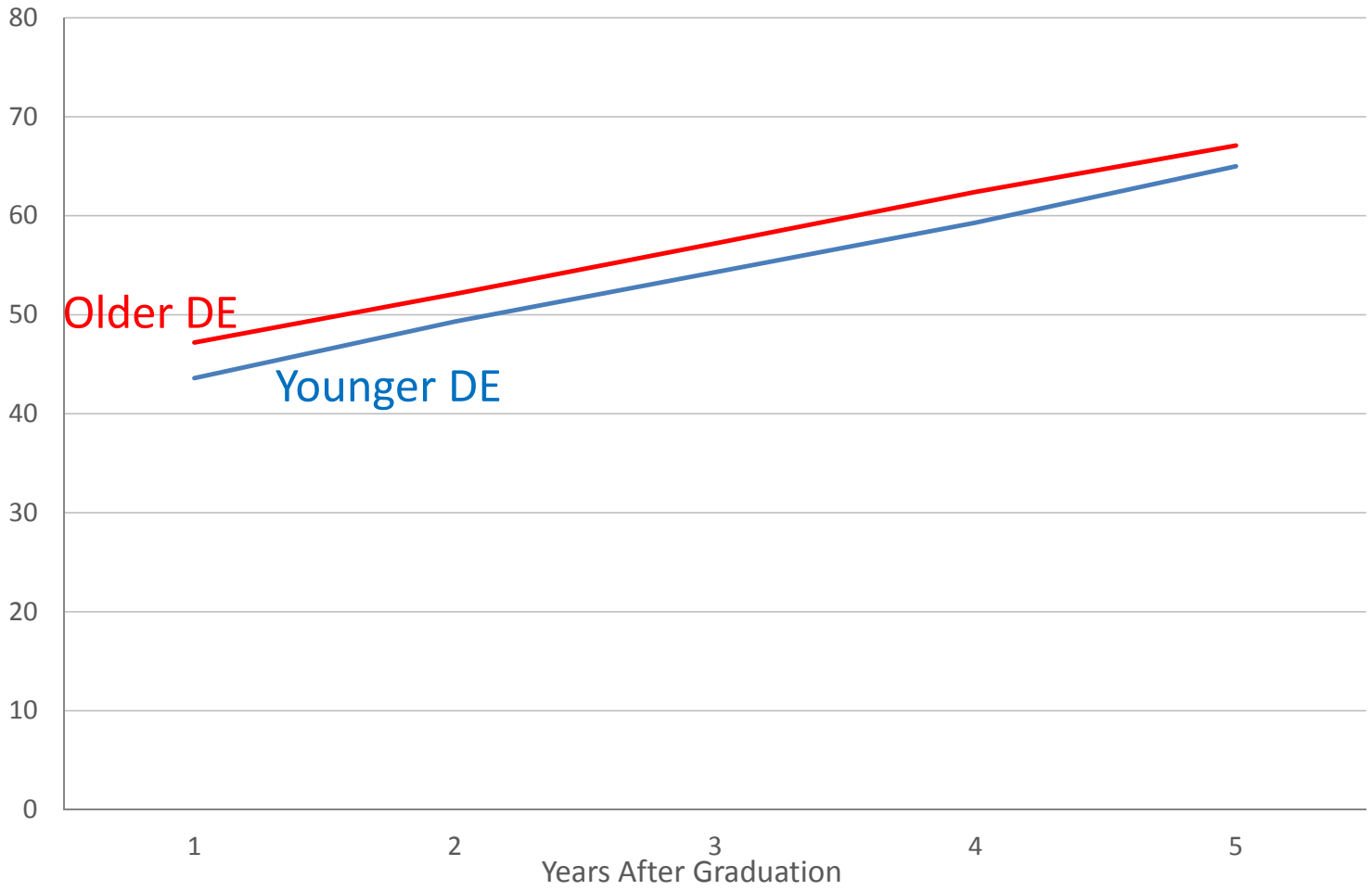
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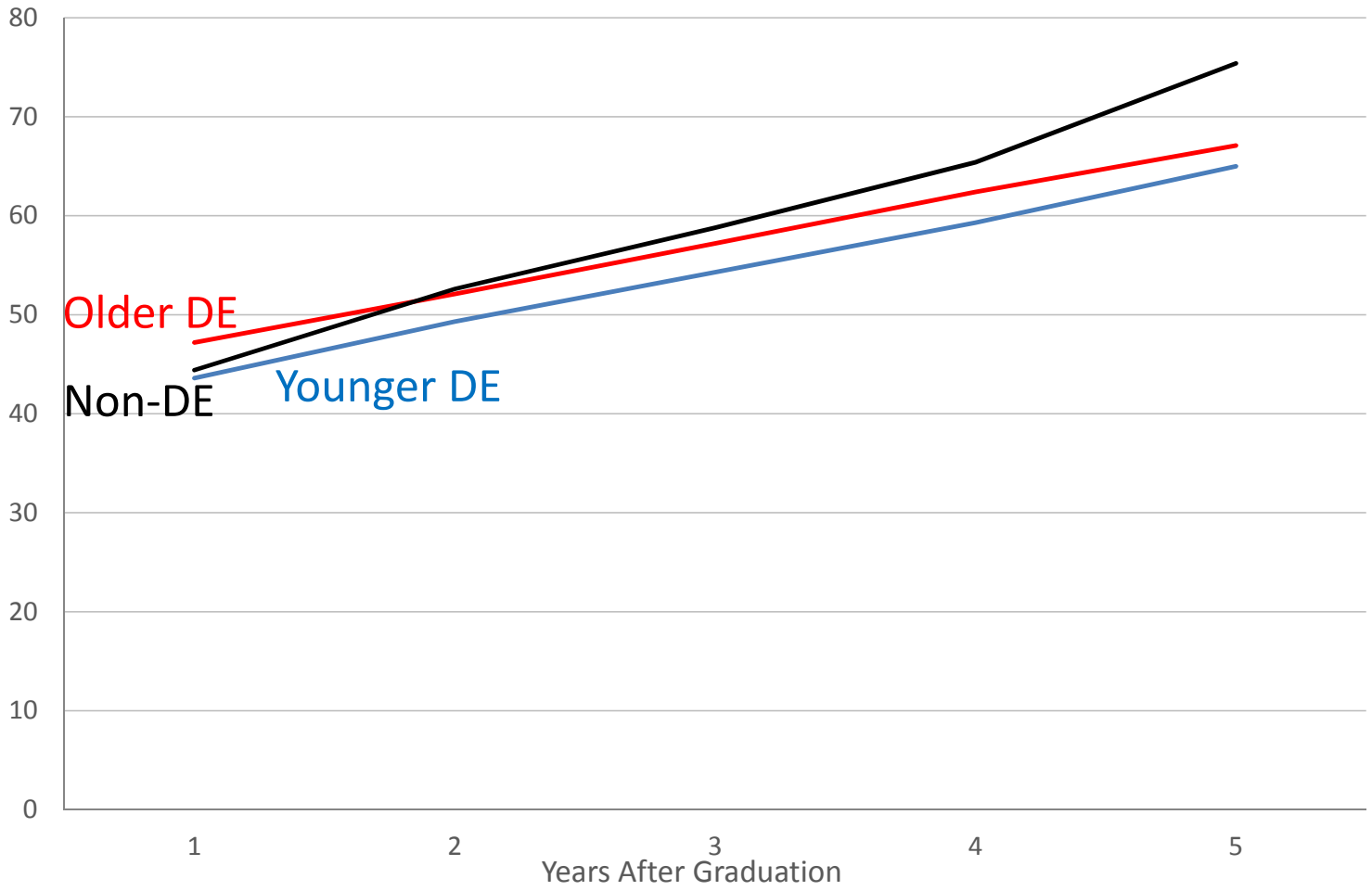
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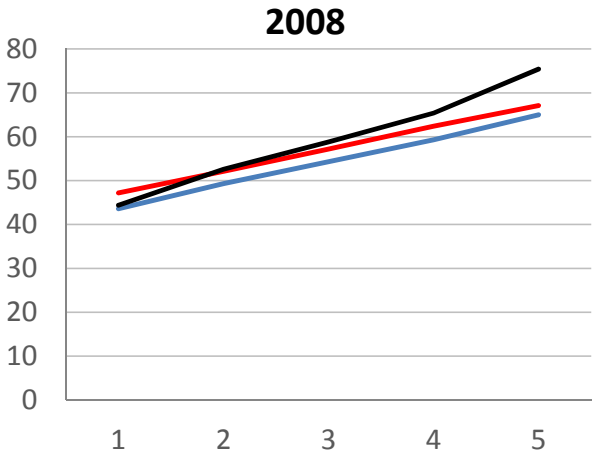

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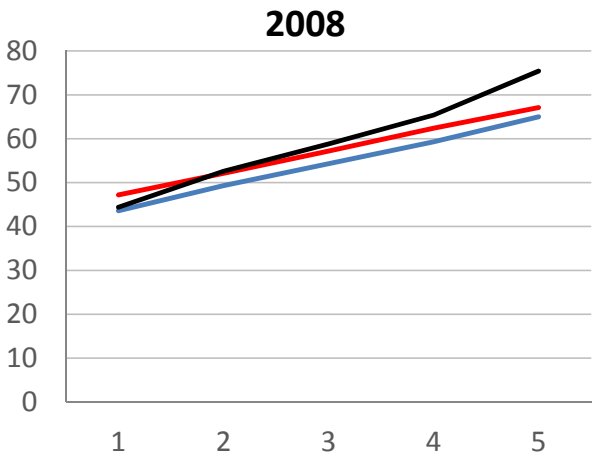
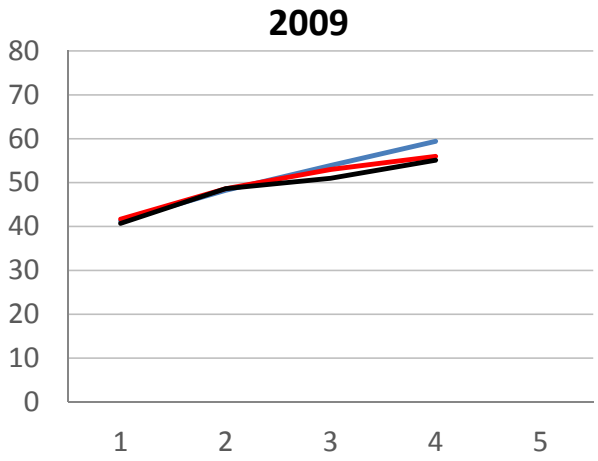
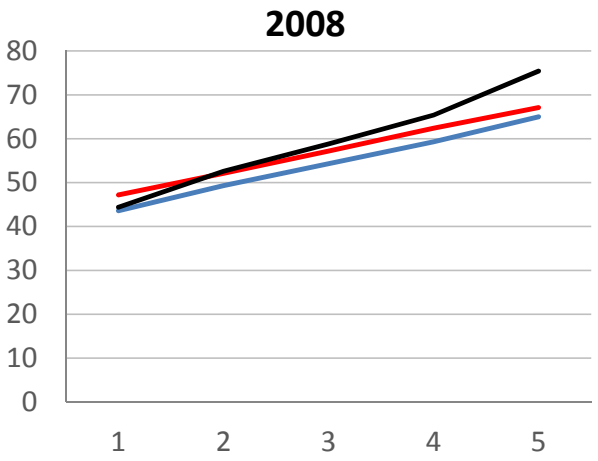
All Cohorts

