

# EVALUATION OF FINANCIAL EDUCATION INTERVENTIONS

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# Introduction



- A combination of technology, financial liberalization and government/private sector initiatives have made financial products widely available
- An estimated 2 billion people worldwide will enter the formal financial system in the next 20 years (World Bank, 2008)
- Yet, not clear that these people will be equipped to make optimal financial decisions

# Why Sub-Optimal Financial Choices?

- Not a user-friendly system – financial products often complex and difficult to evaluate
  - Calculating interest rates (flat or declining; compounding)
  - Anticipating liquidity needs, inflation, etc.
  - Comparing multi-dimensional products

# Why Sub-Optimal Financial Choices?

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  - Calculating interest rates (flat or declining; compounding)
  - Anticipating liquidity needs, inflation, etc.
  - Comparing multi-dimensional products
- Inter-temporal trade-offs sometimes difficult
  - Self control problems (Ashraf, Karlan and Yin, 2006)
  - Difficulty understanding compound rates (Stango and Zinman, 2009)
  - Other behavioral concerns: procrastination, “channel” factors

# Can Financial Education Help?

- Compelling survey evidence from the developed world shows strong positive correlation. HHs with low financial education:
  - Tend not to plan for retirement (Lusardi and Mitchell, 2007a)
  - Borrow at higher interest rates (Lusardi and Tufano, 2008; Stango and Zinman, 2006)
  - Acquire fewer assets (Lusardi and Mitchell, 2007b)
  - Participate less in the formal financial system (Alessie, Lusardi and van Rooij, 2007; Hogarth and O'Donnell, 1999).
- Evidence from the developing world shows similar correlations (Cole, Sampson and Zia, 2011; Klapper and Lusardi, 2012)

# Global Interest in Financial Education

- **US:** President's Advisory Council on Financial Literacy
- **Brazil:** National Strategy for Financial Education
- **India:** RBI has established Financial Literacy and Credit Counseling Centers
- International and Private organizations are also pushing heavily for financial literacy programs:
  - ▣ **World Bank:** \$15 Million Russia Financial Literacy Trust Fund
  - ▣ **OECD:** Principles on financial literacy
  - ▣ **Citi Foundation:** 10-year \$200 Million global program on financial education, operating in 65 countries

# But is there a *Causal* Relationship?

- Survey-based inference is difficult – unobserved factors
- Observational evidence mixed – Bernheim, *et. al.* (2003) find some effect, Cole and Shastri (2010) find no effect
- Experimental evidence is not very strong:
  - ▣ Modest effects on savings accounts in Indonesia (Cole, *et al.*, 2011)
  - ▣ Effects tend to dissipate over time (Fernandes *et al.*, 2013)
  - ▣ Interest and participation in adult financial education workshops tends to be low (Bruhn *et al.*, 2013)

# Challenges for Financial Education Evaluation

- Financial education may not be effective
  - ▣ Behaviors difficult to change
  - ▣ Generic courses may not be relevant, interesting or informative to individuals
  - ▣ Skilled and engaging educators difficult to find
  - ▣ Difficult to teach adults anything
  
- Measuring change may be difficult
  - ▣ Basic surveys may not pick-up changes
  - ▣ Administrative data typically not available
  - ▣ Lack of statistical power to detect small changes



# The Next Wave of Evaluations

- New avenues of financial education evaluation:
  - Innovative delivery channels
  - Incorporating behavioral constraints
  - Targeting “teachable moments”
  - Combination of the above
  - Targeting youth

# Innovative Delivery Channels

- Video-based delivery is cost effective and improves financial literacy (Carpena et al., 2013)
- Mobile reminders through cell phone text messages improve savings and loan repayment (Karlan et al., 2012)
- Debt management messages in a popular soap opera leads to more prudent borrowing choices (Berg and Zia, 2013)

# Incorporating Behavioral Constraints

- Reminders to repay loans on time and to save are effective (Karlan, et al., 2012)
- Framing and disclosure of adding-up effect of fees and interest reduces use of high interest loans (Bertrand and Morse, 2011)
- Harnessing emotional connections to improve financial decisions (Berg and Zia, 2013)

# Targeting Teachable Moments

- Perhaps financial education can be most effective when the lessons can be implemented and used immediately
- A clear example of this is the time of migration
- Recent study on Indonesian migrant workers finds significant positive effects on savings (Doi, McKenzie, and Zia, 2013)

# Combination Therapy

- Video-based financial education (Carpena et al., 2013) delivered with:
  - ▣ Higher incentives to learn through pay for performance
  - ▣ Goal setting through simple calendars
  - ▣ Individualized counseling

# Combination Therapy

- Video-based financial education (Carpena et al., 2013) delivered with:
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  - ▣ Individualized counseling
- Simple add-ons led to significant improvements in financial behavior

# Targeting Youth

- Financial education in Brazilian high schools is effective in improving some financial outcomes (Bruhn, et al., 2016):
  - Improvements in financial proficiency
  - Improvements in savings rates
  - Positive “trickle-up” effects on parents
  - Improvements in forward looking financial preferences

# Methodology for Brazil Study

- Evaluation of the financial education program in 868 schools in 6 states in Brazil
- Schools that were interested in participating in the pilot were randomly assigned to
  - ▣ Treatment group received financial education text books for free AND receives teacher training for how to implement the material
  - ▣ Control group
- Half of the parents in treatment schools were also randomly assigned to parent financial education workshop in schools



# Pilot Sample Size

- Total of 868 schools in six states (432 treatment and 436 control schools)

State	Number of schools
São Paulo	362
Rio de Janeiro	265
Ceará	119
Distrito Federal	59
Tocantins	34
Minas Gerais	29

