The George Washington University School of Business
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Do NFL Players with Short-Lived Income Spikes Smooth Consumption?

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Joint work with many collaborators

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  - Professor of Behavioral Economics and Neuroscience at Caltech
  - Winner of “genius” prize from MacArthur Foundation
- Kyle Carlson

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Test of a fundamental economic model

- Life cycle model of saving
  - Used by all financial planners and what we recommend people do for retirement saving
- Main idea
  - People should save when income is high to provide for when income is low, for example, after retirement
  - The tale of the ant and the grasshopper
- But is this how people behave?

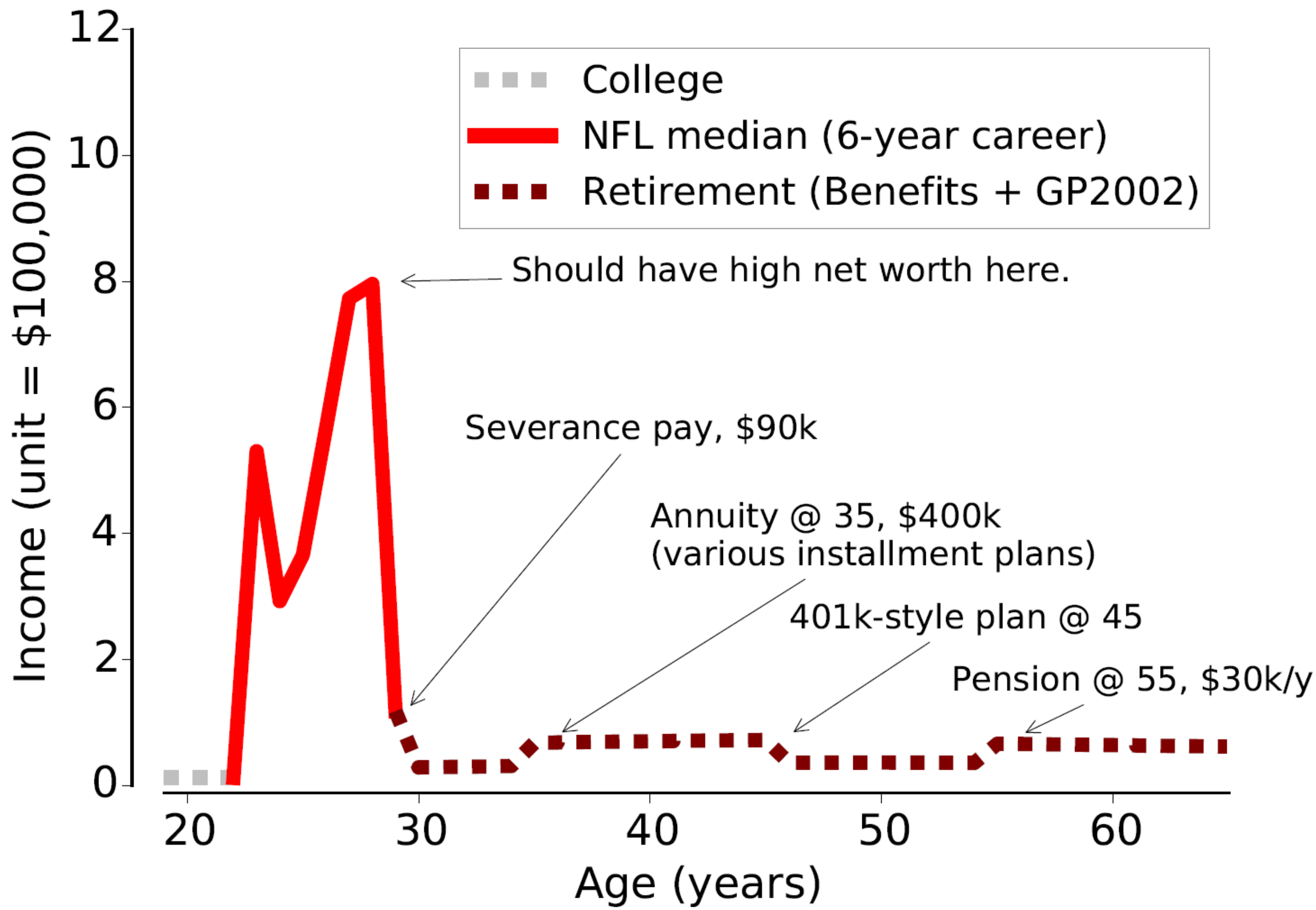
Study a special group: NFL players

- National Football League (NFL) players
  - Income spike: Huge, short-lived, and risky
  - Median career earnings: $3.2 million (Y2000 dollars)
  - Enough earnings for a lifetime of consumption
  - Sudden income change: Predictable, almost unavoidable
  - Young, inexperienced, highly visible, subject to social influences