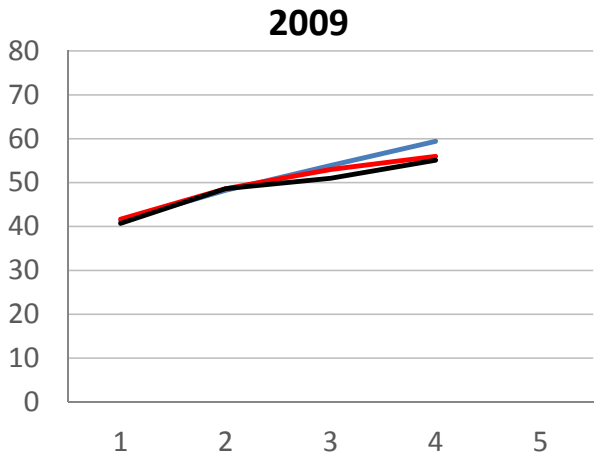


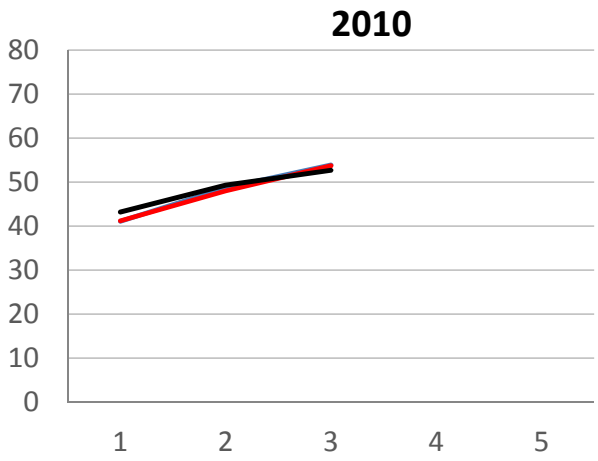


Older DE
Younger DE
Non-DE

All Cohorts







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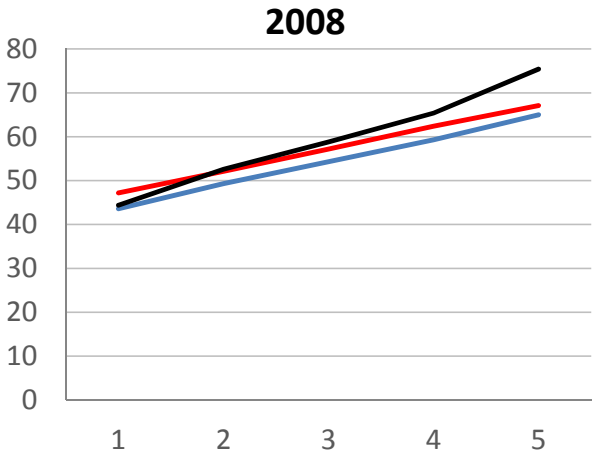
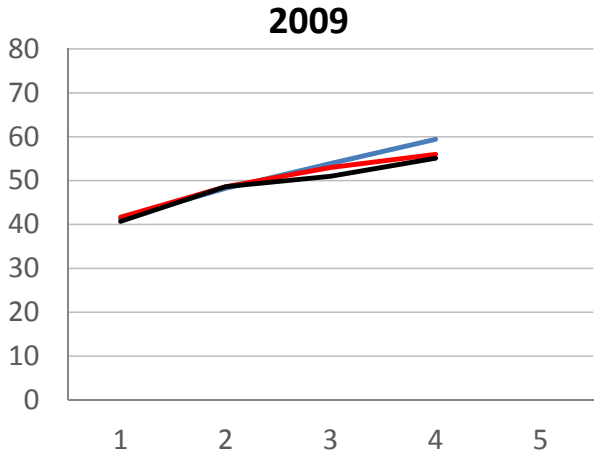
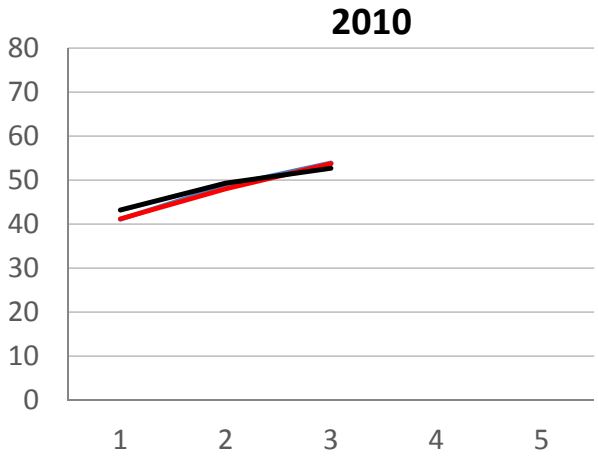
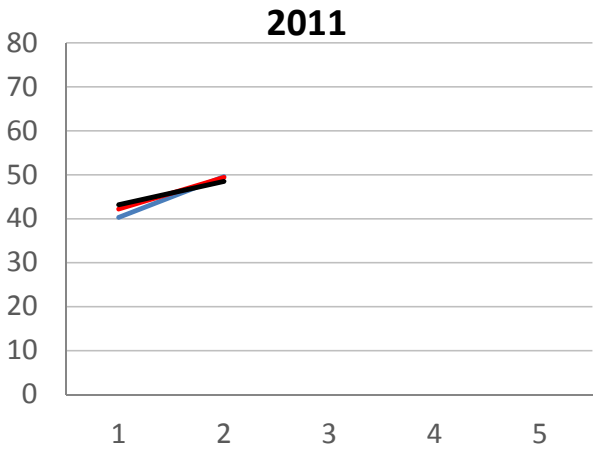
All Cohorts