- Approximately 20,000 students and parents (one class per school)

# Timeline

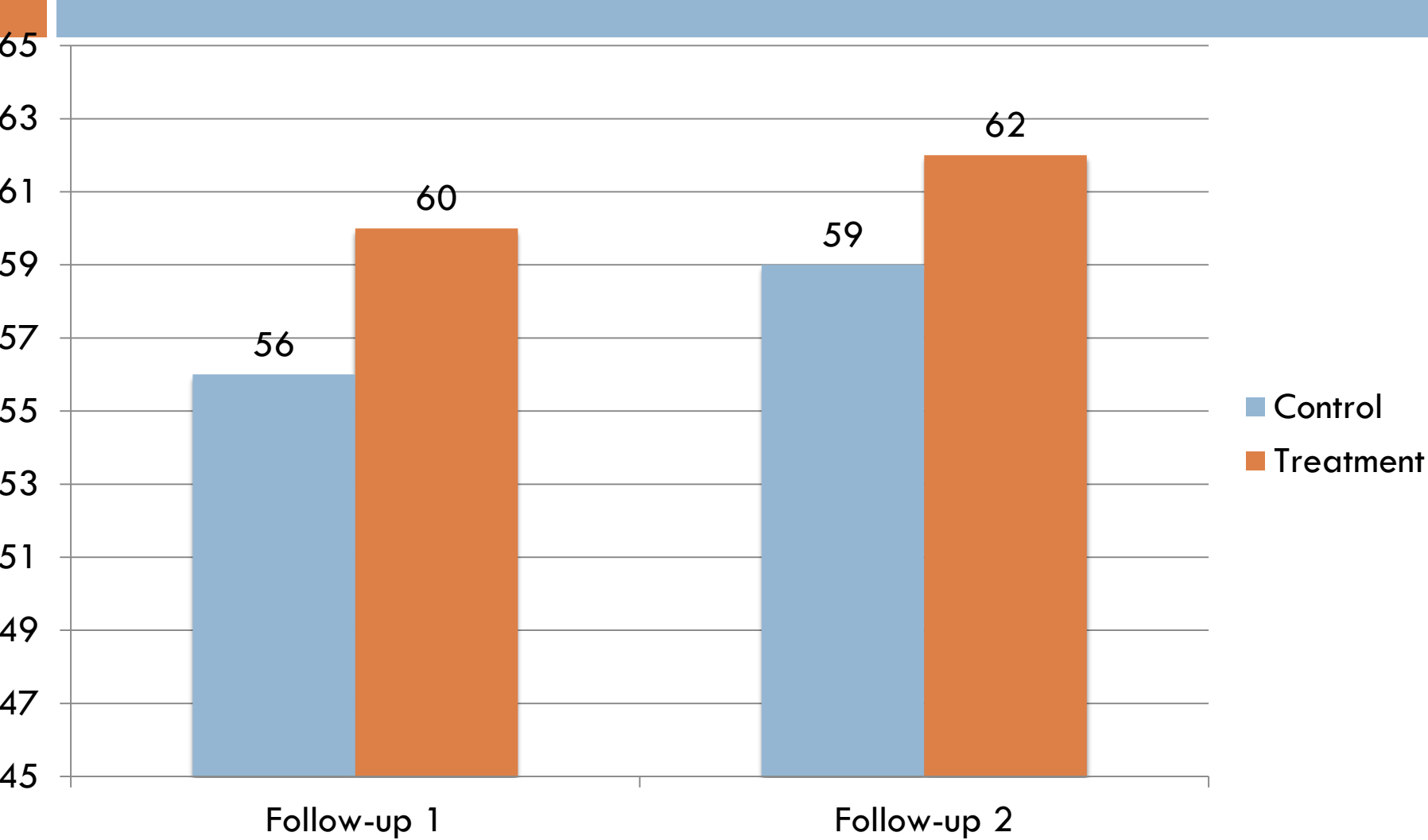
Time	Activity
April – May 2010	Compiled list of interested schools with help of State Ministries of Education; Randomly divided schools into treatment and control group
May – July 2010	Teacher training
Early August 2010	Baseline survey
Mid August 2010	Teachers started teaching financial education material, continuing until November 2011
Late November 2010	First follow-up survey
Summer/Fall 2011	Parent workshops
November 2011	Second follow-up survey