Big data collection effort

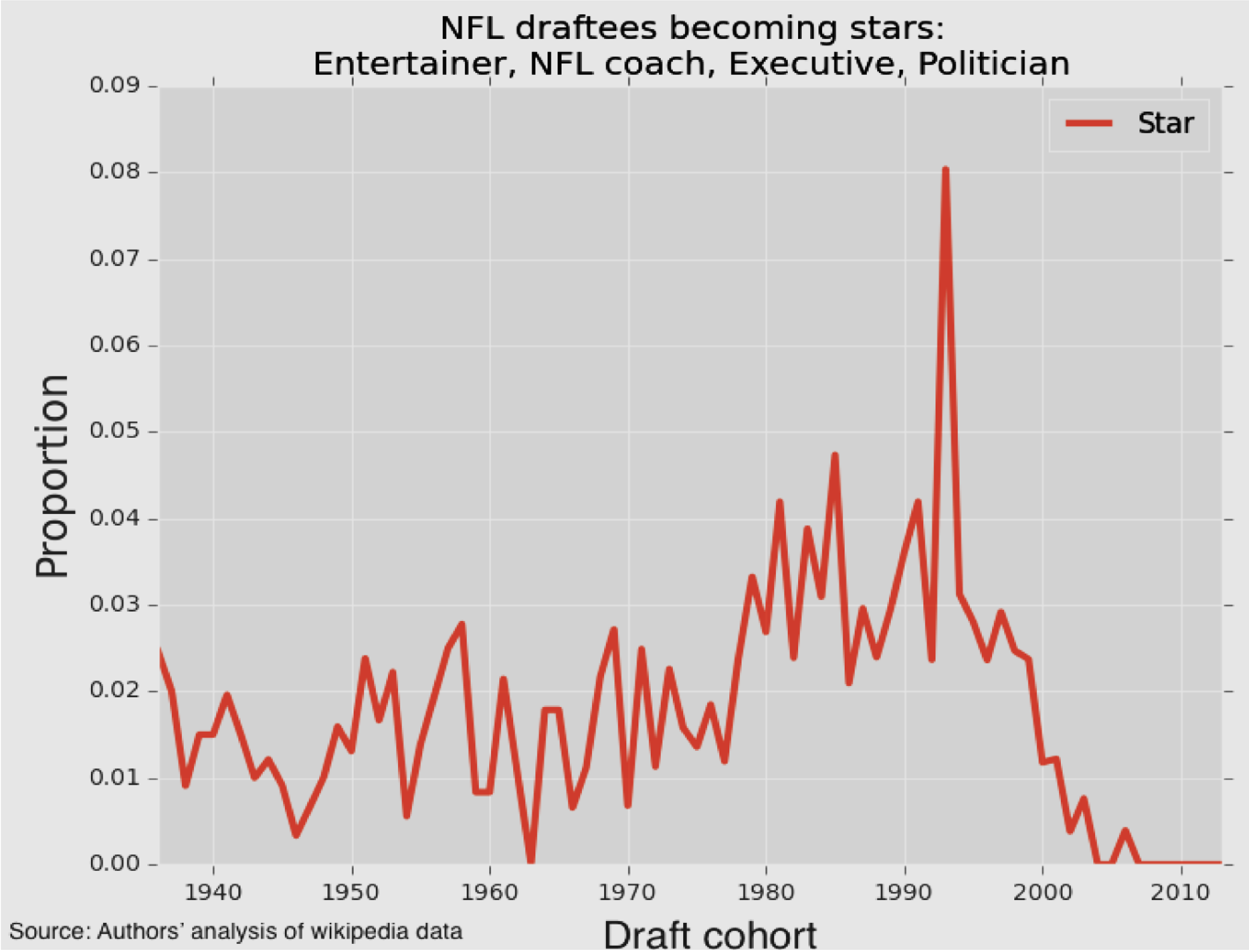
- Data
  - Sample: All drafted players, 1996-2003 (N = 2,016)
  - NFL careers: pro-football-reference.com, NFL.com
  - NFL income: spotrac.com, usatoday.com
  - NFL financial: Commercial background check services (bankruptcy filing is public record.)
  - Coverage: 1996-2013