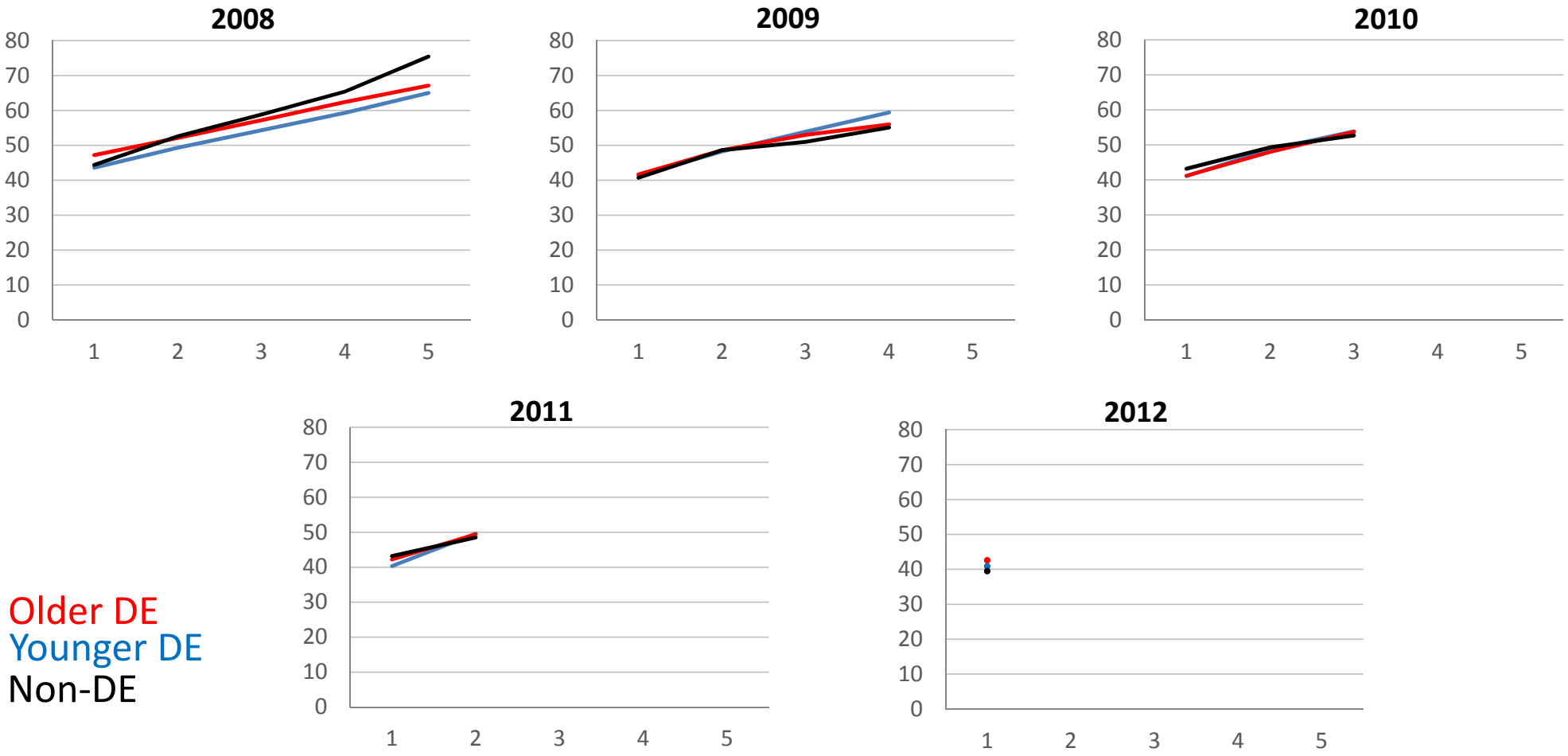






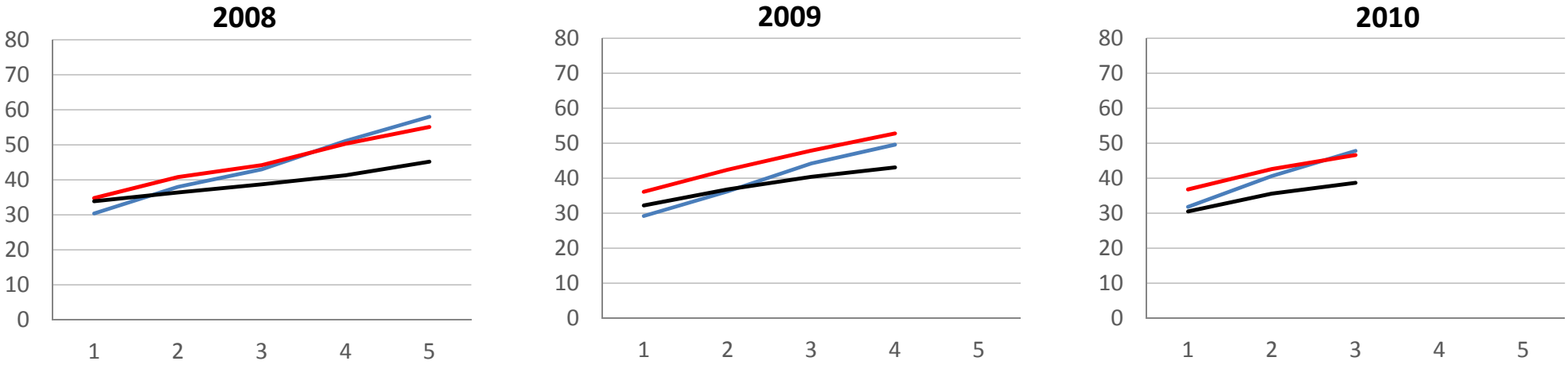
Older DE
Younger DE
Non-DE

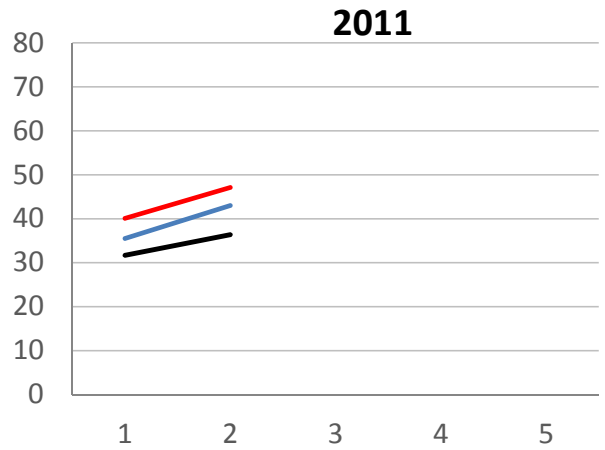
All Cohorts

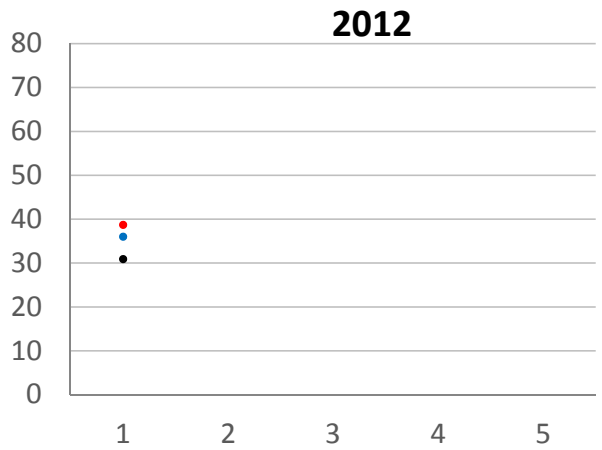


Older DE
Younger DE
Non-DE

Diploma Graduates

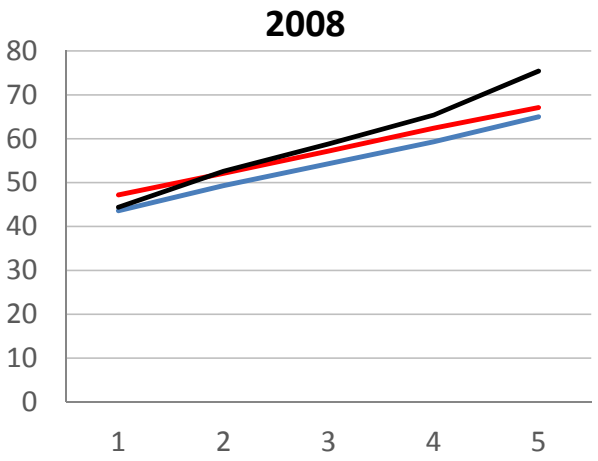


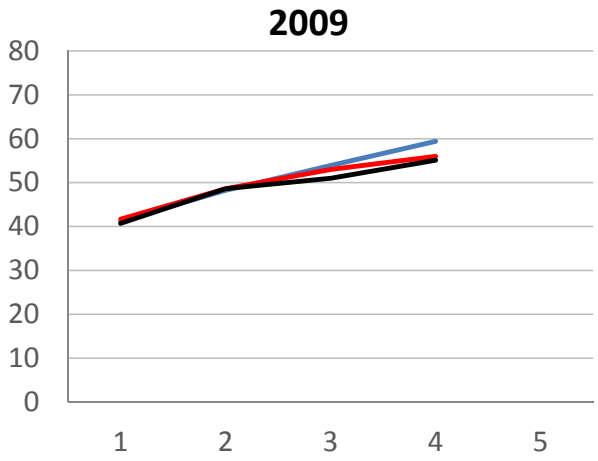


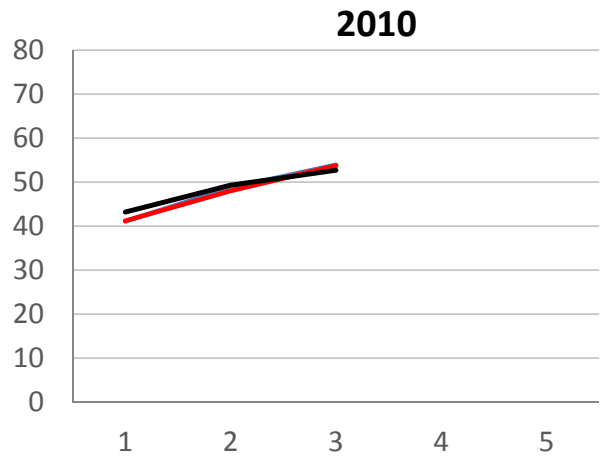


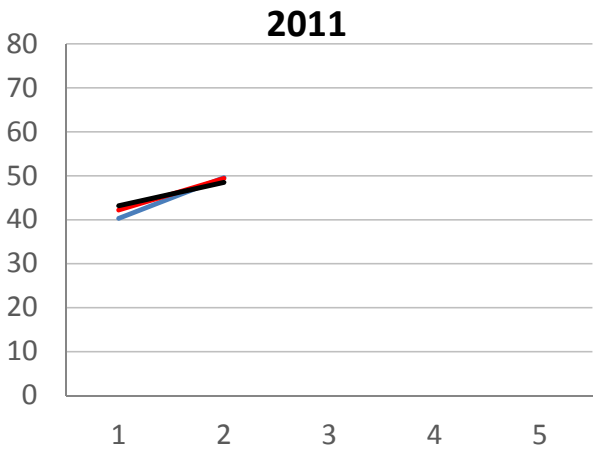
Older DE
Younger DE
Non-DE

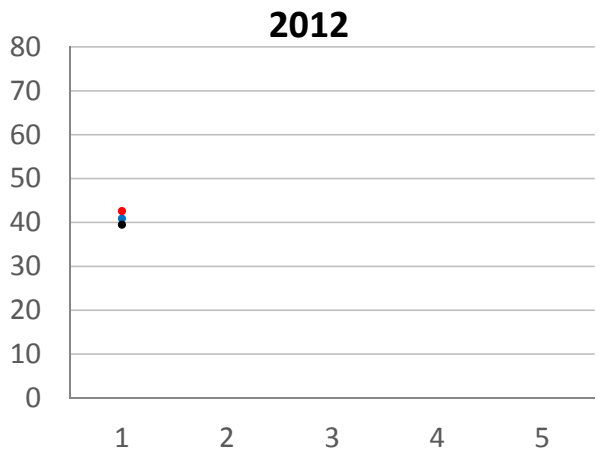
Degree Graduates











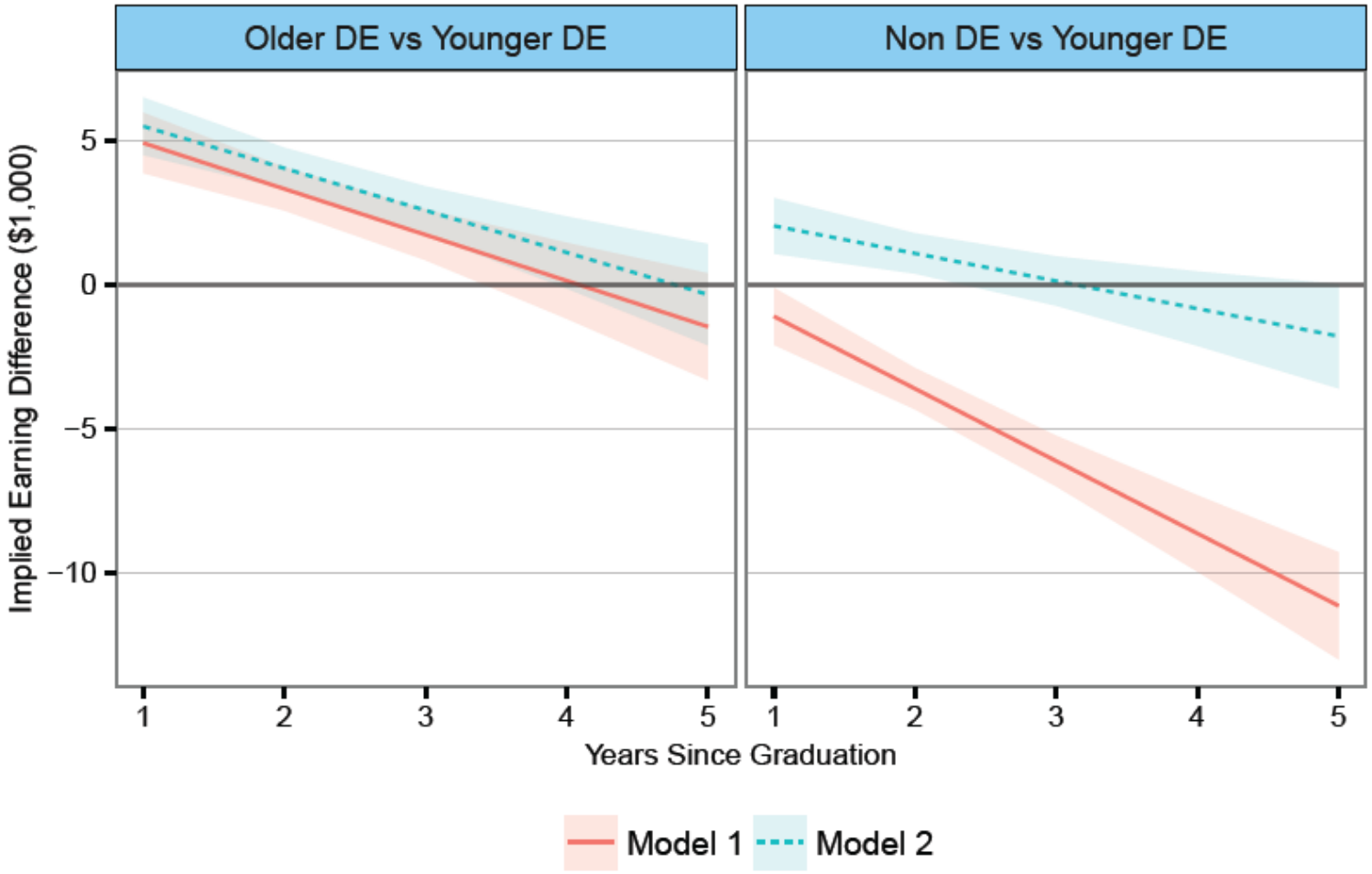
Older DE
Younger DE
Non-DE

Fitted Earnings Gaps From Regressions

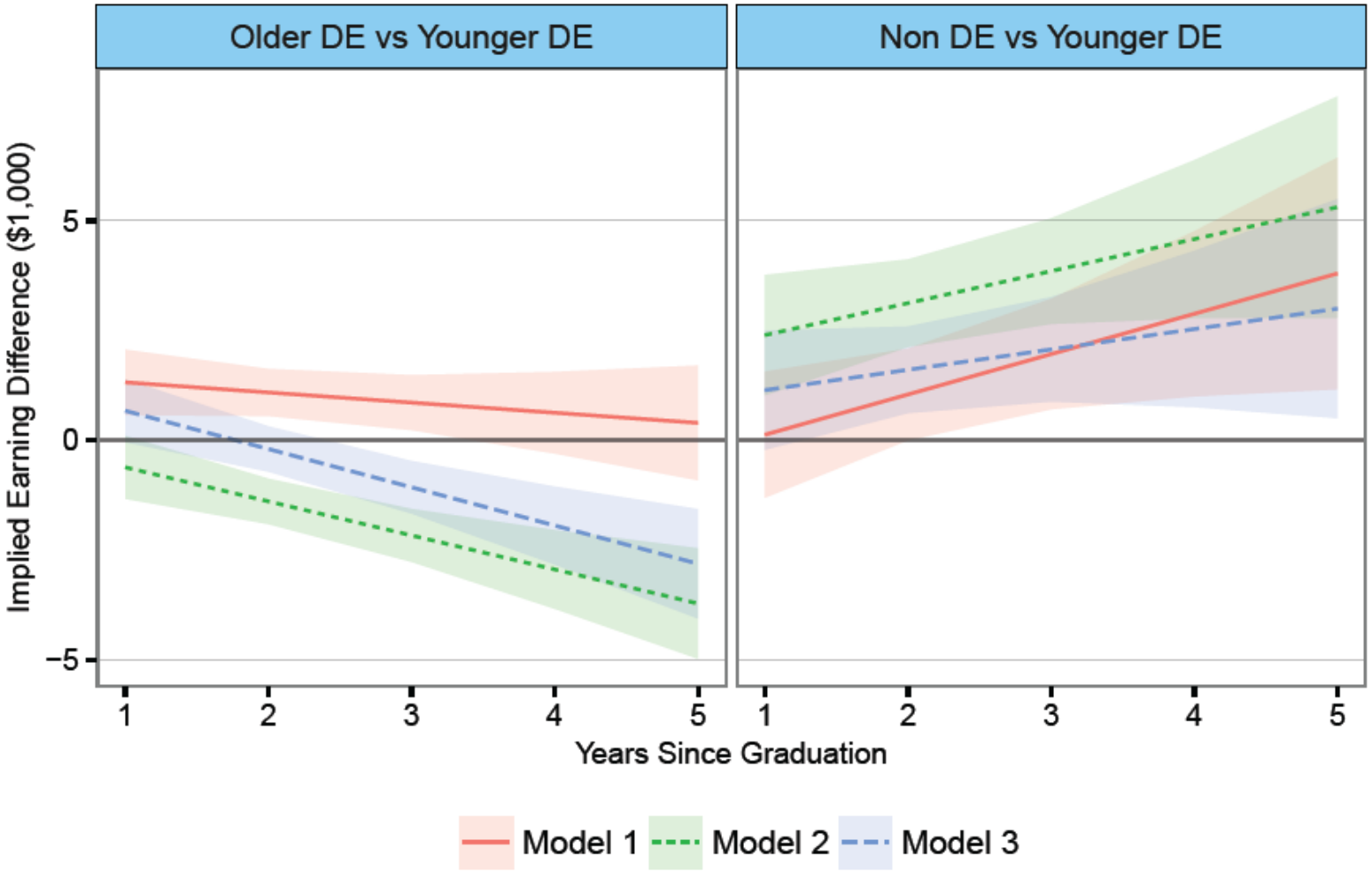
Regression Models

- M1: cohort, YSG, APPTYPE, interactions
- M2: add gender and FOS
- M3: add final GPA (degree graduates only)

