

A Large Retrospective Multivariate Analysis of the Relationship Between **Medical Student Debt and Primary Care Practice** in the United States

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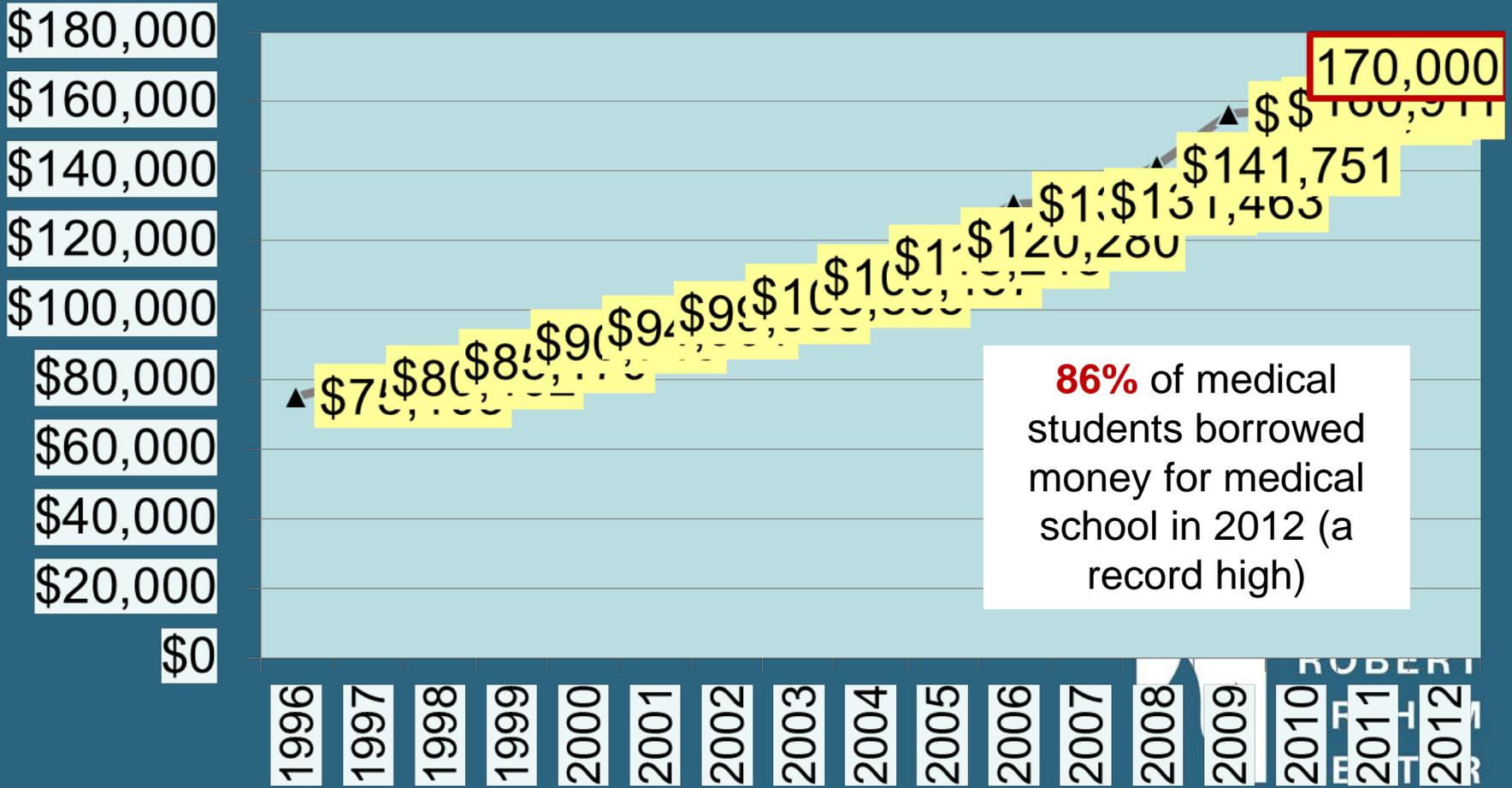


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NAPCRG, 2012

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Mean Educational Debt of Indebted U.S. Medical Students, 1996 - 2012



86% of medical students borrowed money for medical school in 2012 (a record high)

So What?

- No clear linear relationship between debt level and primary care and specialty choice in several good studies
- Some studies have shown that primary care physicians graduate with *more* debt, especially at low levels of debt
- Does debt *really* impact the primary care workforce?