Example income profile



Post-NFL income

- “Retirement” means not playing in the NFL.
- Players may get new jobs...
    - Takes some time to find a new job
    - Becoming a post-NFL “star” is pretty rare => Much lower income
- The “income spike” argument holds as long as players do not become stars immediately after retiring.


NFL draftees becoming stars:
Entertainer, NFL coach, Executive, Politician
Star
Proportion
Draft cohort
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
1940
1950
1960
1970
1980
1990
2000
2010
Source: Authors' analysis of wikipedia data

Our empirical strategy

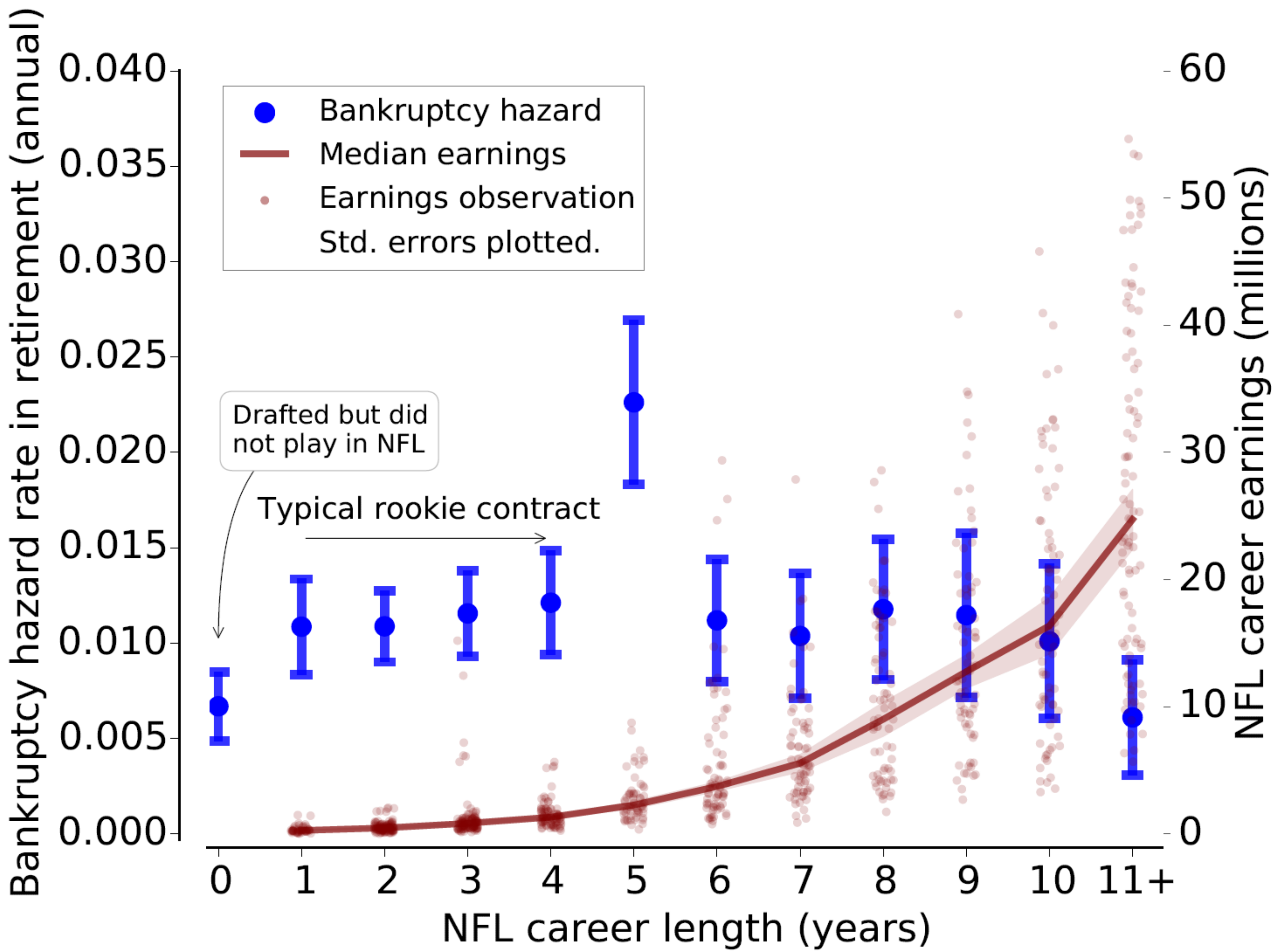
- We do not have data on saving or consumption: Look instead at bankruptcy filings
- Bankruptcy filings (BKs): Indicator of low net worth and financial fragility
- Estimate BK hazard rate during retirement