Fitted Earnings Gap, Diploma Graduates

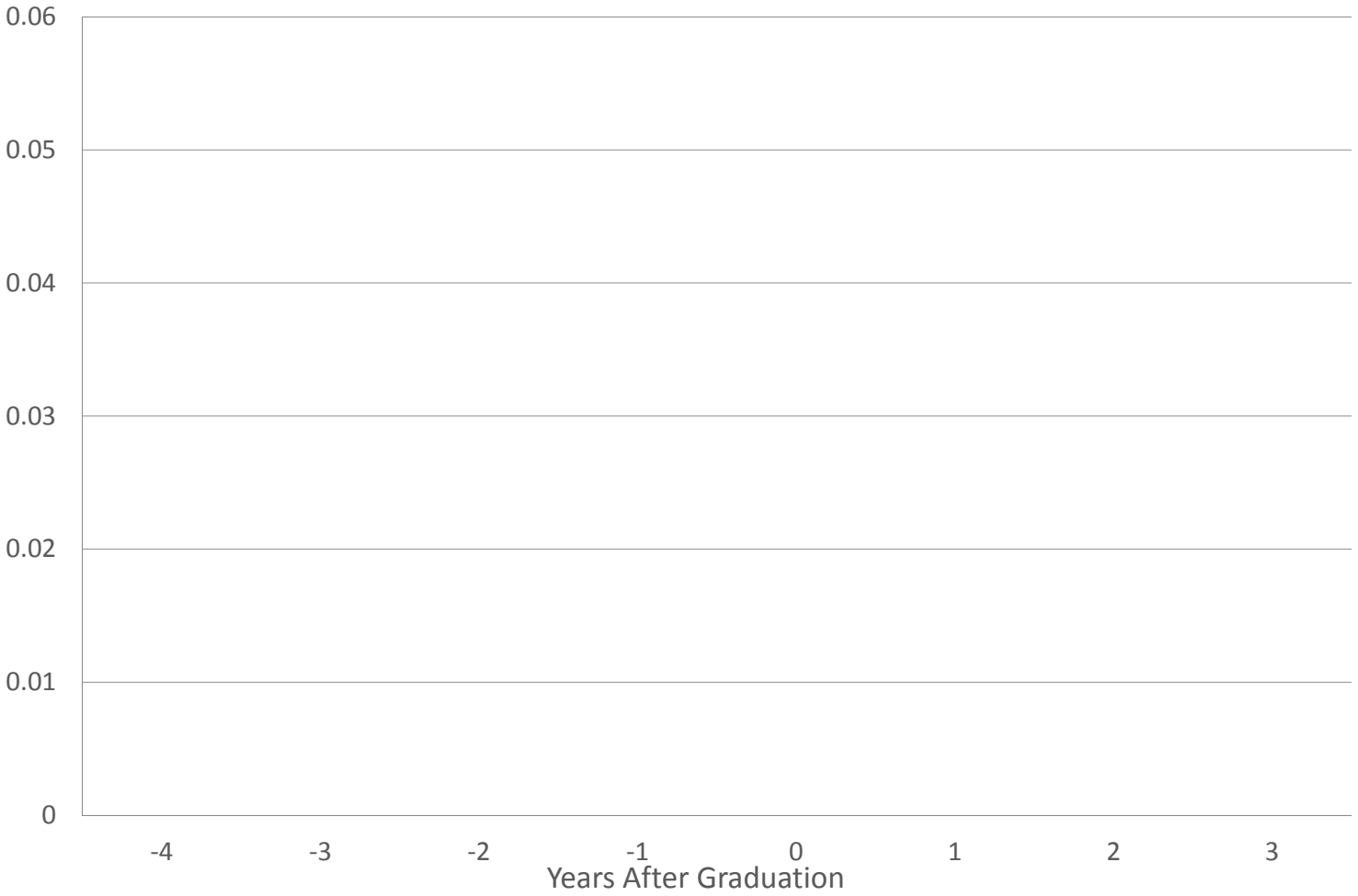


Fitted Earnings Gap, Diploma Graduates



Pre-Post Earnings of Diploma Graduates ($2014)

Pre-Post Earnings of Diploma Graduates



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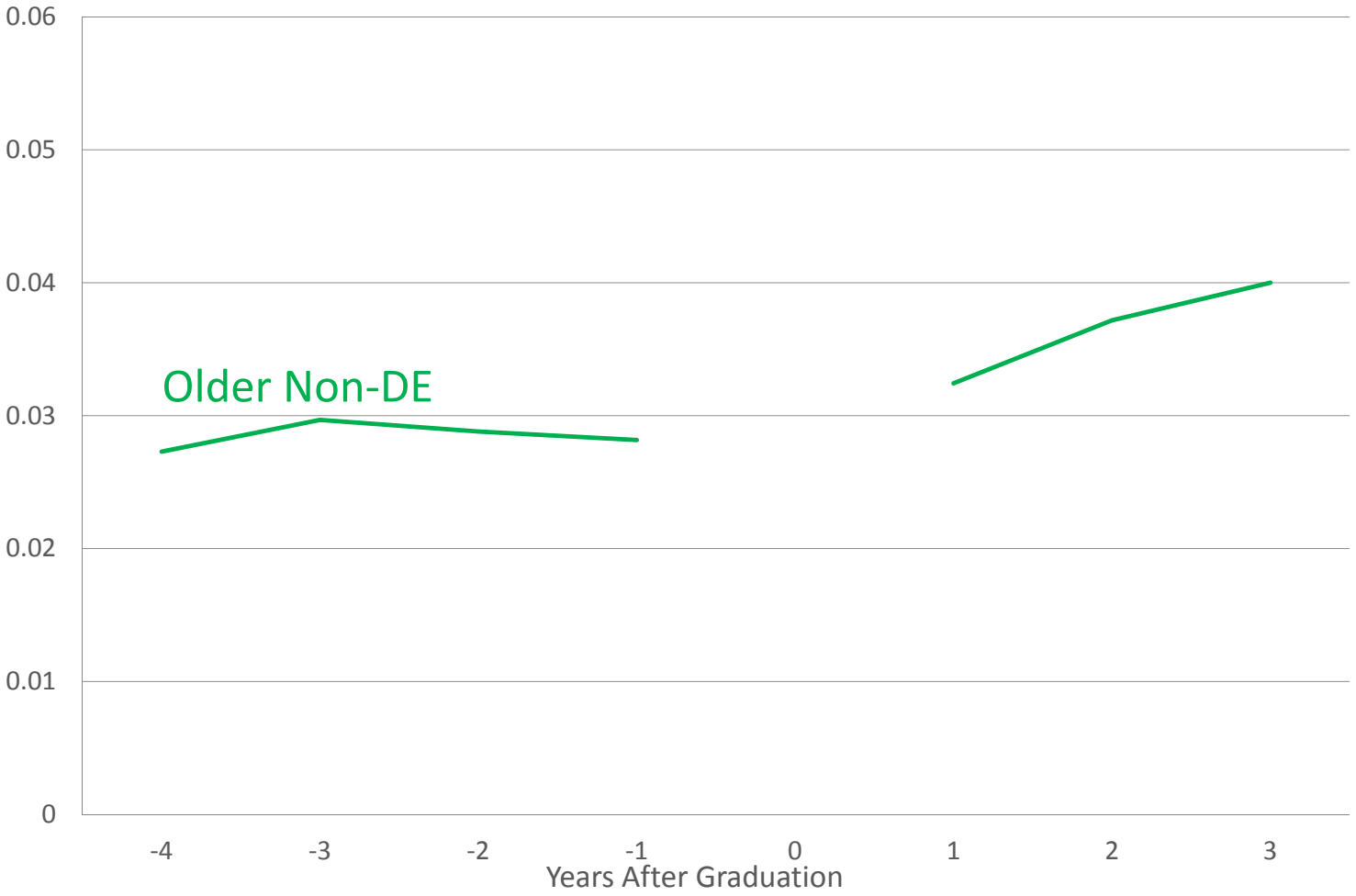
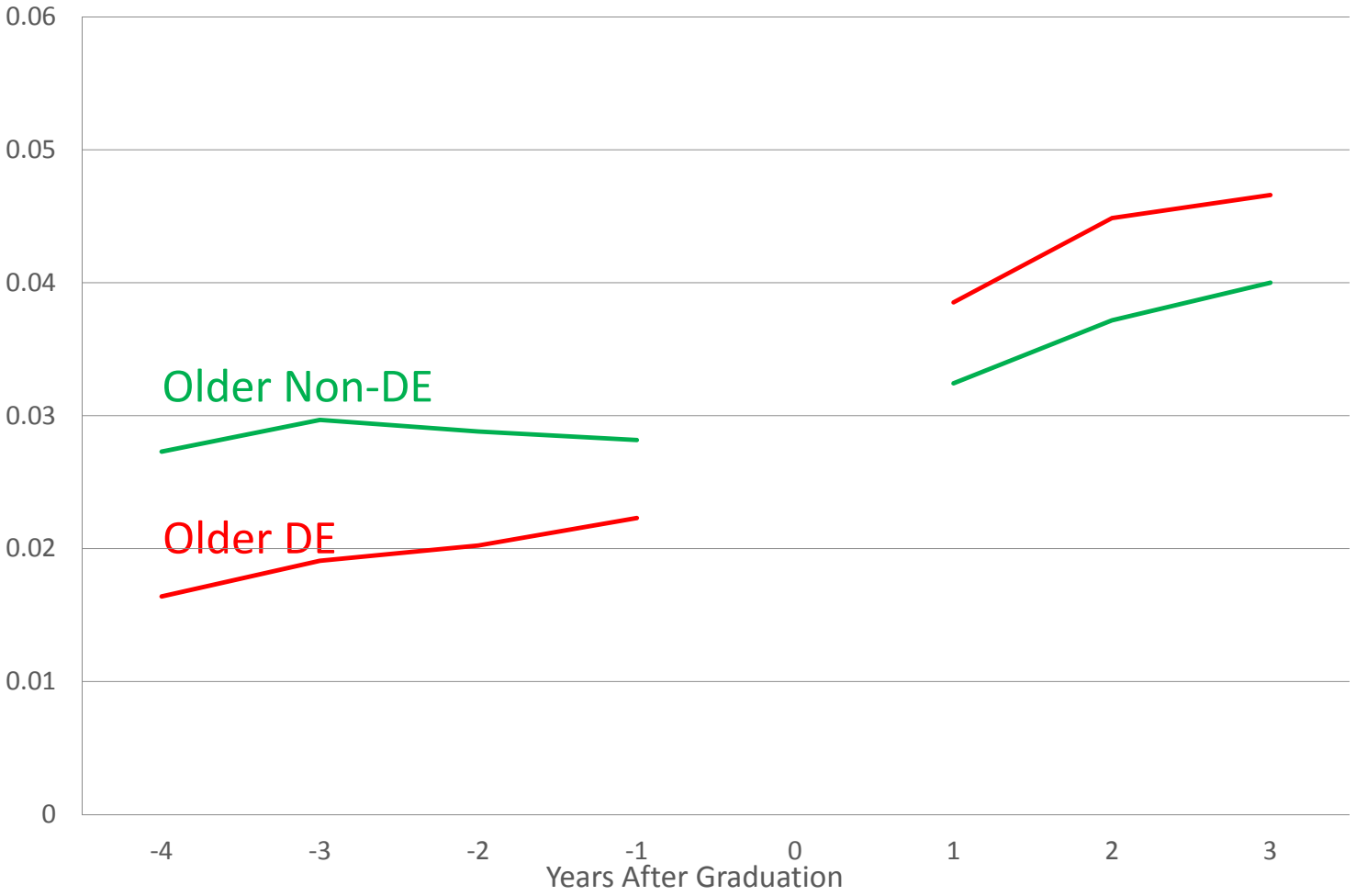
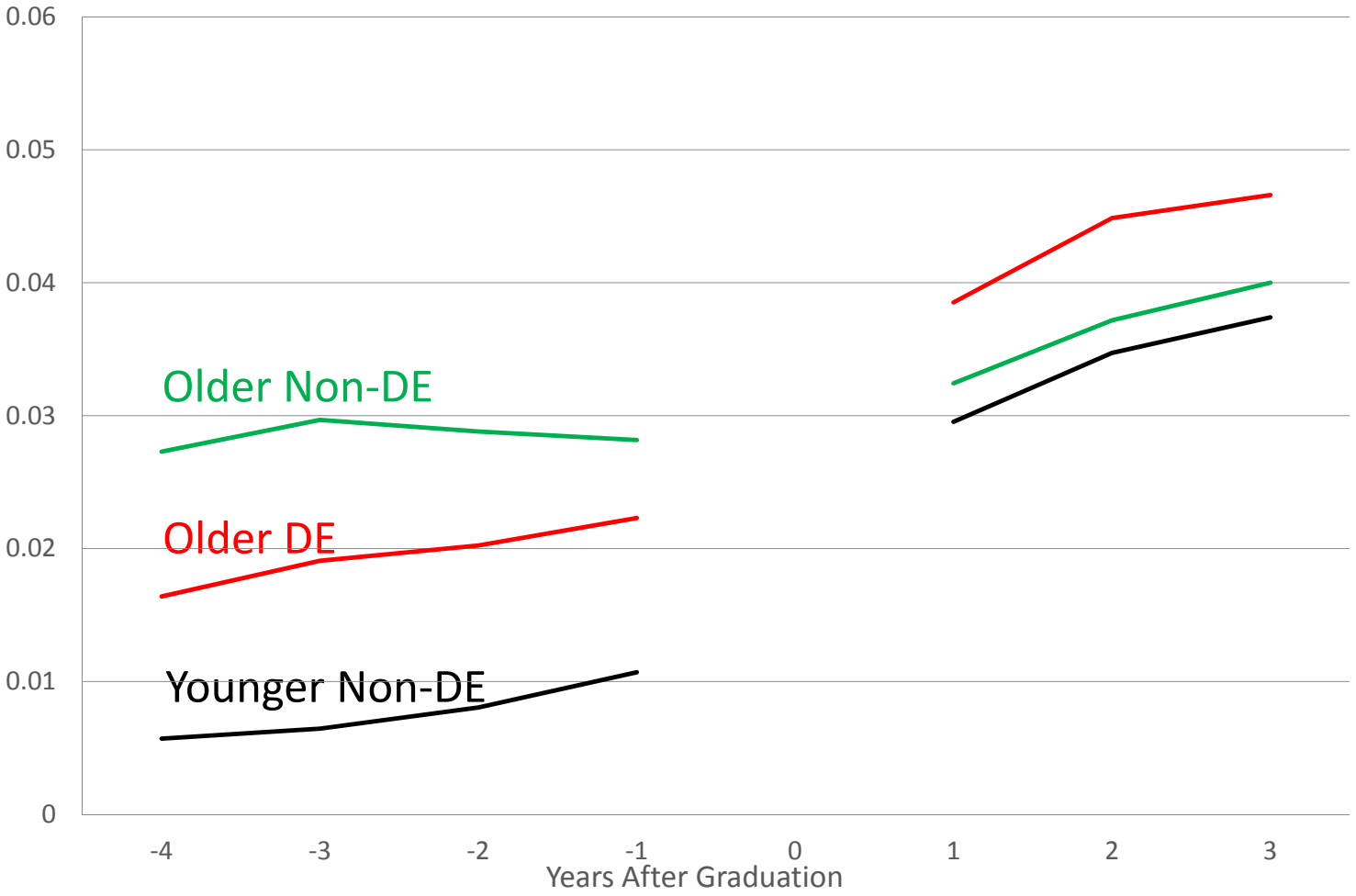