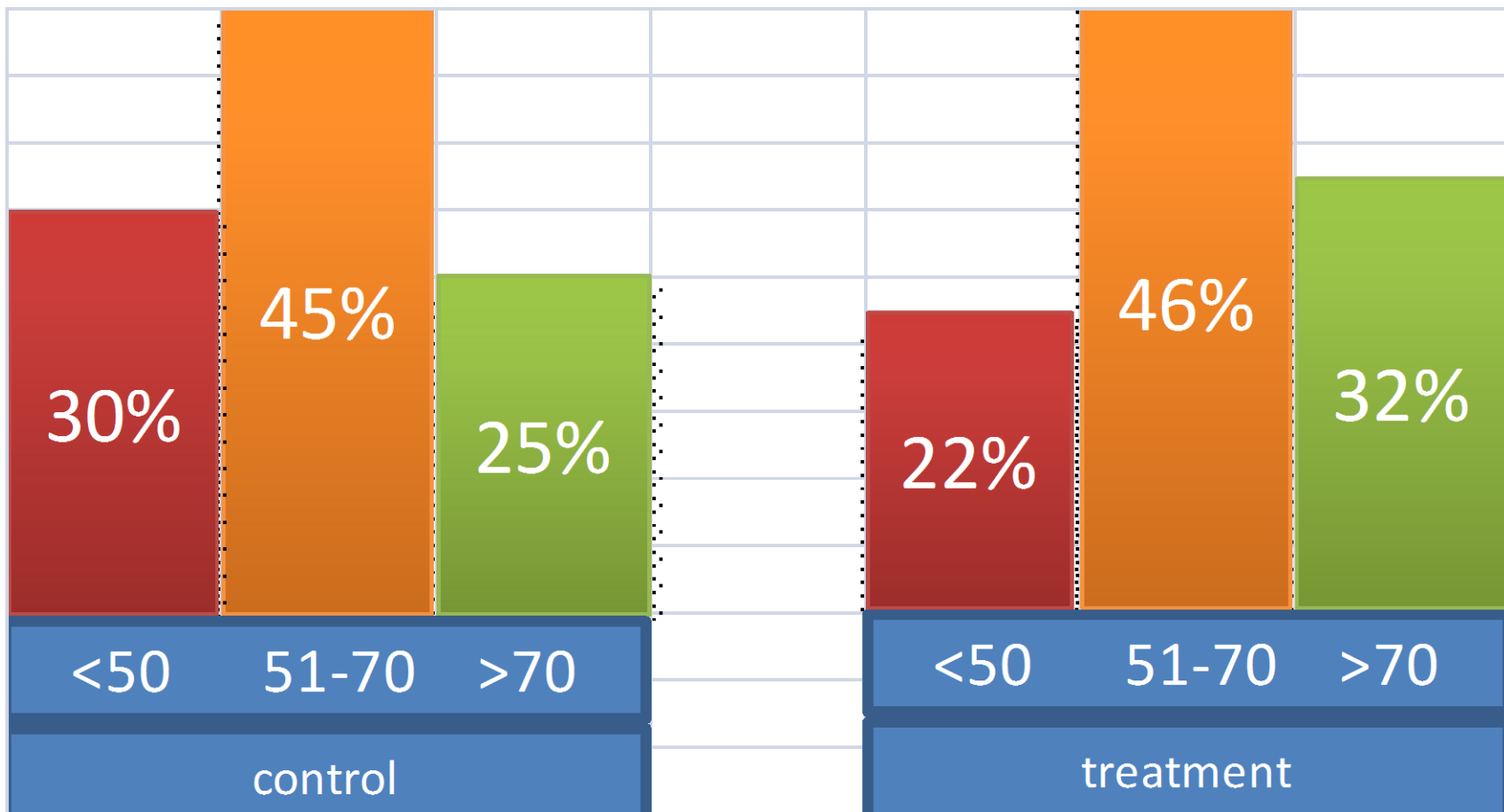
# Financial Knowledge

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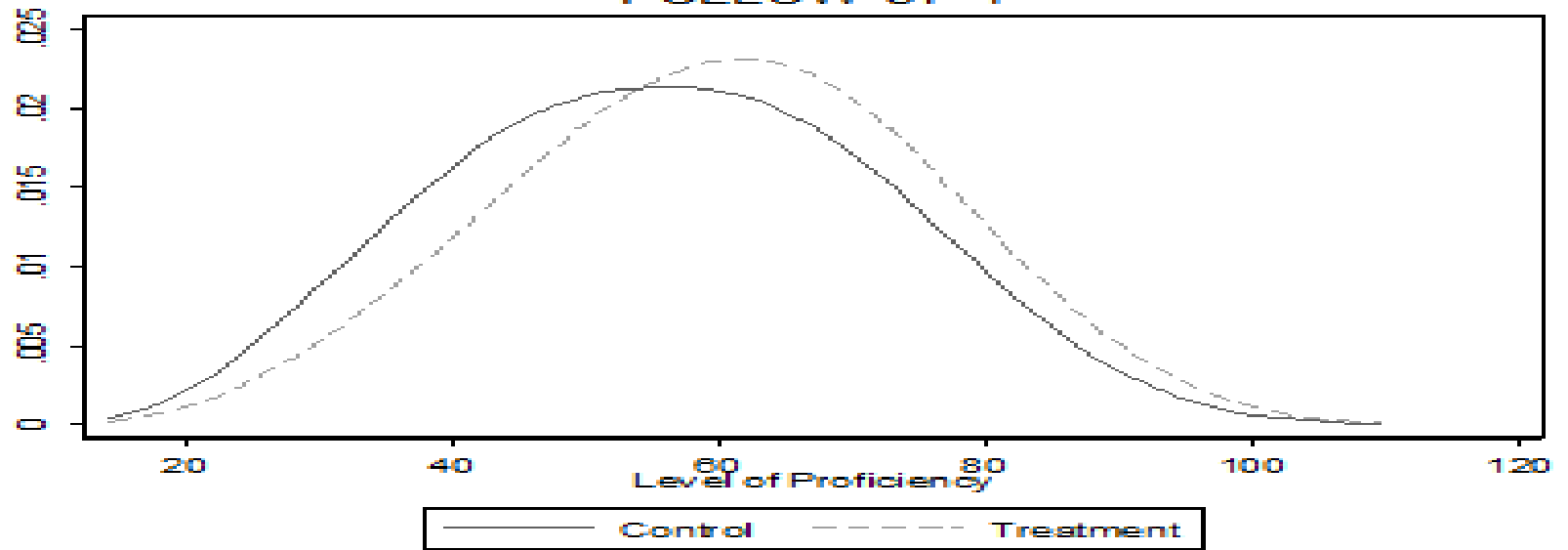
- Higher financial proficiency
- Positive distribution shift