Limitations of Previous Studies

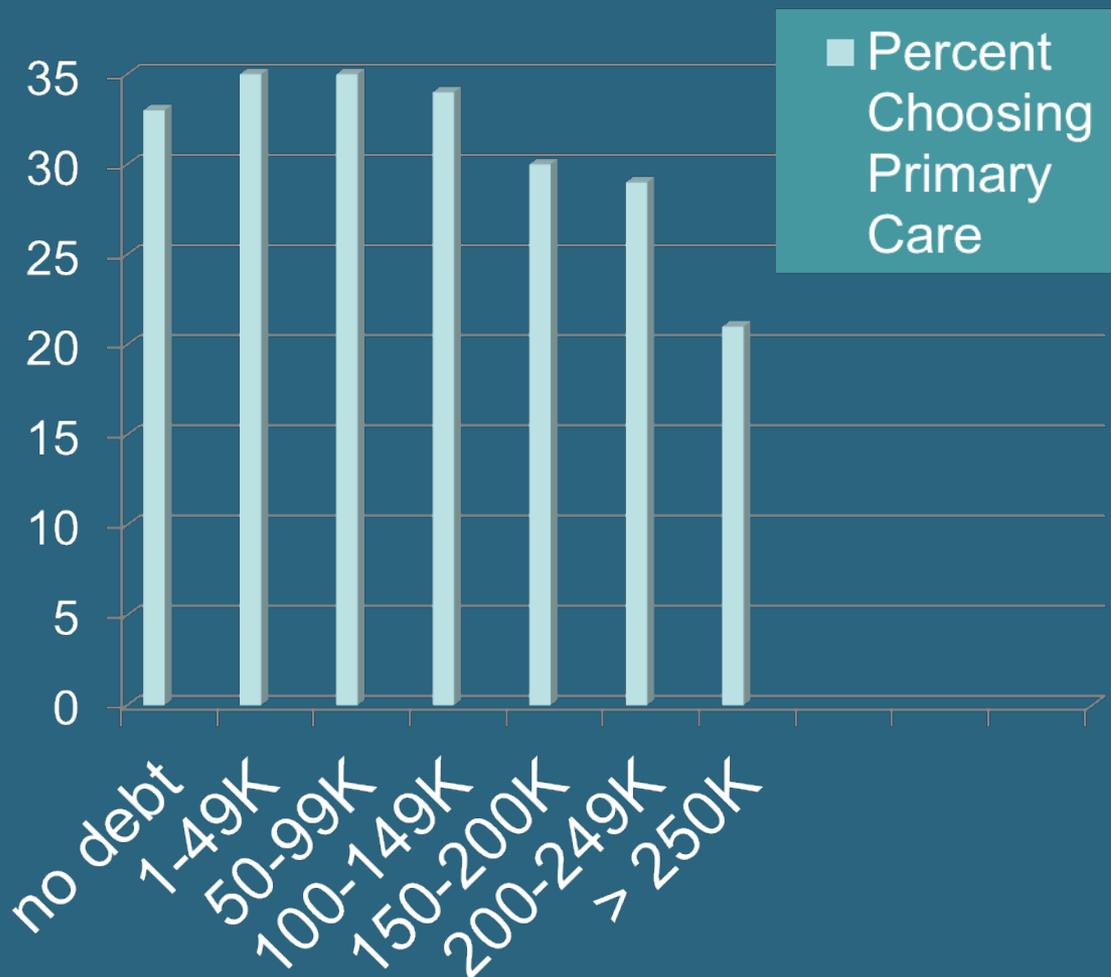
- Medical student socioeconomic status correlates with debt and with primary care specialty choice
 - Students from low income families are more likely to choose primary care
 - Students from low income families have more debt
- In many studies socioeconomic status has not been controlled



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Limitations of Previous Studies



Some studies have found non-linear relationships (Rosenblatt, 2005)

Purpose:

Re-examine the relationship between debt and primary care specialty choice, using:

- large sample size
- control for student socioeconomic status
- non-linear analysis



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Methodology

- Retrospective sample
- All medical students who graduated from allopathic U.S. medical schools between 1988-2000, practicing medicine in the United States in 2010
- Excluded:
 - International medical graduates
 - Osteopathic physicians



Data Sources

- AMA Physician Masterfile
- AAMC Graduate Questionnaire
- National Health Service Corps participant database (HRSA)
- Residency training data
 - Data sources were combined to create a unique analysis file.
 - Data de-identified before analysis.
 - IRB approval from Georgetown University.
 - Dataset used for previous analysis



Specialty and Geographic Distribution of the Physician Workforce:

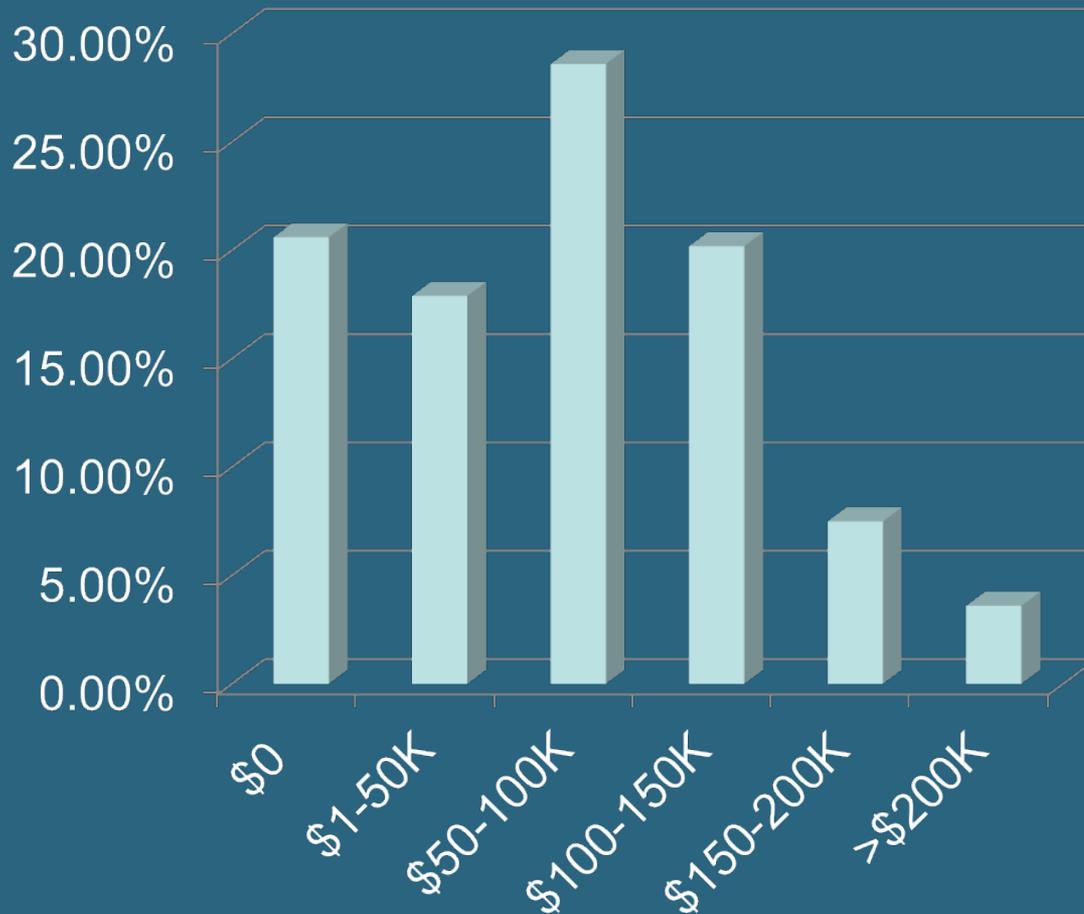
What Influences
Medical Student & Resident
Choices?