Pre-Post Earnings of Diploma Graduates



Pre-Post Earnings of Diploma Graduates



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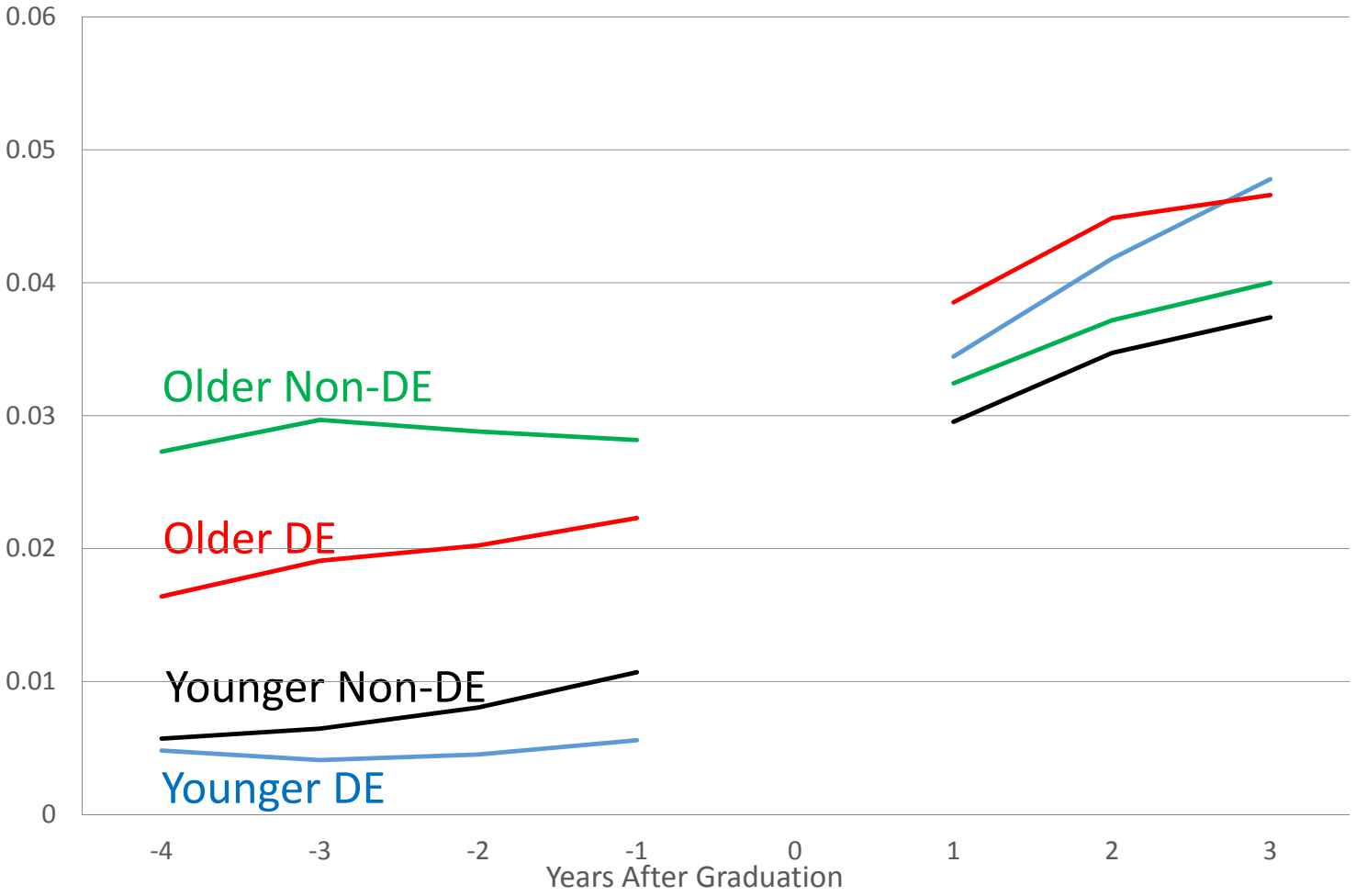

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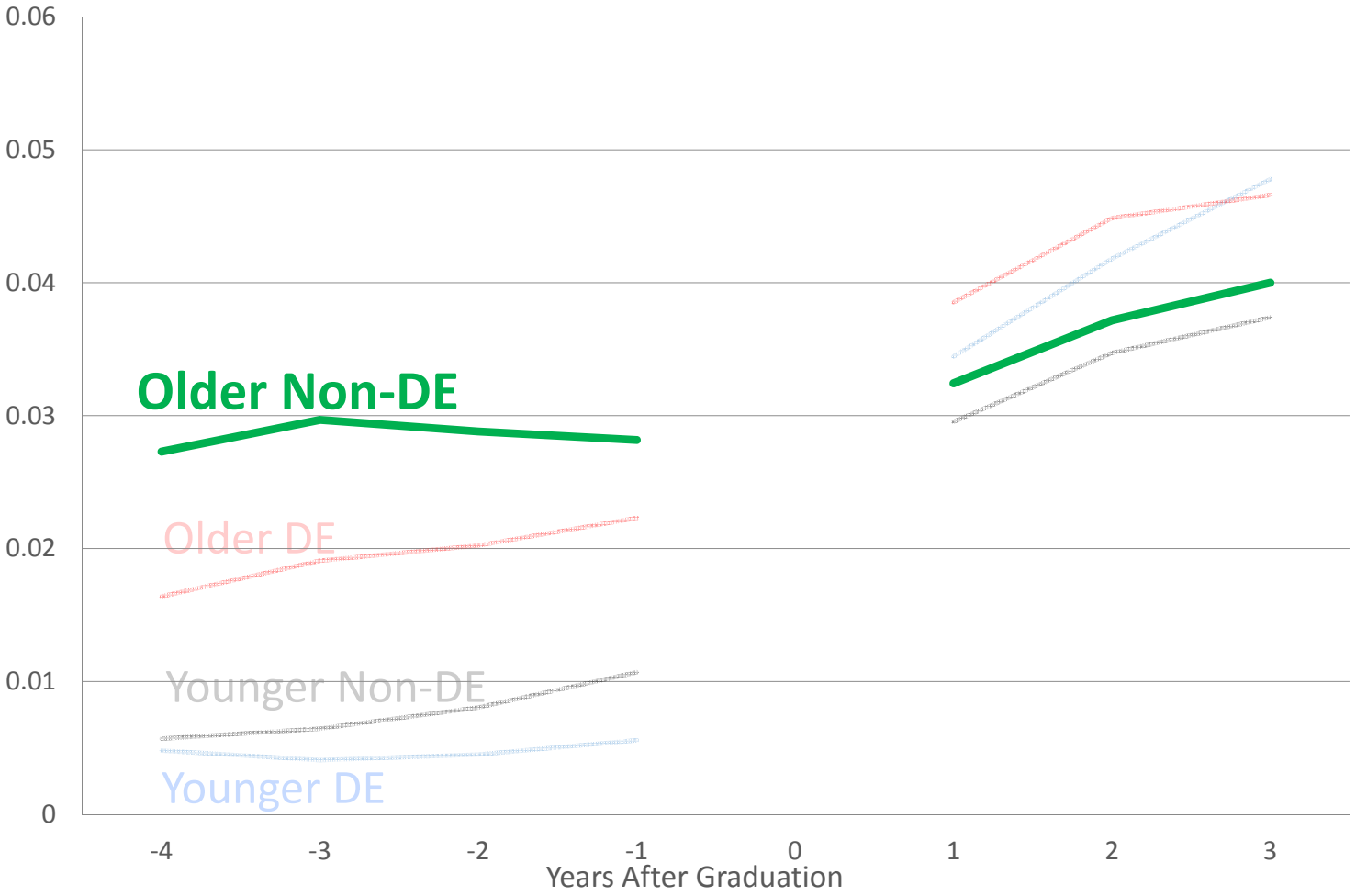

Pre-Post Earnings of Degree Graduates ($2014)