Our findings

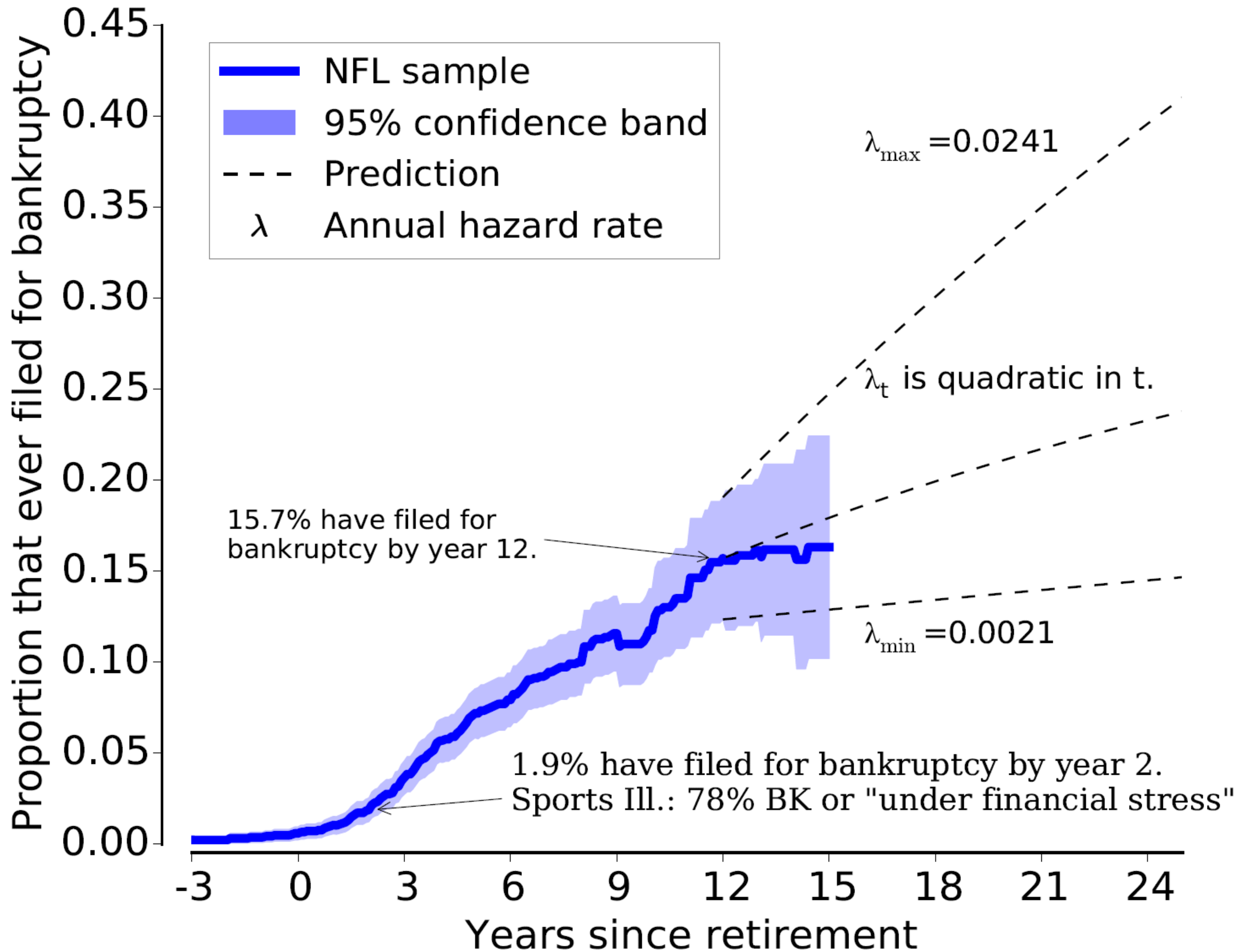
Preview of our findings

- Result: BKs start soon after retirement
- Result: BK hazard is insensitive to career earnings
- Result: BK hazard is similar to (if not higher than) the general population of young (college educated) people

Different statistics than reported in sports magazines, like *Sports Illustrated*



Bankruptcy hazard
Median earnings
Earnings observation
Std. errors plotted.
Drafted but did not play in NFL
Typical rookie contract
Bankruptcy hazard rate in retirement (annual)
NFL career earnings (millions)
NFL career length (years)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
60
50
40
30
20
10
0
0
1
2
3
4
5
6
7
8
9
10
11+



NFL sample
95% confidence band
Prediction
λ Annual hazard rate
λmax =0.0241
λt is quadratic in t.
λmin =0.0021
15.7% have filed for bankruptcy by year 12.
1.9% have filed for bankruptcy by year 2.
Sports Ill.: 78% BK or "under financial stress"
Proportion that ever filed for bankruptcy
Years since retirement
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
-3
0
3
6
9
12
15
18
21
24

Earnings: Little protective effect early in retirement

- An additional \$1,000,000 in earnings decreases hazard in the first two years 0.0003
- \$10,000,000 cuts the effect of retirement by about $\frac{1}{3}$ in the first 2 years $(0.0003 * 10 \approx \frac{1}{3} * 0.00867)$.
- But \$10,000,000 is about 5-8 times average *lifetime* earnings (Census synthetic work-life earnings: \$1.2M high-school grads, \$2.1M college).

	Effect of earnings	Effect of retirement
First year of retirement	-0.022	0.566
	(0.012)	(0.315)
First two years of retirement	-0.030^{*}	0.867^{*}
	(0.013)	(0.275)
First three years of retirement	-0.017	1.131^{*}
	(0.022)	(0.271)

100*Point estimates (standard errors, cluster-robust) $^{*}p < 0.05$

Comparison to National Longitudinal Survey of Youth (NLSY97)