Funded by the Josiah Macy, Jr. Foundation



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Study Sample Characteristics



- **N = 136,232**
- 60.2% male
- 62.1% public medical school

Median Debt \$85,000



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Control Variables

- Demographic factors:
 - Rural birthplace (county)
 - Marital status (at med school graduation)
 - Age (at med school graduation)
 - Gender
- National Health Service Corps participation
- Medical school characteristics
 - Rural
 - Community based
- Graduation year
- All dollar amounts adjusted to 2010 dollars



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Loans Used as Proxy Indicators of Medical Student Socioeconomic Status, 1988-2000

Loan	Eligibility
Loans for Disadvantaged Students	Students must demonstrate exceptional financial need or be from a disadvantaged background.
Perkins Loans	Institutions are mandated to give “priority to the neediest students.”
Health Professions Student Loan	Must demonstrate financial need, including parents’ resources.

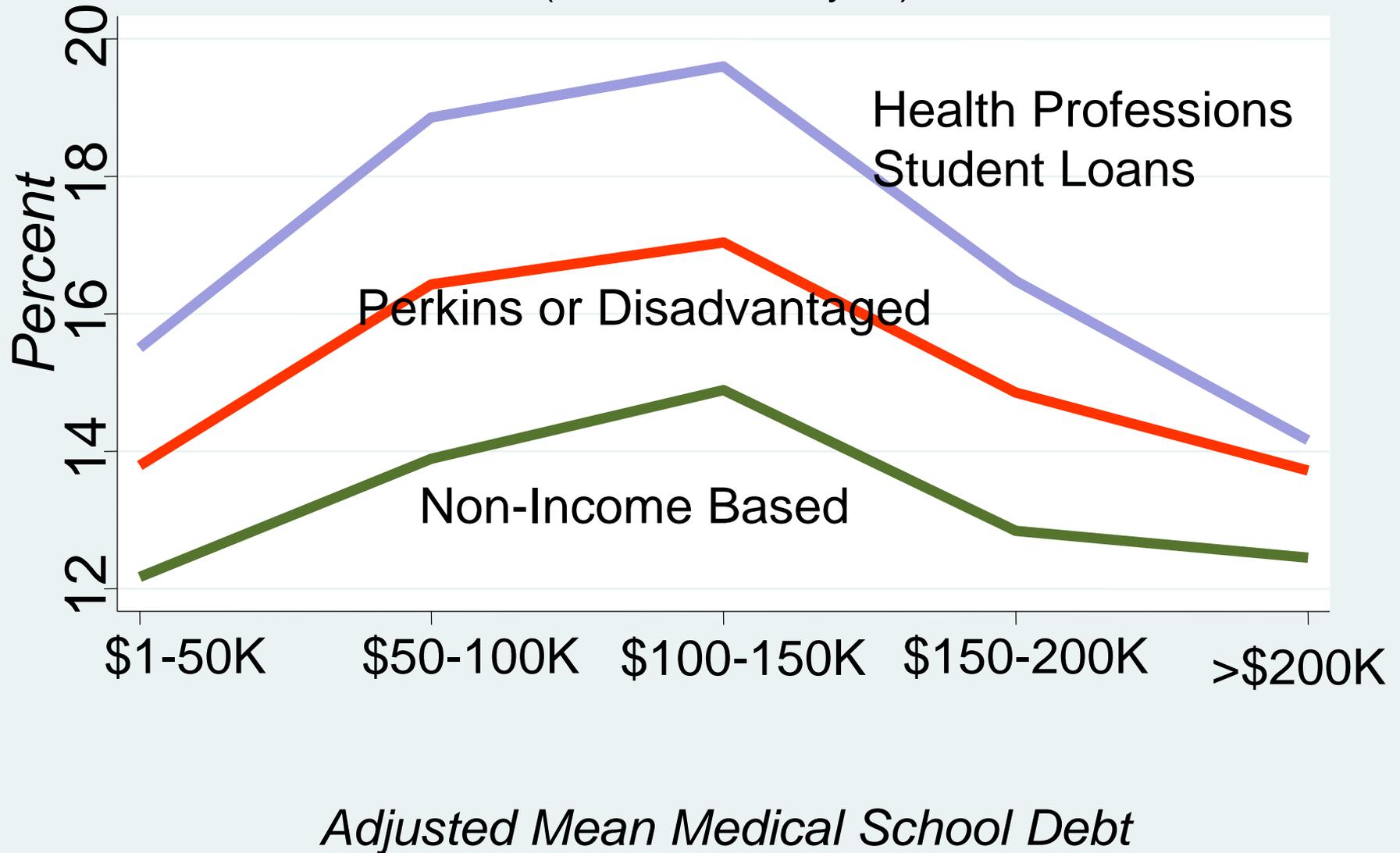


Outcomes

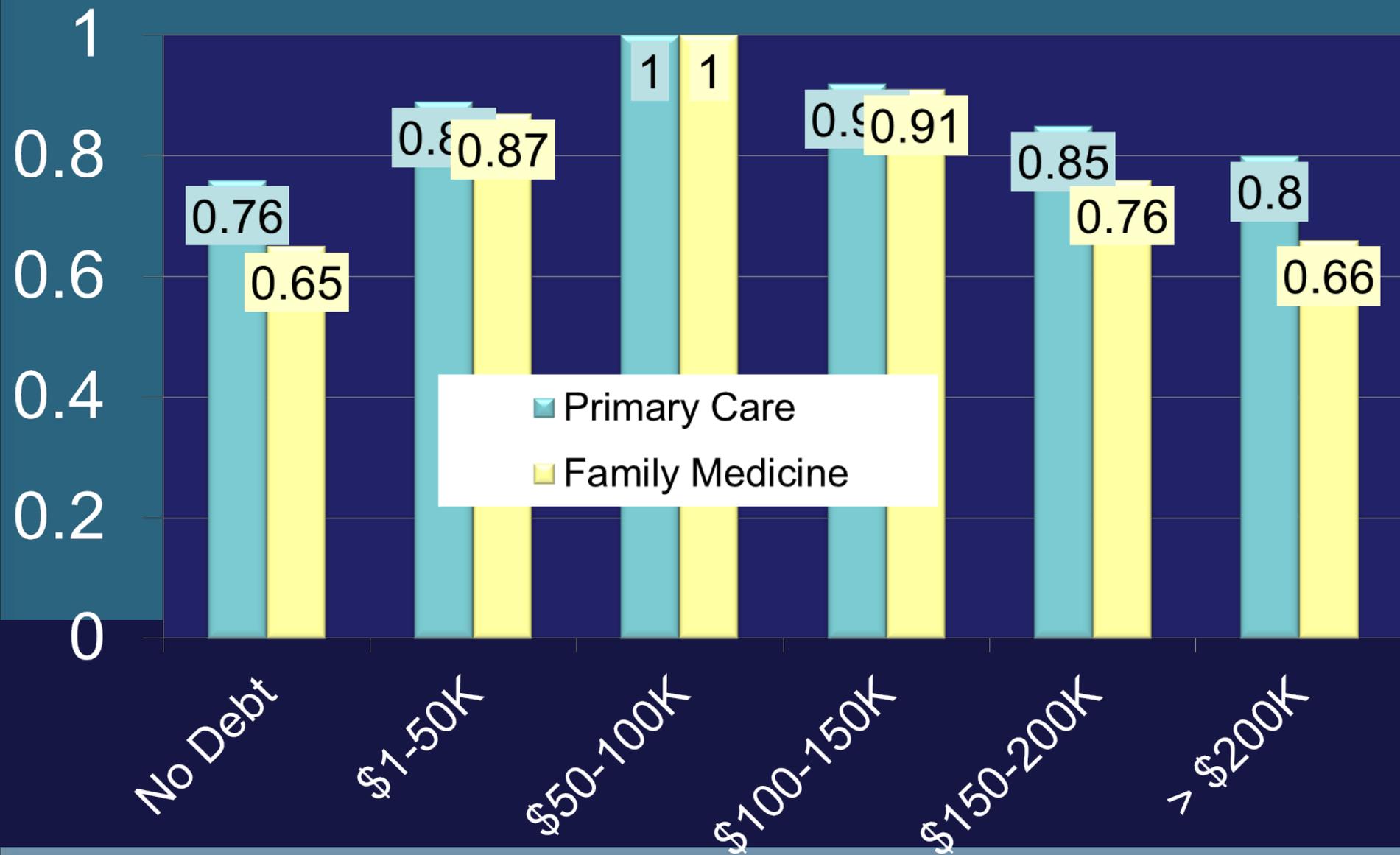
- Family Medicine practice in 2010
- Primary care practice in 2010
 - General practitioners
 - Family physicians
 - General pediatricians
 - General internists
 - Geriatricians