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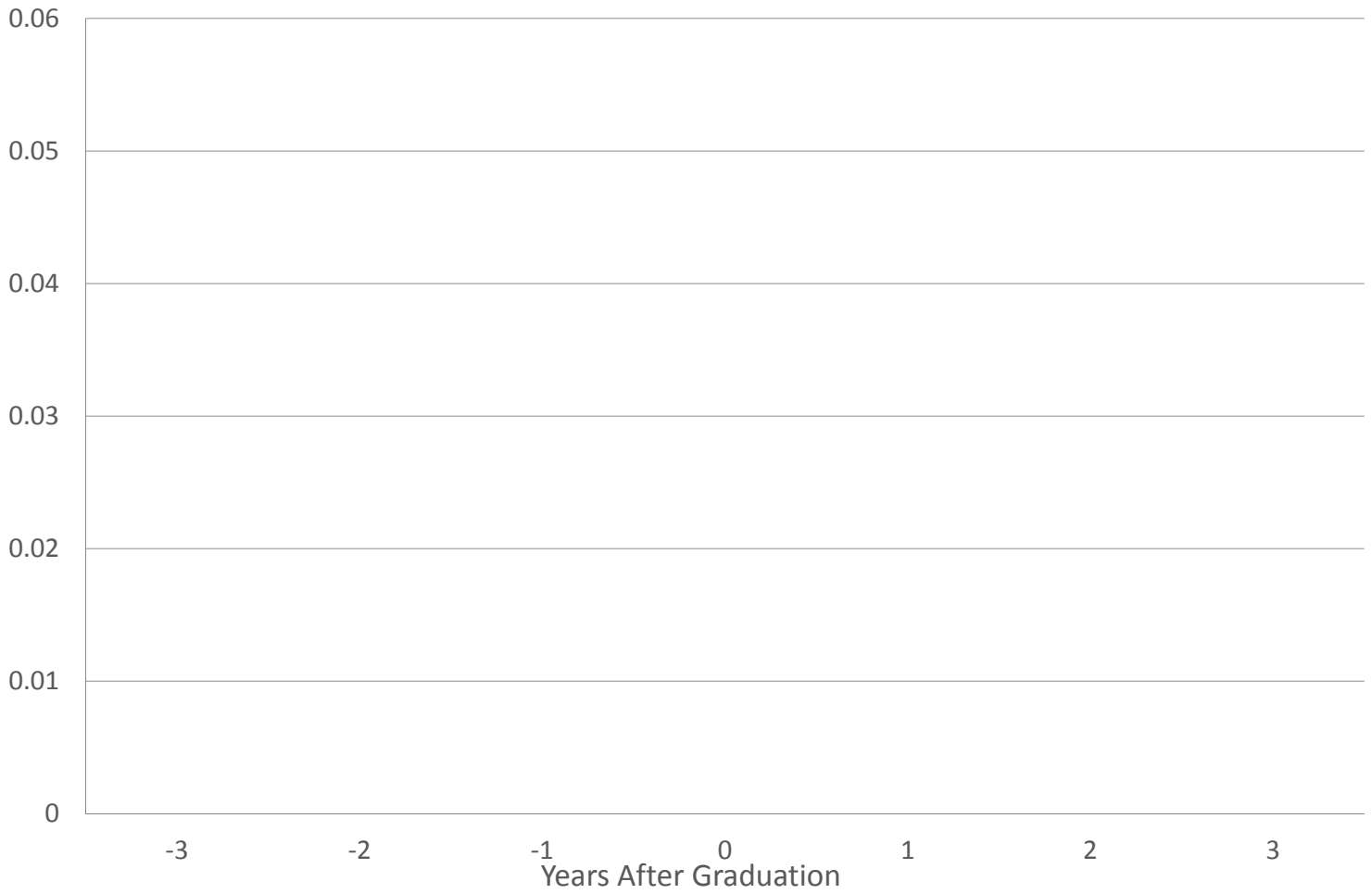

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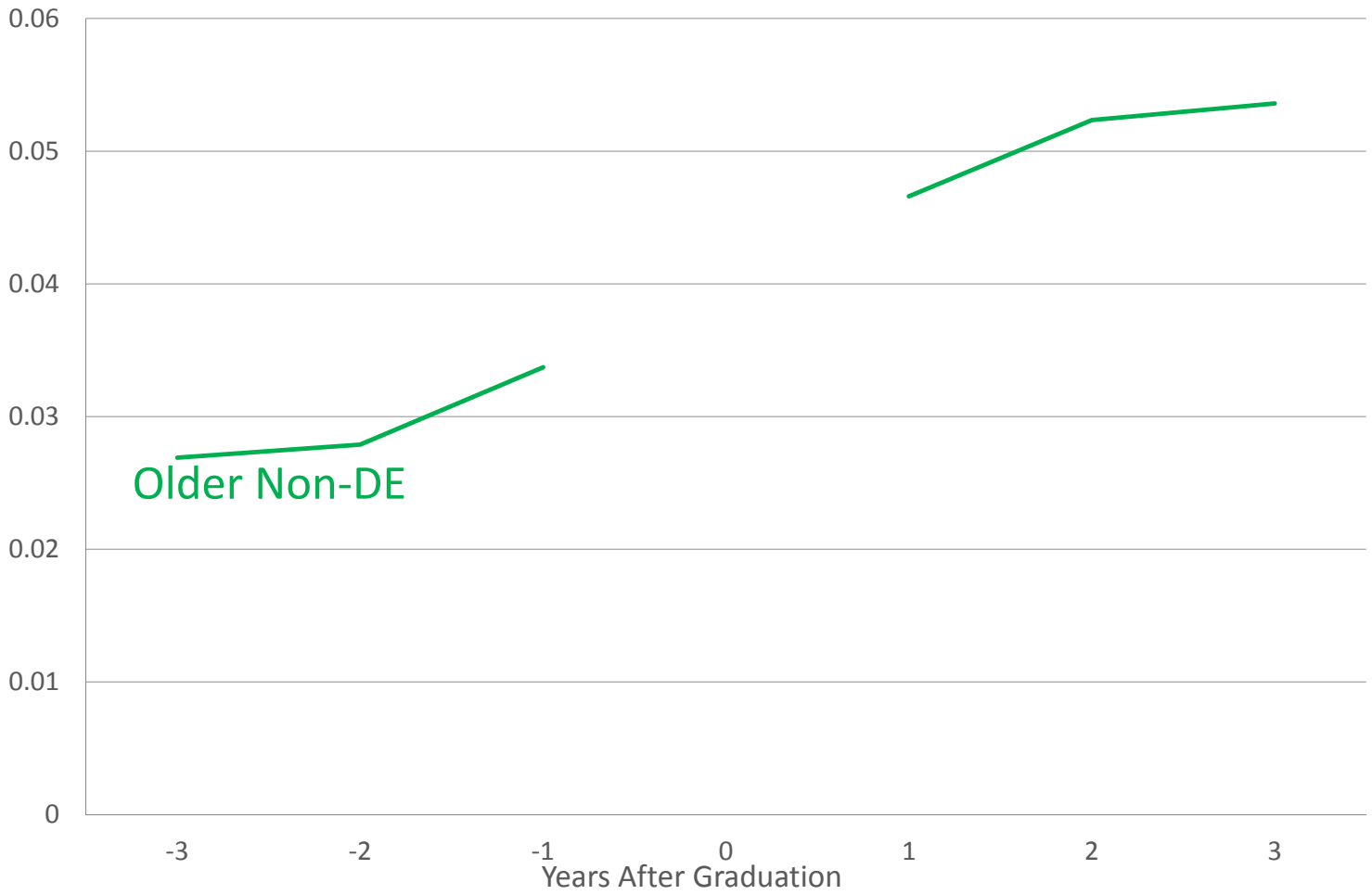

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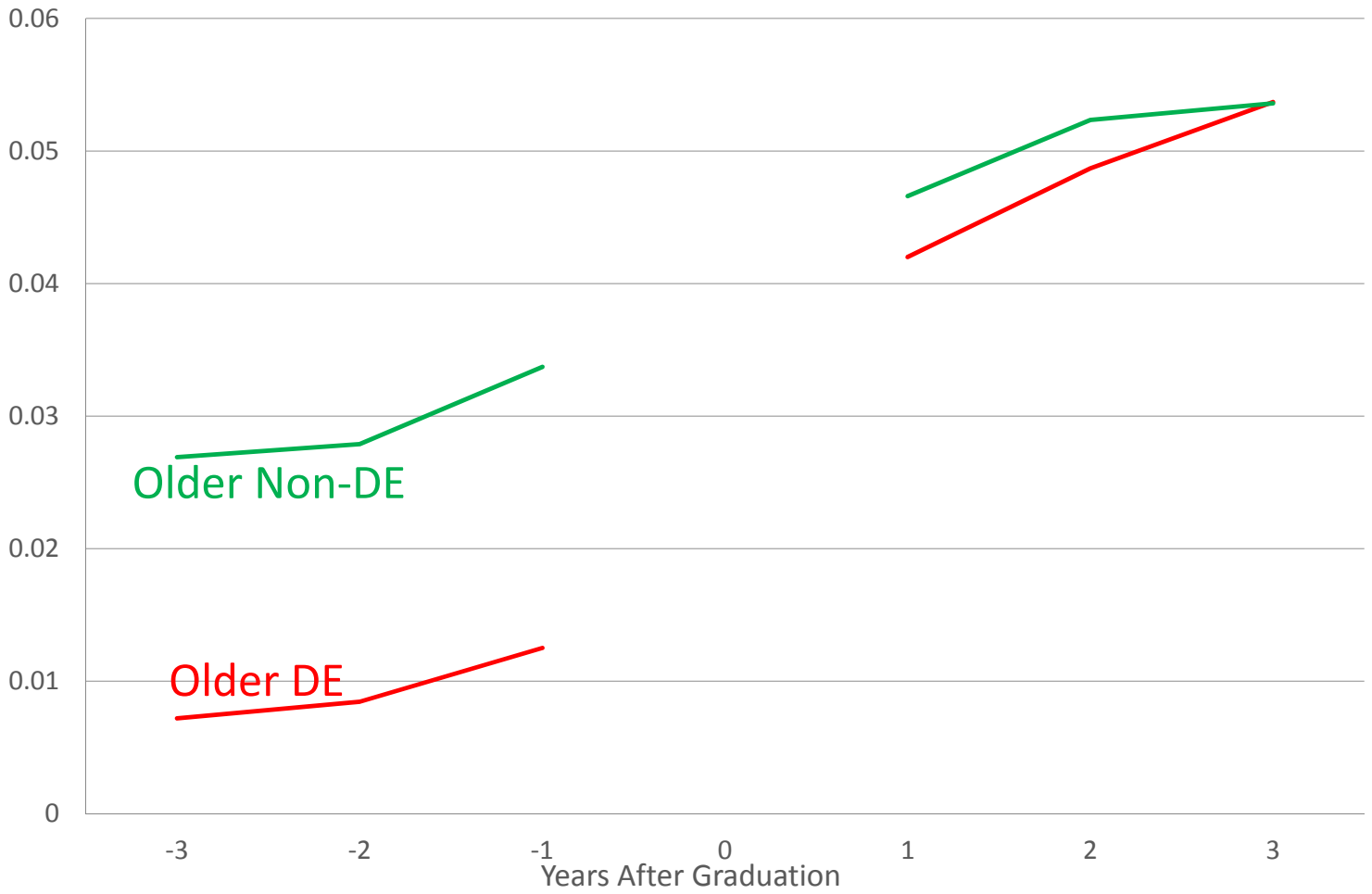