# Positive Impact on Financial Proficiency

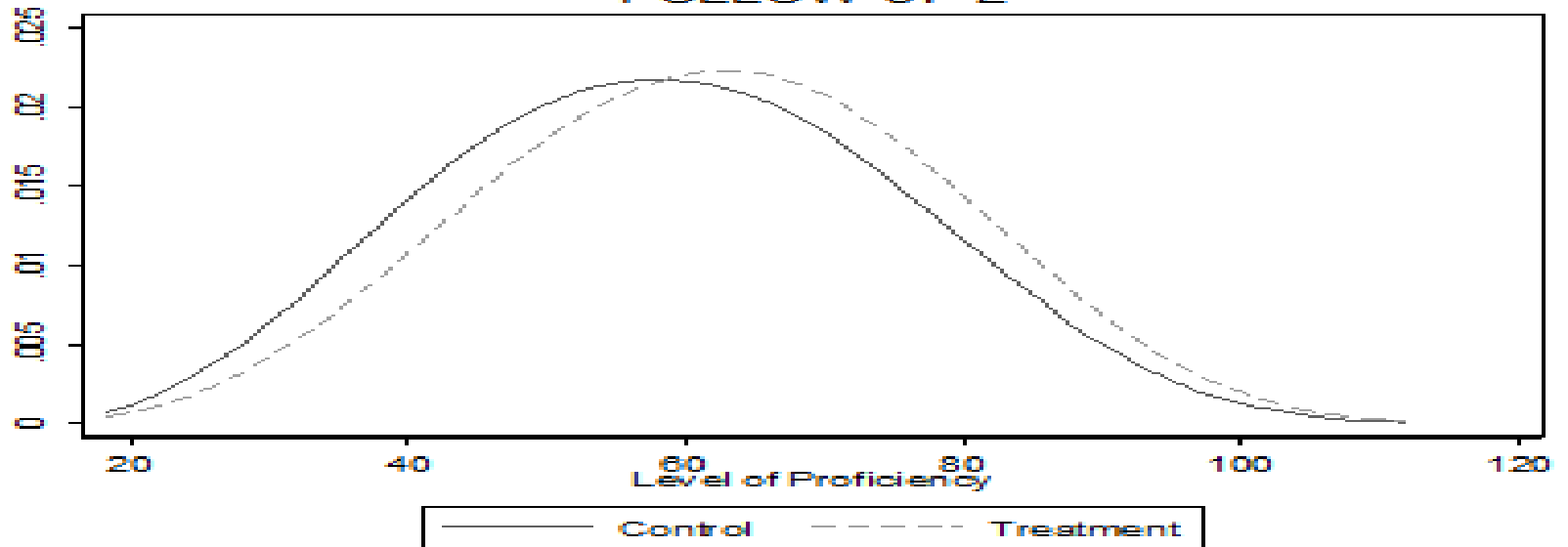




FOLLOW-UP 1



FOLLOW-UP 2

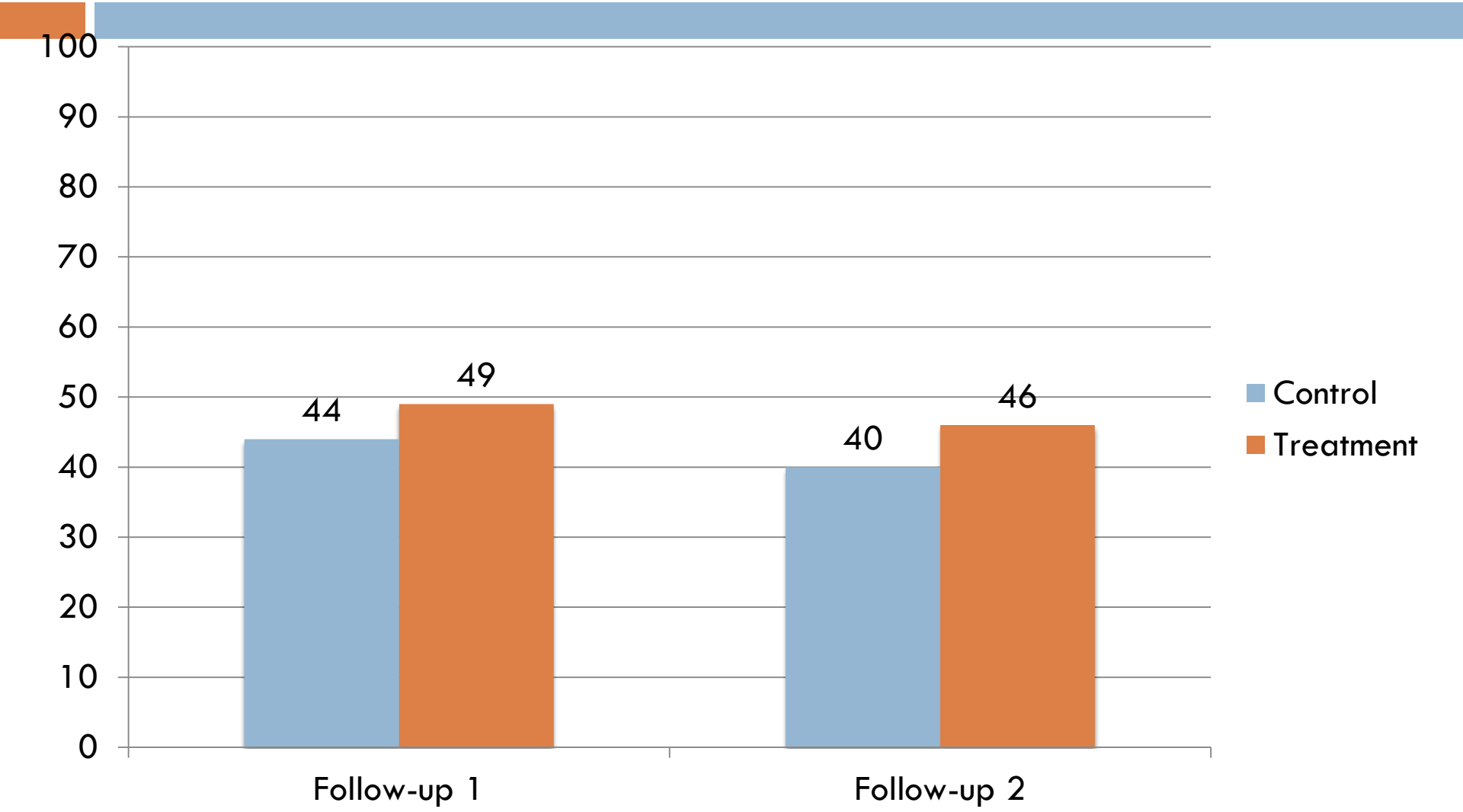