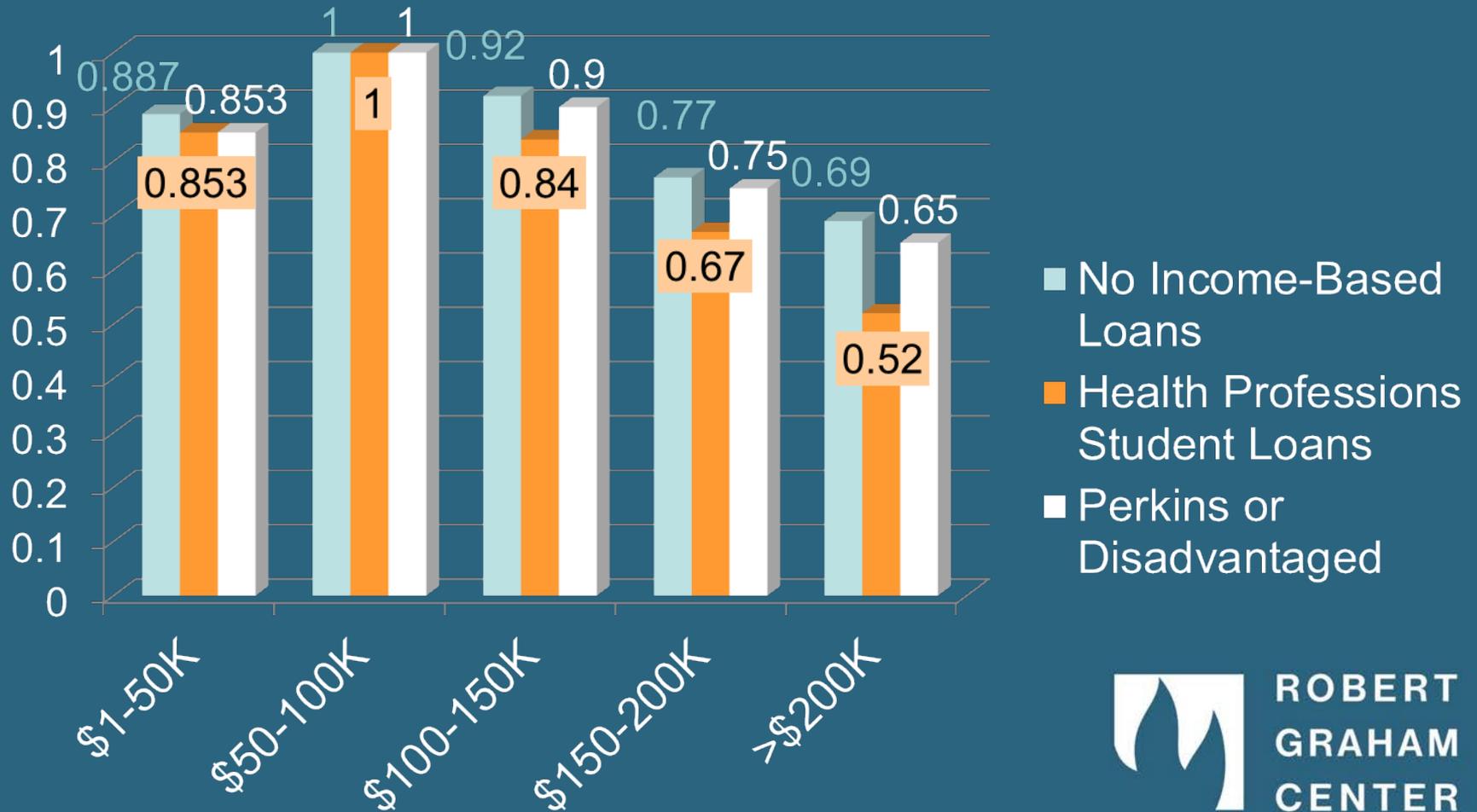
Percent of 1988-2000 Allopathic U.S. Medical Graduates in Family Medicine
(univariate analysis)