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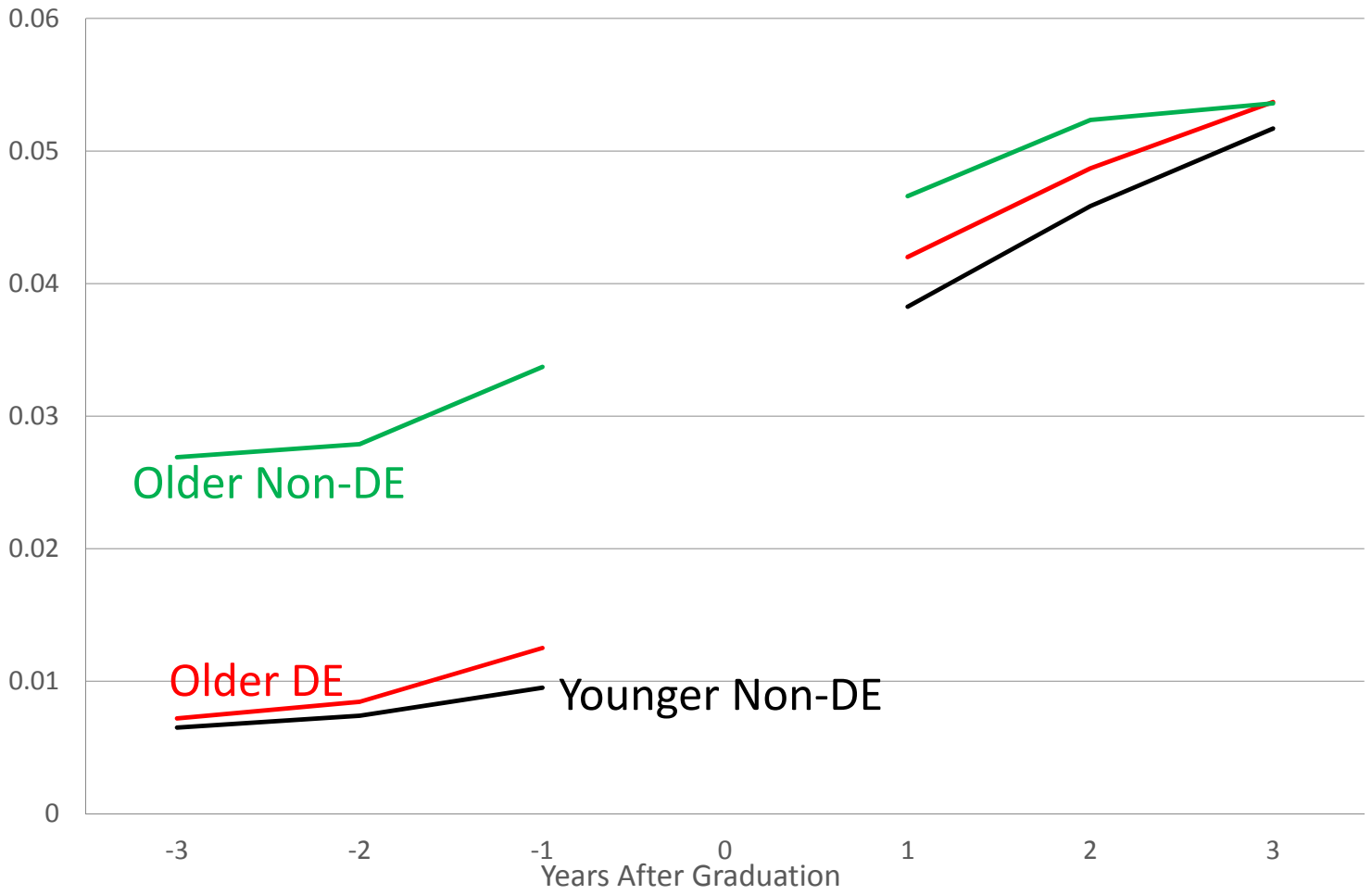

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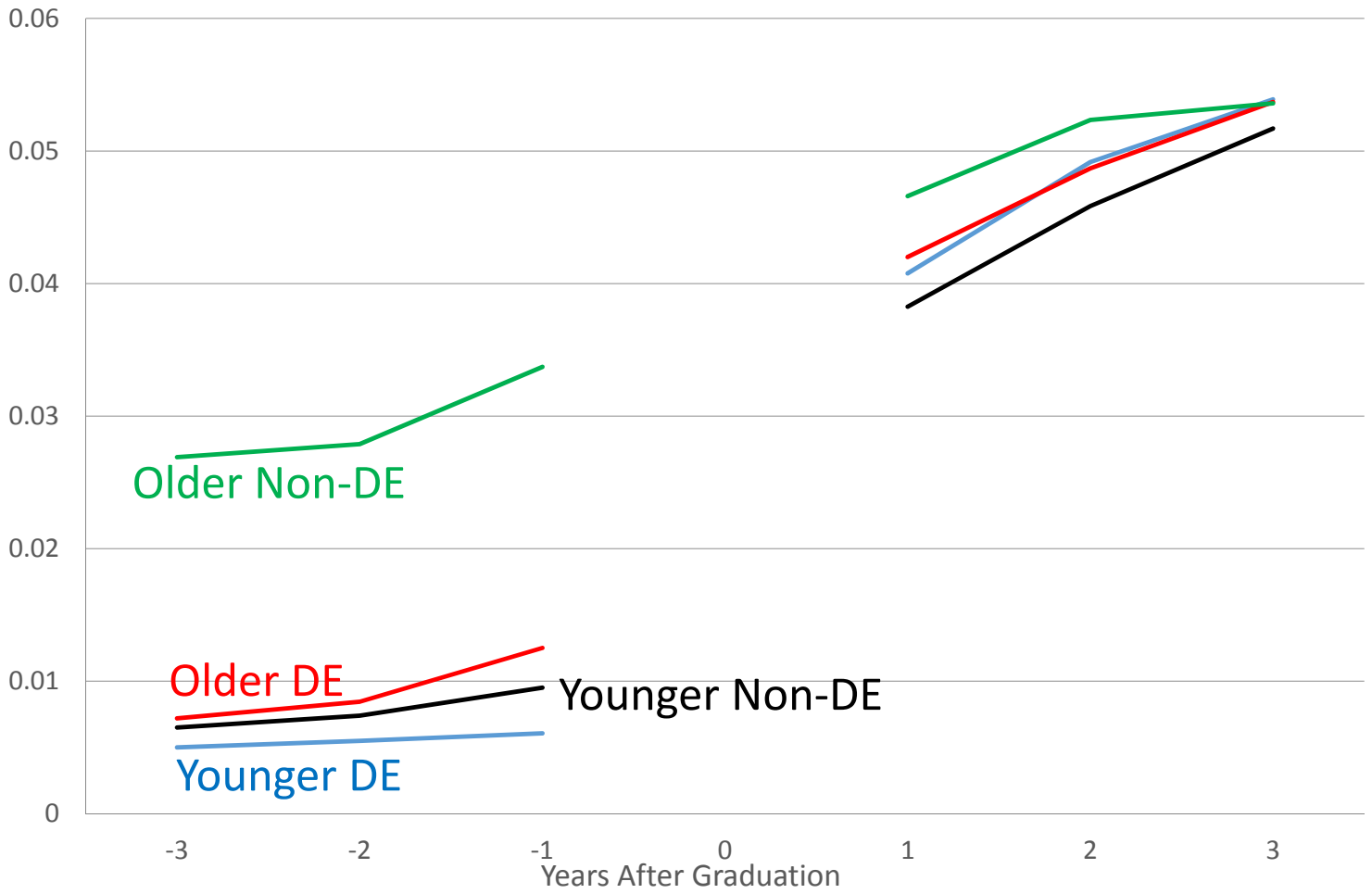

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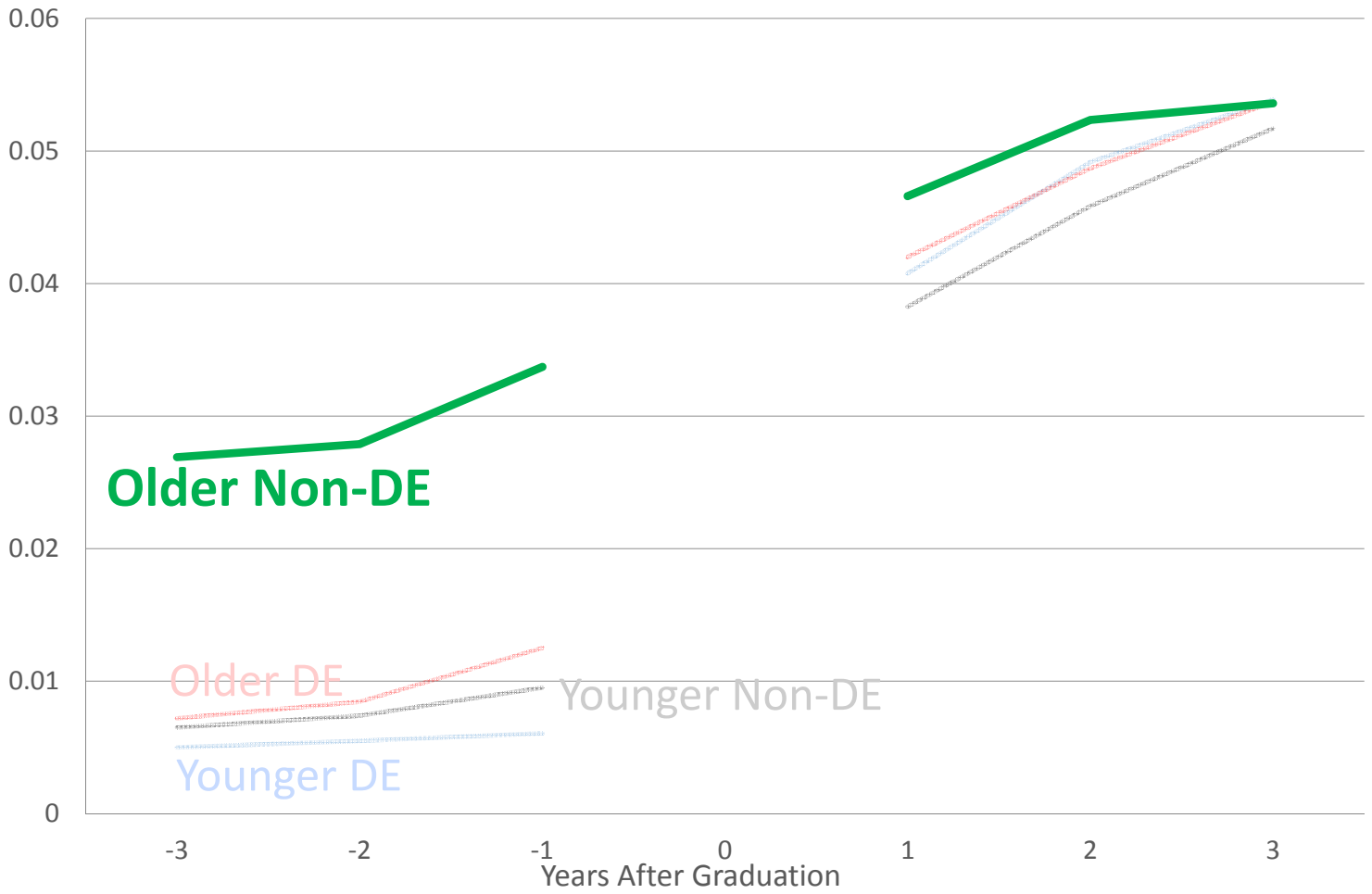