# Saving Behavior

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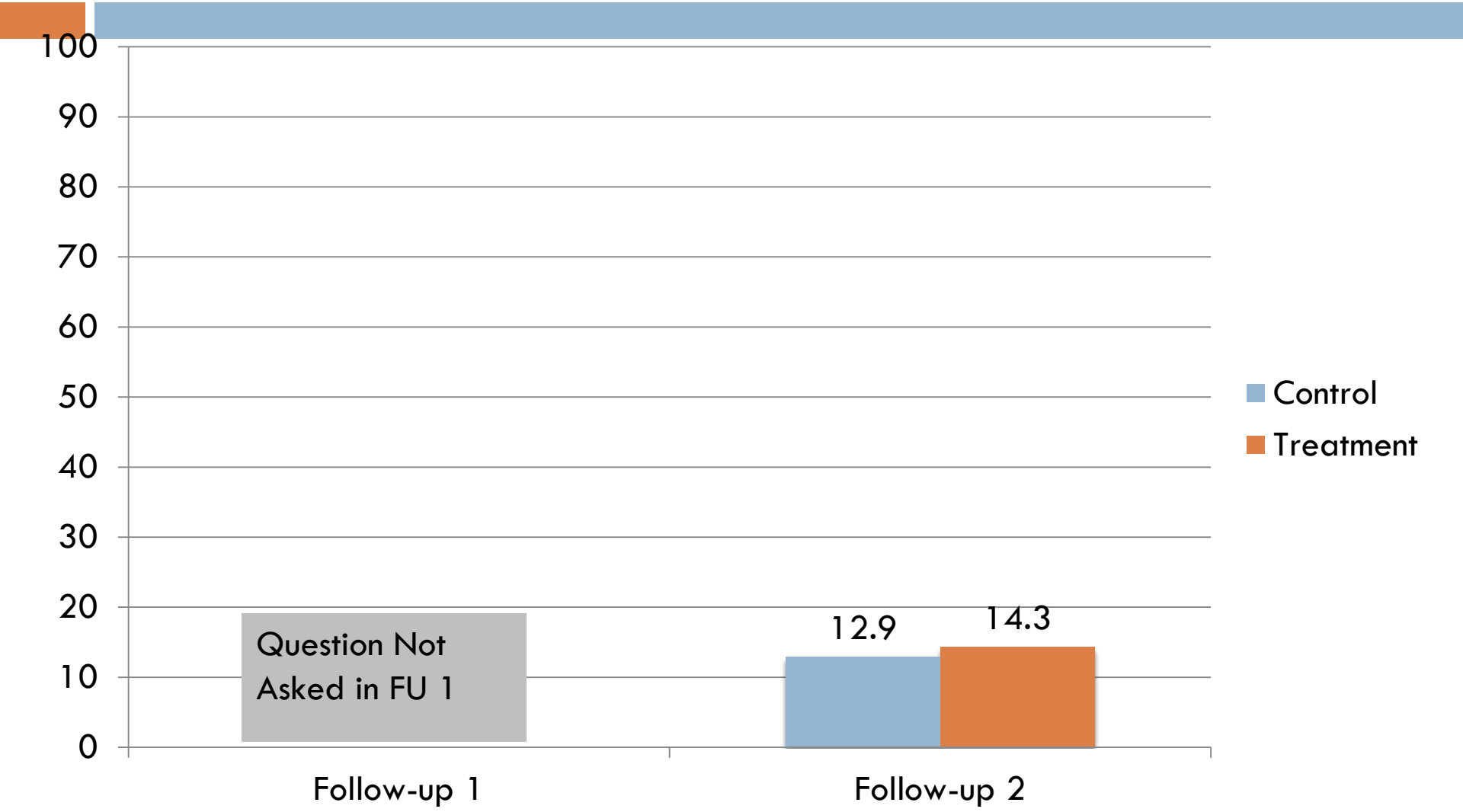
- More savers
- More savings (1.4 percentage point increase)