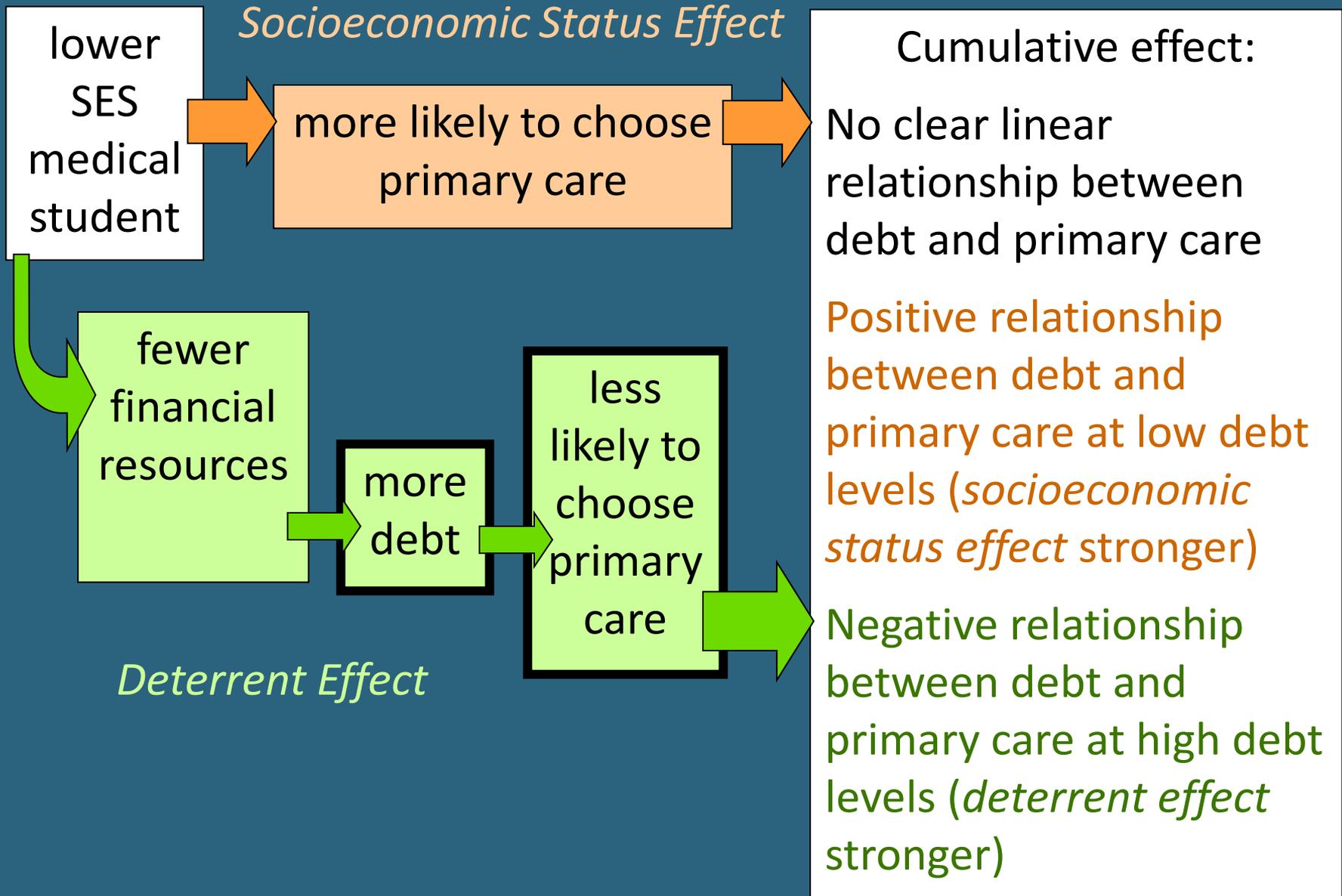


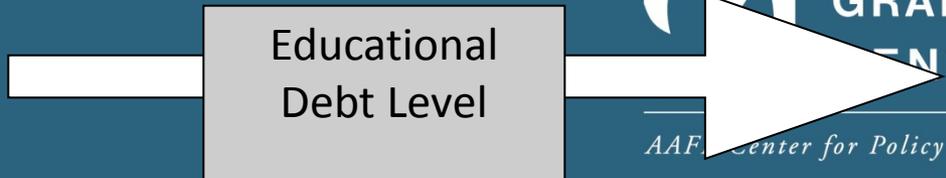
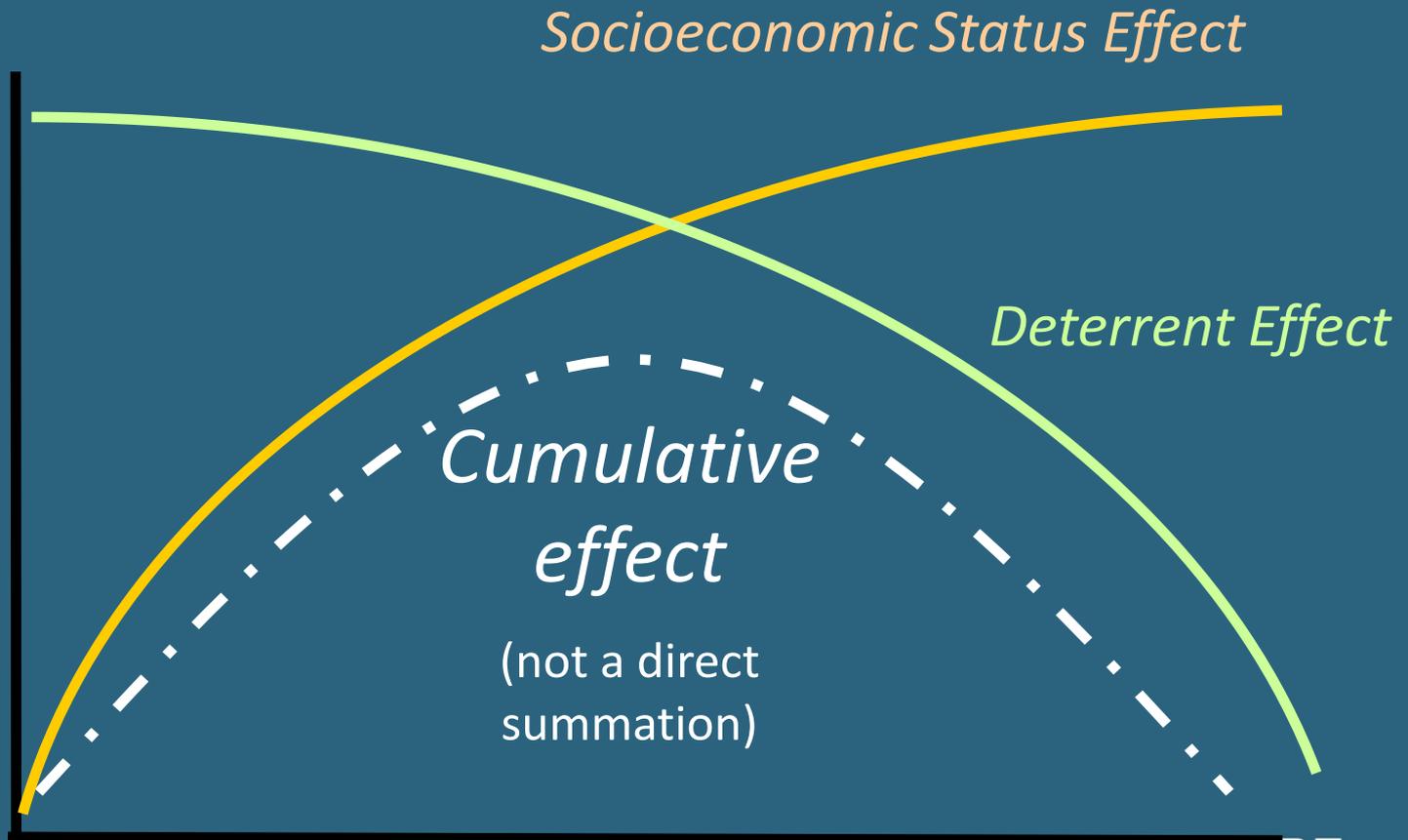
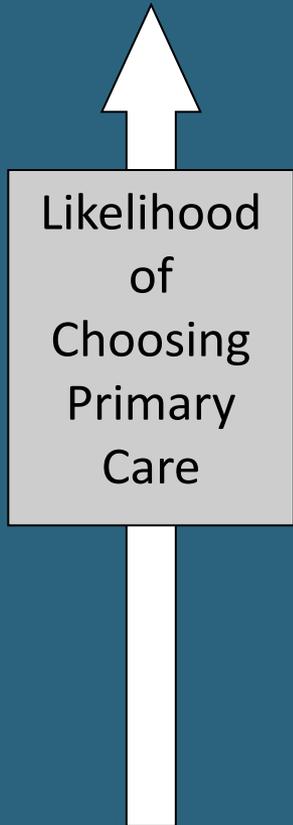
Odds of Primary Care or Family Medicine Practice (all students, multivariate analysis)