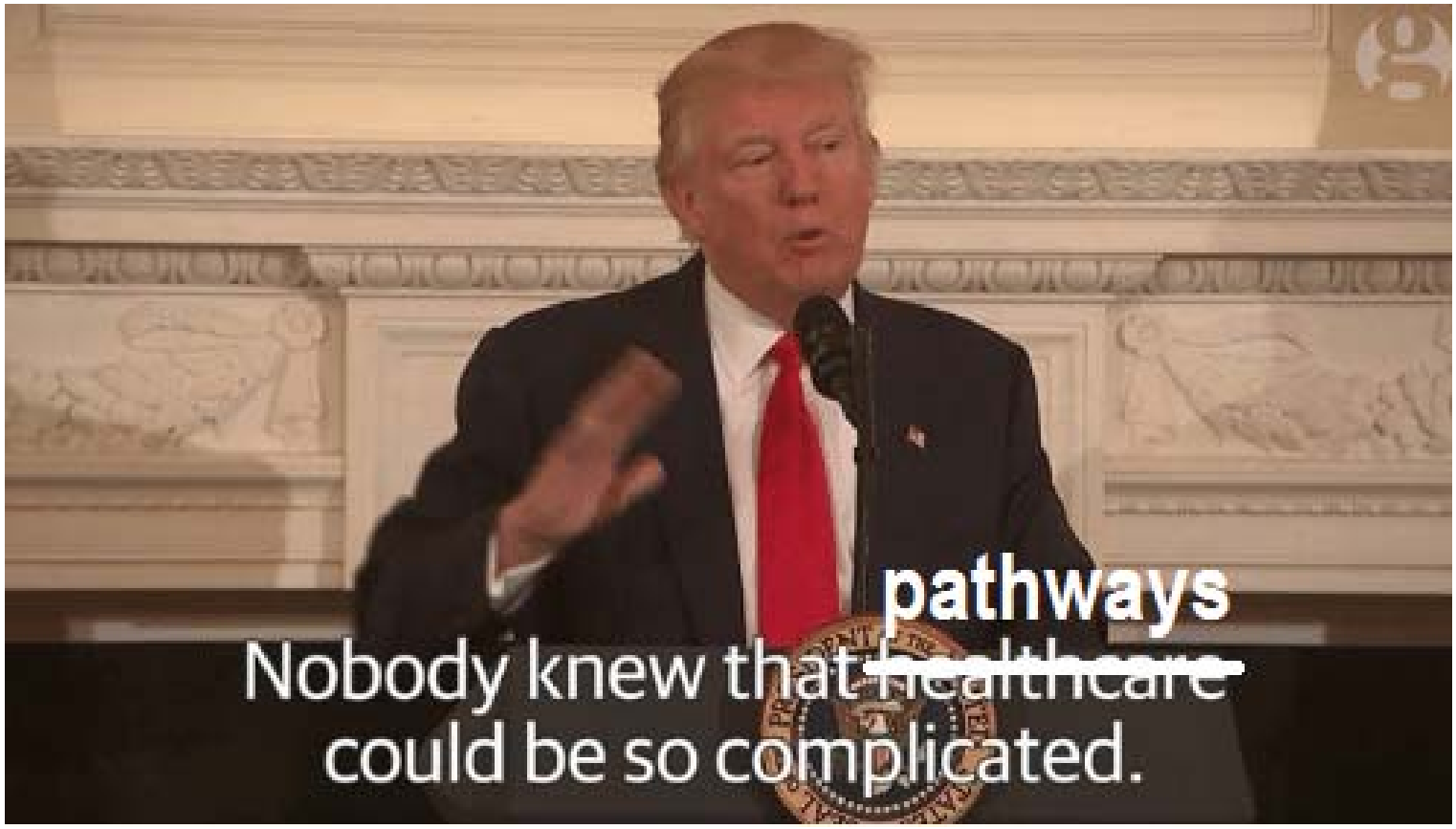
Lessons and Future Work

Original Questions & Challenges Remain

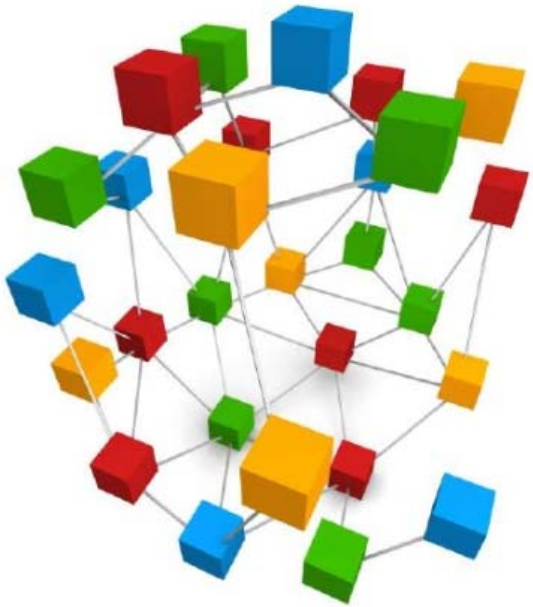
- Pathways through PSE
  - What are they?
  - Associated labour market outcomes?
- APPTYPE variable won't do it
- Need to *construct* pathways by tracking students
- But…

Pathways are Complex

Pathways are Complex



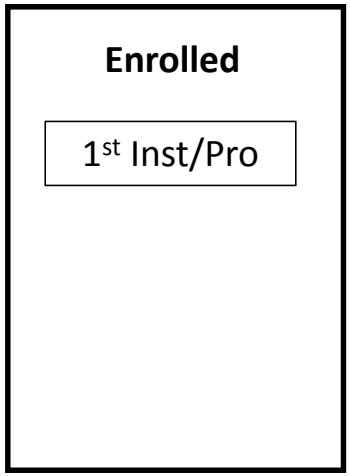
Need to Connect the Dots



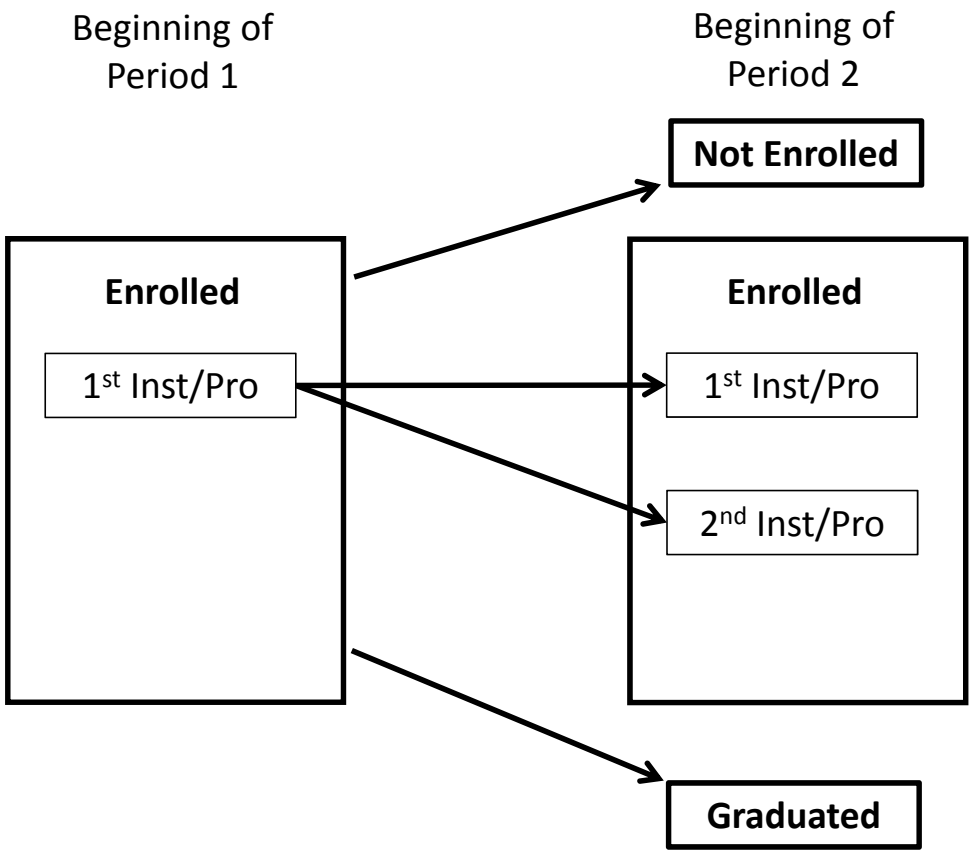
First Track Students In All Years at All Institutions

Tracking Pathways

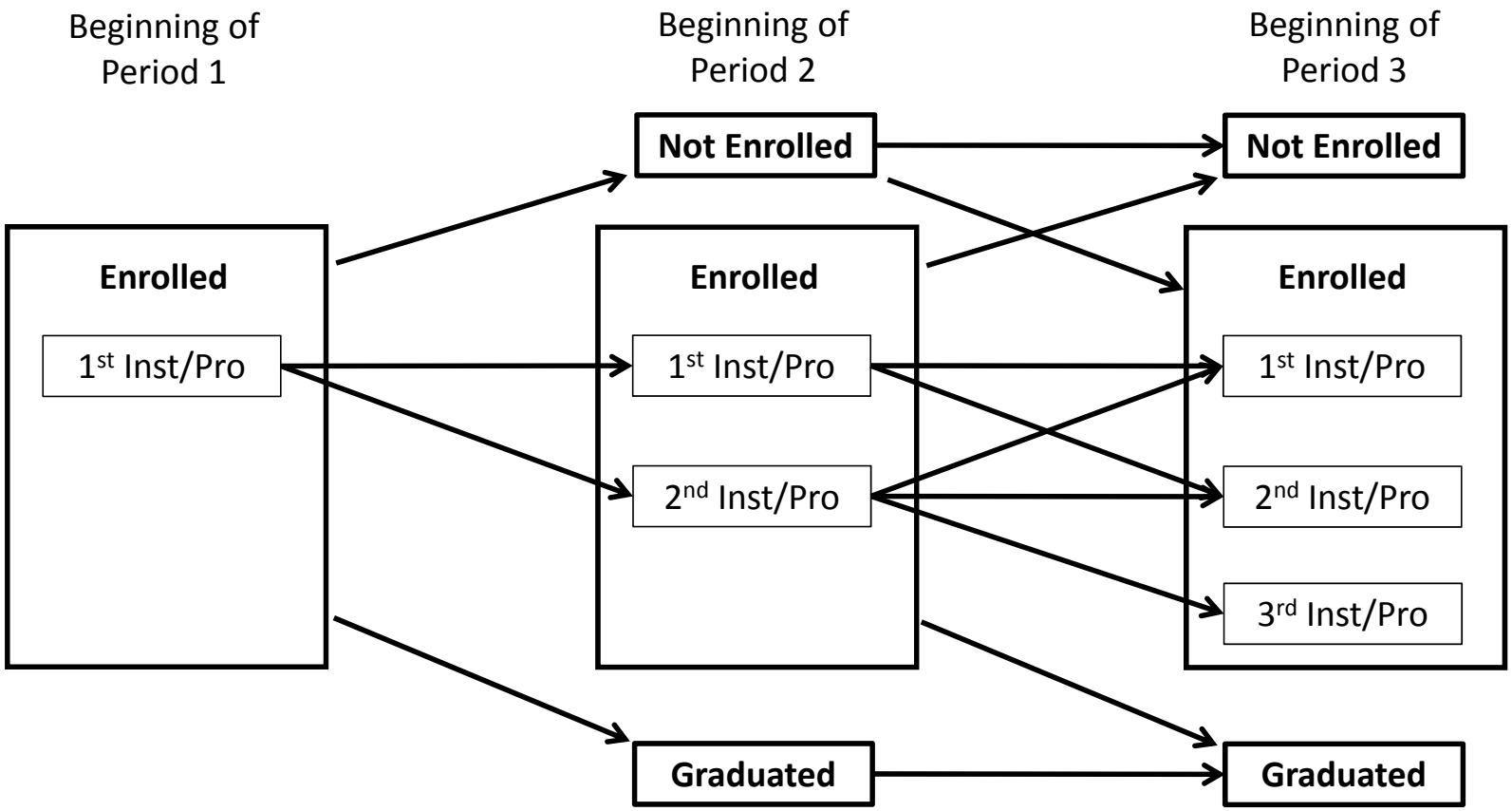
Beginning of
Period 1



Tracking Pathways



Tracking Pathways



Then Do (Start) The Analysis

The Analysis

- Pathways through PSE
  - What are they? – *including transfers, stop-outs, mature students, etc.*
- Then get in analytical framework
  - Relate to student and program characteristics & policy variables
  - Descriptive and regression/modelling set-up
- Associated labour market outcomes

Been There,
Done That (in Part)

Research Paper

Culture, Tourism and the Centre for Education Statistics

Moving Through, Moving On: Persistence in Postsecondary Education in Atlantic Canada, Evidence from the PSIS

by Ross Finnie and Theresa Qiu

Culture, Tourism and the Centre for Education Statistics Division
Main Building, Room 2001, Ottawa, K1A 0T6

Telephone: 1-800-307-3382 Fax: 1-613-951-9040

Statistics Canada Statistique Canada

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How Student Pathways Affect Labour Market Outcomes: Evidence from Tax-Linked Administrative Data

Ross Finnie (rfinnie@uottawa.ca)

EPRI Education Policy Research Initiative
Initiative de recherche sur les politiques de l'éducation