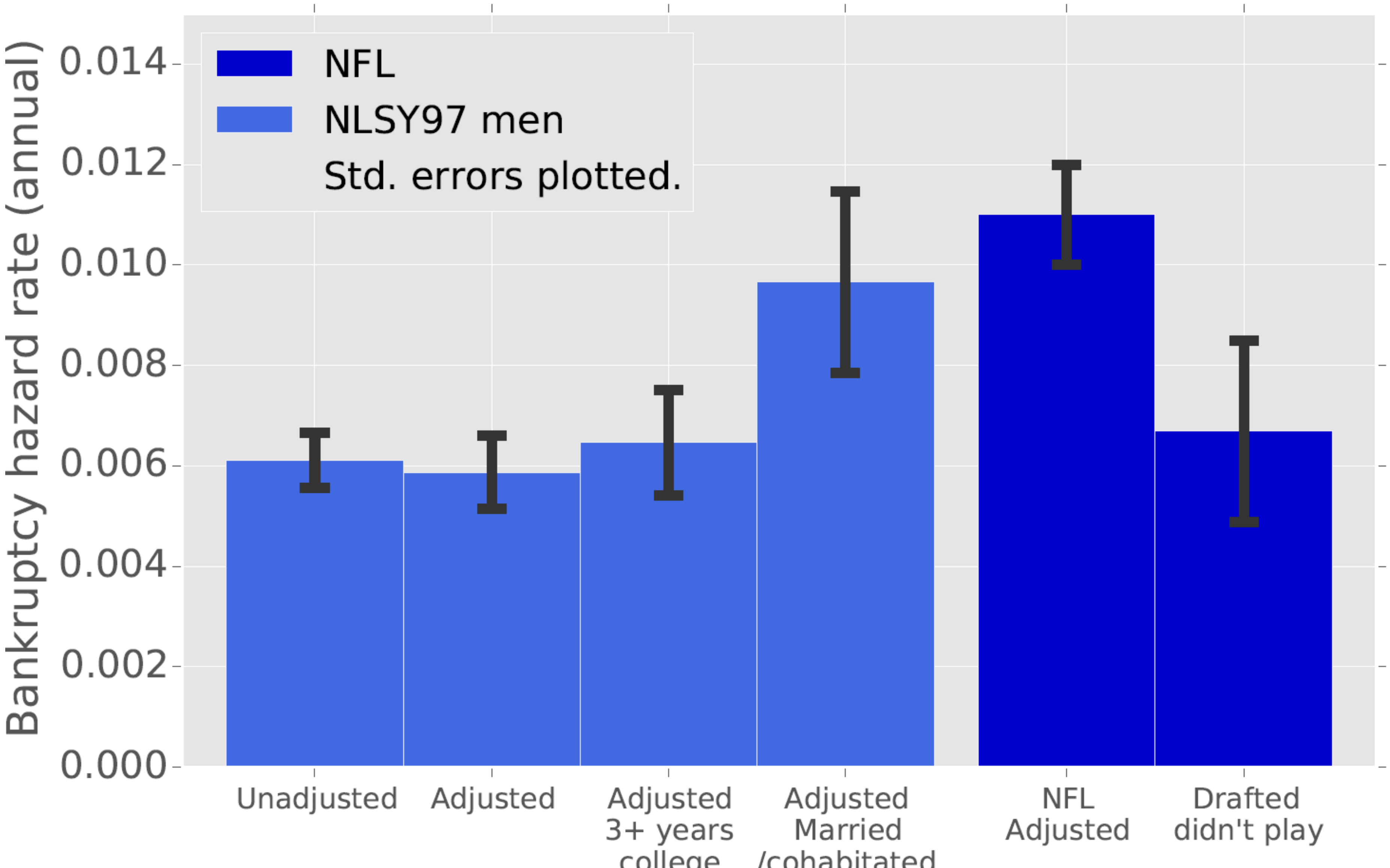
NLSY97 men: Good but not perfect comparison group ⇒ Conservative analysis that tests sensitivity.

- Problem NLSY97 and NFL cohorts barely overlap.
  - Later NLSY cohorts have *less* BK than earlier.
  - Cohorts that turned 18 in 1998, 1999 (1,733 individuals).
  - Use regression to **adjust** for time effects.
- Measurement problem: "Have you or spouse/partner filed for bankruptcy?"
  - Try subgroup that married/cohabitated.

Overall

NFL sample has higher or similar BK hazard depending on NLSY cohort and subgroups used

Comparison to NLSY97



Summary

- NFL players typically earn several million dollars in a few years
- Bankruptcy starts soon after retirement and is not lower than general population of young people (perhaps higher)
- Career earnings and career length provides little protection against bankruptcy

Future: New and bigger paper

- Doubling sample size to over 4,000
- Simulations
- Race / family background
- Peer effects

How much do people know?

1. **"Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?"**

- ❑ More than $102
- ❑ Exactly $102
- ❑ Less than $102
- ❑ Don't know
- ❑ Refuse to answer

2. **"Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy…"**

- ❑ More than today
- ❑ Exactly the same as today
- ❑ Less than today
- ❑ Don`t know
- ❑ Refuse to answer

3. **"Do you think the following statement is true or false? *Buying a single company stock usually provides a safer return than a stock mutual fund*."**