# Percentage of Students who Save





# Percentage of Income Saved

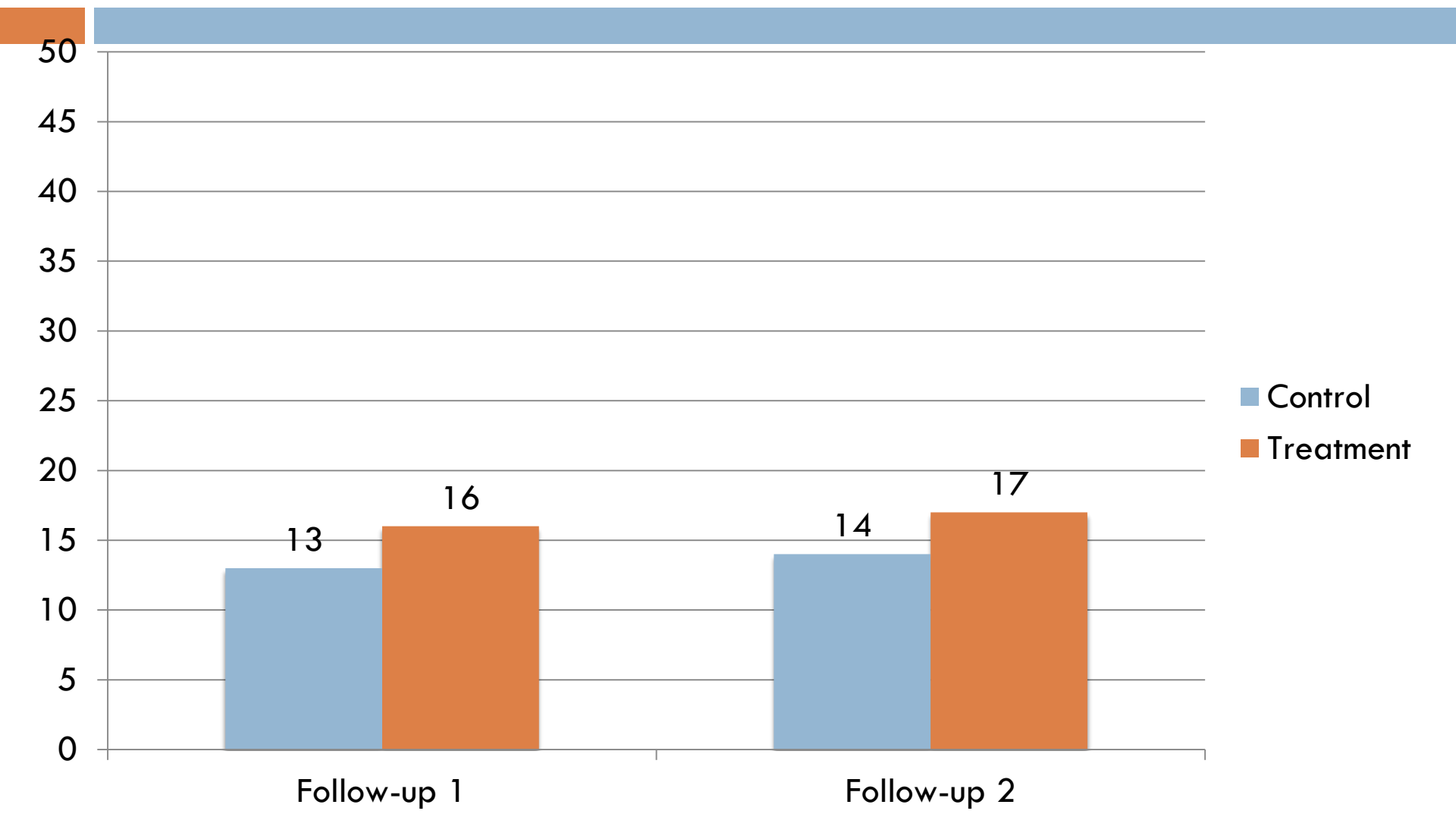


# Students' Budgeting

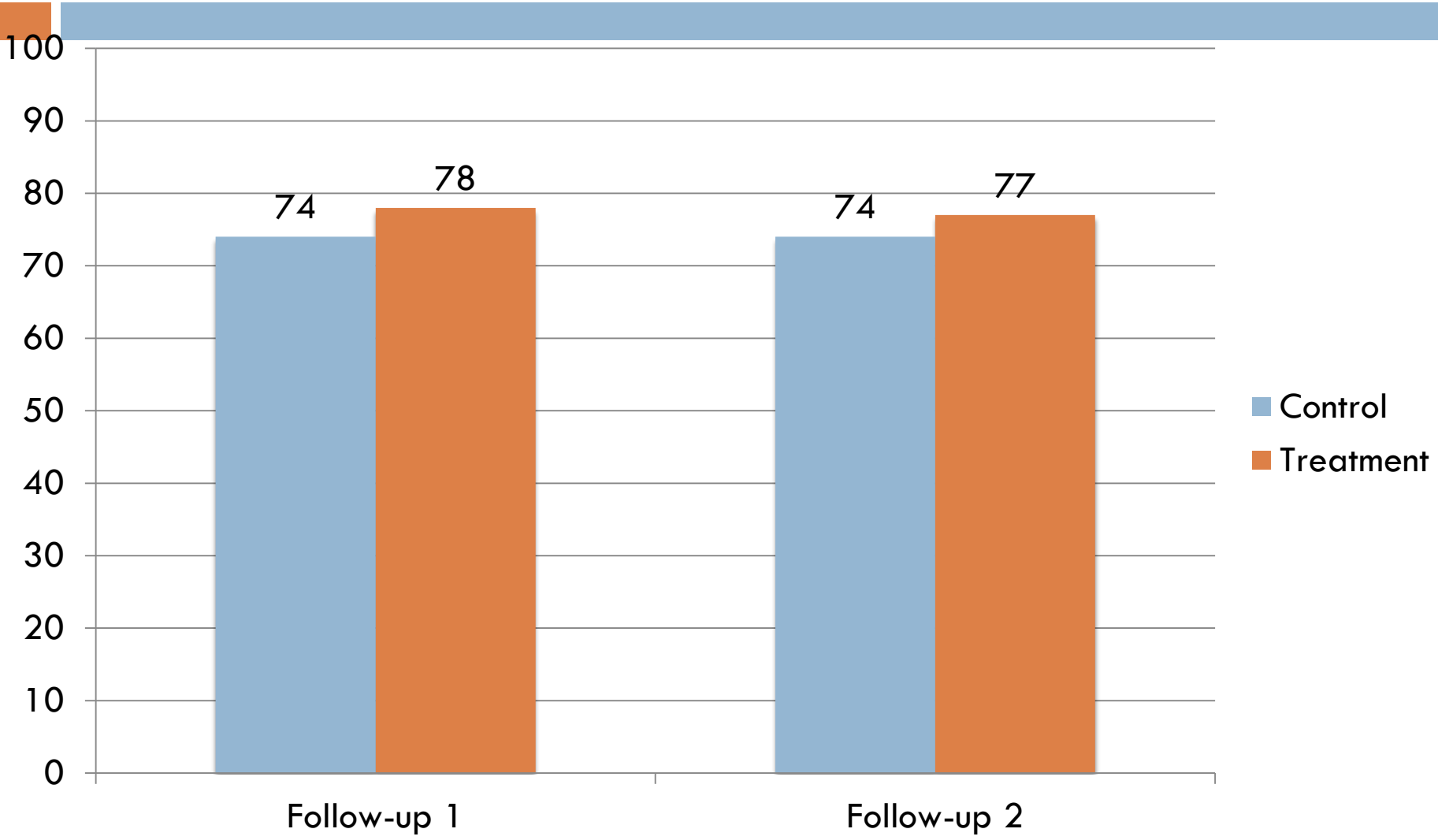


- More treated students make a list of expenses every month
- More treated students negotiate the price and/or payment method