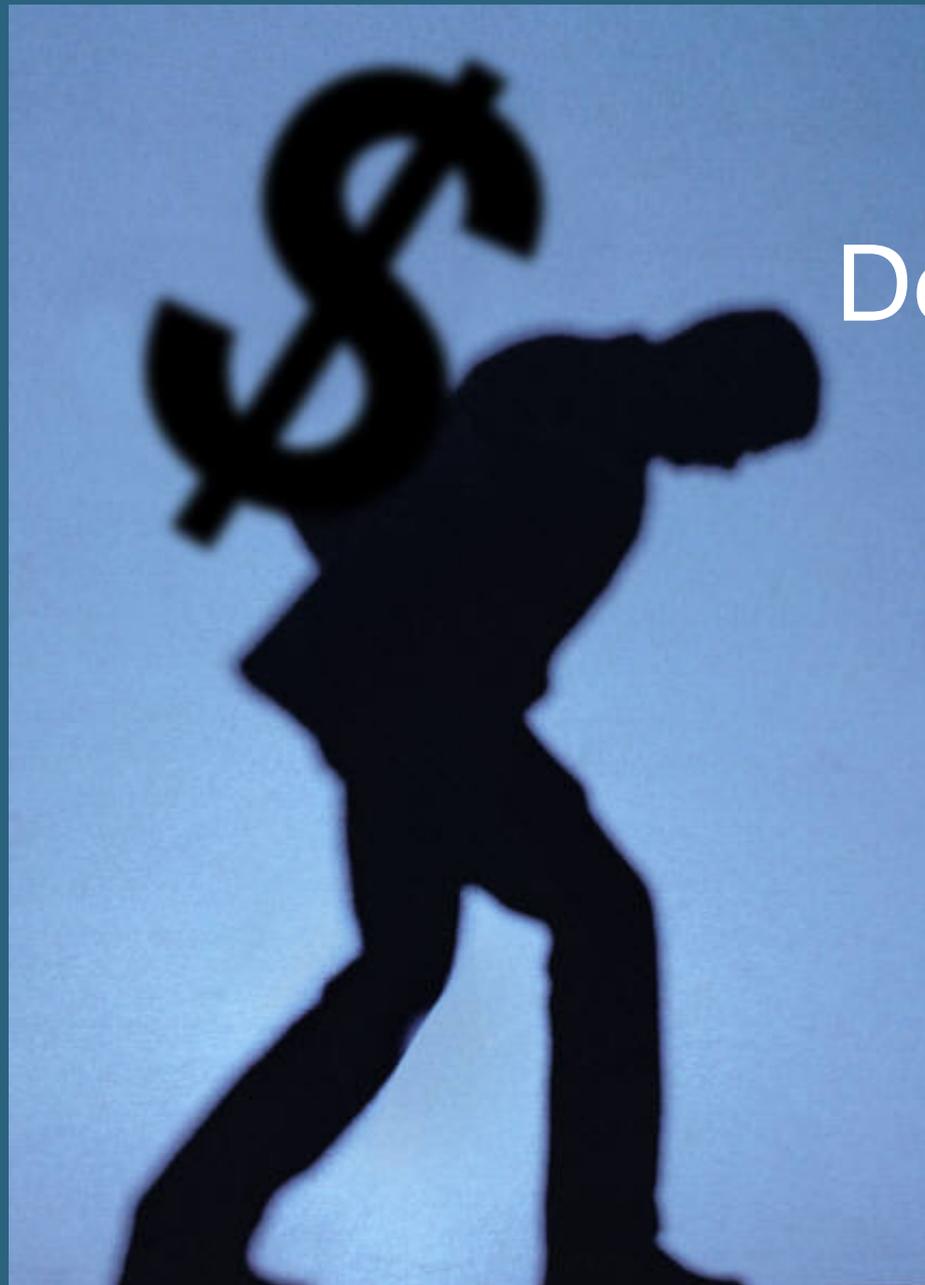


Odds of Family Medicine Practice by Loan Type (multivariate analysis)