- ❑ True
- ❑ False
- ❑ Don`t know
- ❑ Refuse to answer

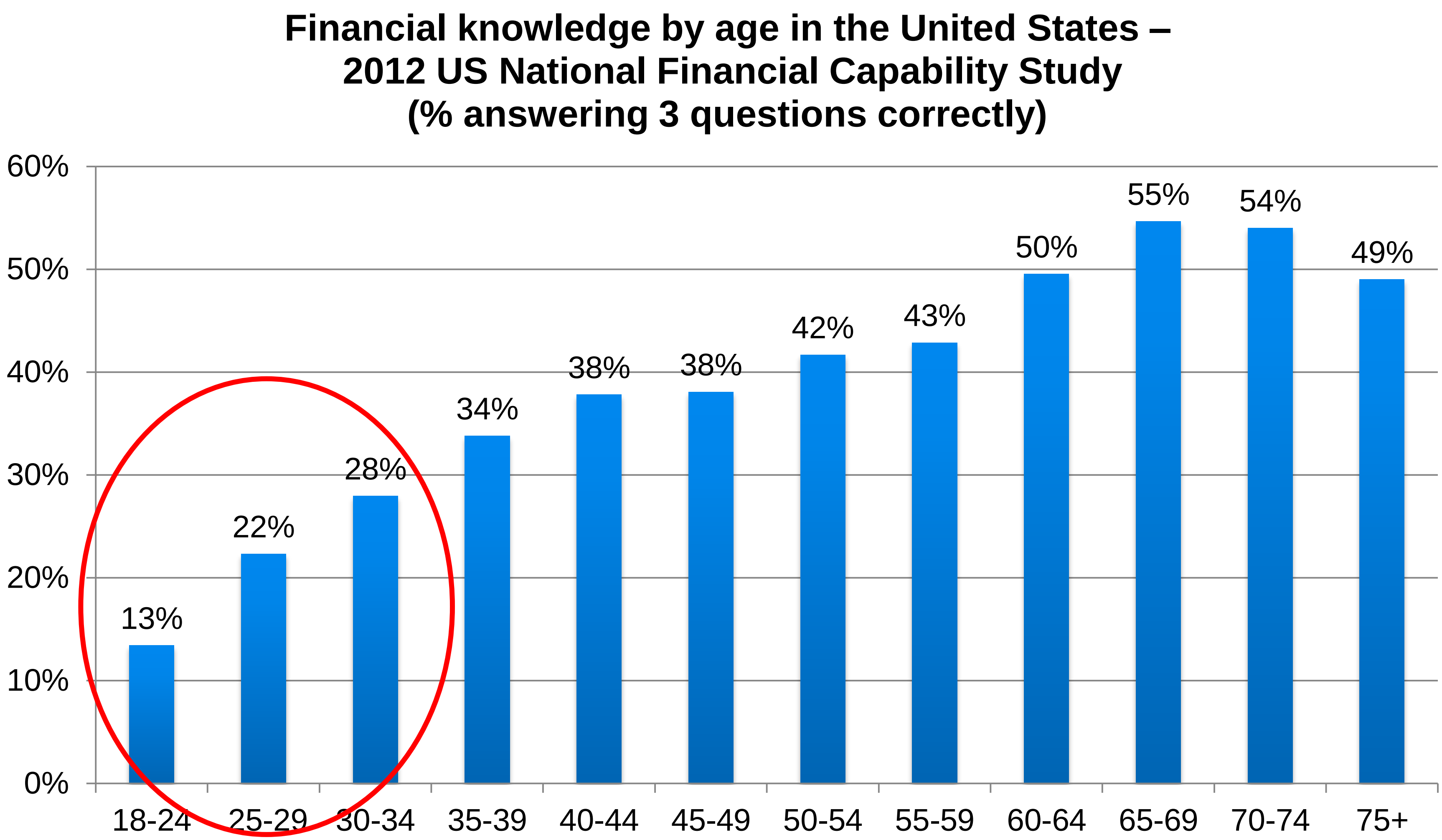
How much do people know? Evidence from the general population

Distribution of responses across the U.S. population (2009 National Financial Capability Survey)

	Responses			
	Correct	*Incorrect*	*DK*	*Refuse*
Interest rate	65%	21%	13%	1%
Inflation	64%	20%	14%	2%
Risk diversif.	52%	13%	34%	1%

NB: Only 30% correctly answer all 3 questions; less than half (46%) got the first two questions right.

Financial knowledge among the young



It pays to be financially literate

Debt and debt management

Investments

Planning and wealth accumulation

New personal finance course at GWSB

Undergraduates, graduate students, and… athletes

- Comment at the end of the course: “Everybody needs this course”

Simple planning and calculation

- Suppose you have accumulated $5 million by the time you retire.
- At an interest rate of 5%, you can consume $250,000 each year without decreasing your capital

THANK YOU!

Carlson / Kim / Camerer / Lusardi