# Percentage of Student who Make a List of Expenses



# Percentage of Students who Negotiate Prices and/or Payment Methods



# Attitudes towards Future Behavior

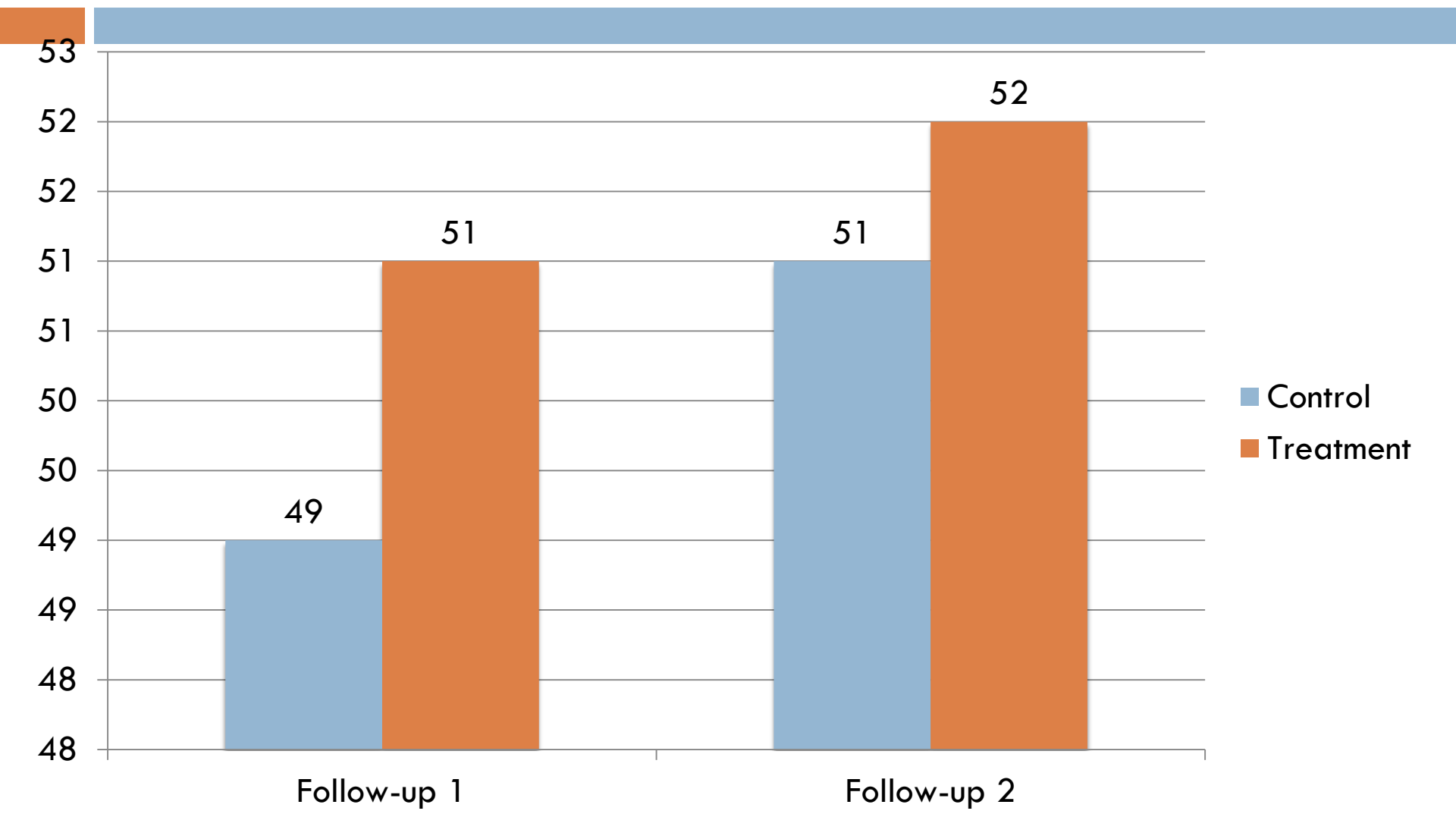
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- More financial autonomy
- Greater intention to save