Medical Student
Debt is Eroding the
Primary Care
Workforce...
especially Family
Medicine



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Acknowledgements and Disclosures

- Josiah Macy, Jr. Foundation provided financial support for data collection and creation of the dataset
- The information and opinions presented here do not necessarily reflect the views or policy of the American Academy of Family Physicians
- We are grateful to the American Association of Medical Colleges for the use of their data, but the findings and conclusions do not reflect their views or policy.



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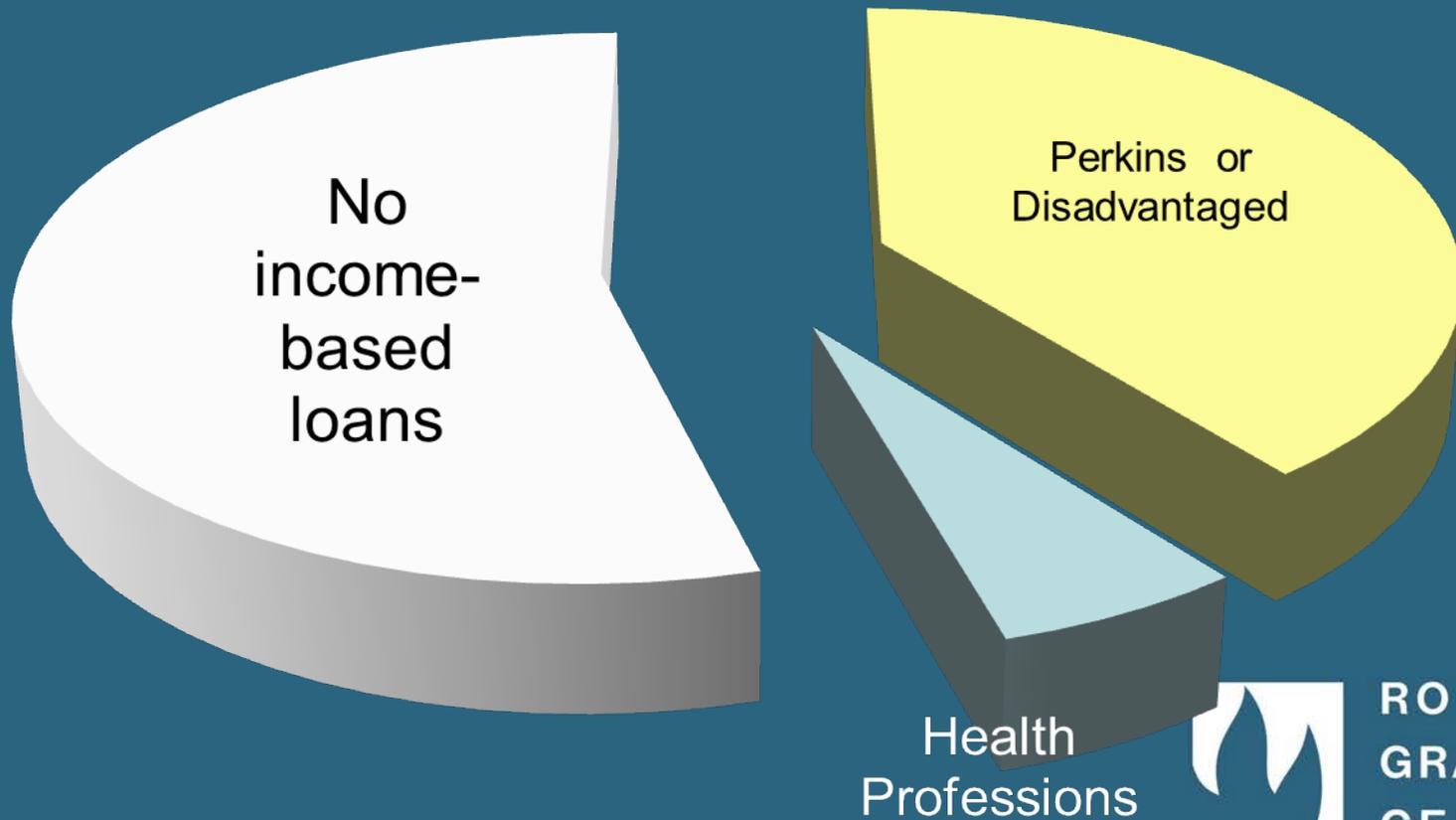
Questions?



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Study Sample Characteristics



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6 Multivariate Models for Each Outcome:

- All students*
- Public school grads*
- Private school grads*
- Each loan grouping
 - Perkins Loans or Loans for Disadvantaged Students
 - Health Professions Student Loans
 - No income-based loans

*Loan Types used as control variables in these models



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