# Student Financial Autonomy

- The index is based on three dimensions of autonomy
  - Reflexive Autonomy e.g. “ I like to think carefully before deciding to buy something”
  - Emotional Autonomy e.g. “I am prepared to talk about money with my parents”
  - Functional Autonomy e.g. “I always try to save some money to do things I really like”

# Financial Autonomy Index

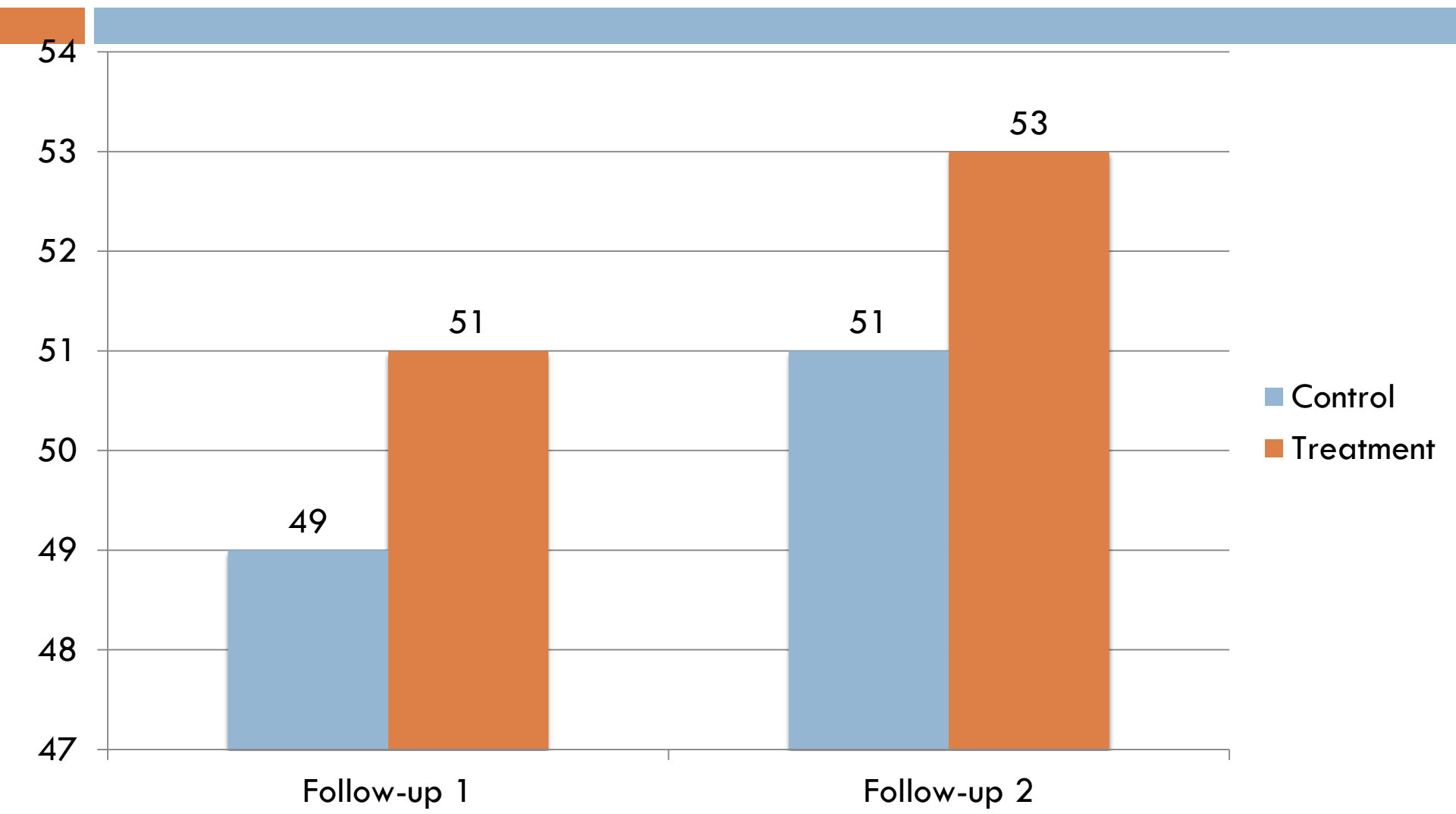


# Student Intention to Save

- Intention to save index is based on three components
  - Attitudes towards behavior e.g. “In my opinion, saving money every month extremely beneficial
  - Subjective norms and expectations e.g. “My family has the habit of saving money every month”
  - Perception of capacity of controlling one’s behavior e.g. “I believe I can save a little money every month”



# Intention to Save Index



# Spill-over Effects of School Program on Parents

- Students' financial education material includes exercises to be completed with parents (e.g. make a household budget)
- Positive impacts on parental financial **knowledge** and **behavior**
  - ▣ increase in parental financial knowledge
  - ▣ increase in discussing financial matters with their children
  - ▣ increase in making a household budget

# Cautionary Note: Worse Spending Behavior

- Students more likely to purchase items on expensive credit
- Students more likely to be behind on payments
- Longer follow-up needed to assess complete welfare effect

# Conclusion

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- Financial education is not a silver bullet
- However, it can be an effective tool when delivered at the right time, to the right audience, through the right channels, and in combination with other interventions
- More research needed on longer-term effects