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What Youth Financial Literacy Needs to Solve
Recent Findings in Behavioral Economics, Finance, and Marketing

What Youth Financial Literacy Needs to Solve

Undersaving

- Procrastination and self-control
 - Field experiment in U.S.
 - Field experiment in the Philippines

Overspending

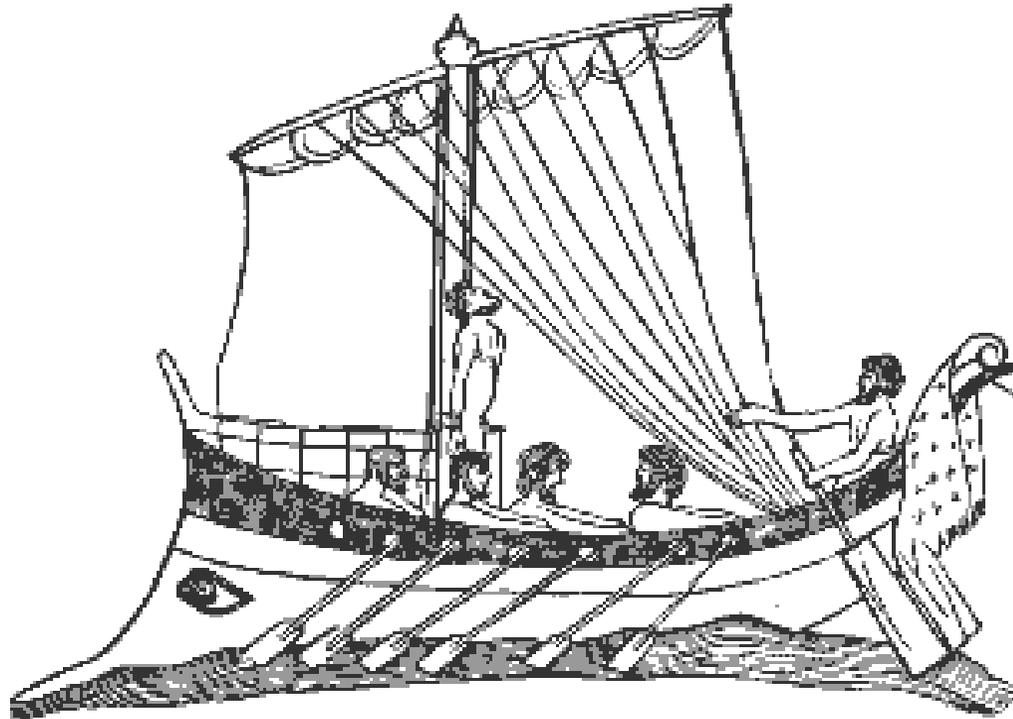
- Credit and overspending
 - Laboratory experiment in U.S.
 - Field study in Hong Kong
- Money illusion and perceived liquidity
 - Laboratory experiment in Hong Kong

Undersaving

Procrastination and Self-Control

(from: Ariely and Wertenbroch 2002, *Psychological Science*)

“I’ll start saving tomorrow... or maybe the day after...”



Procrastination and Self-Control

(from: Ariely and Wertenbroch 2002, *Psychological Science*)

Mitigate procrastination by self-imposing deadlines:

- 28 Harvard and M.I.T. undergraduates
- Must announce at beginning of semester when to turn in each of three term papers
- Free to choose any time between first and last week of class
- Penalty of 1% of course grade for every day delay in missing any of three self-imposed deadlines

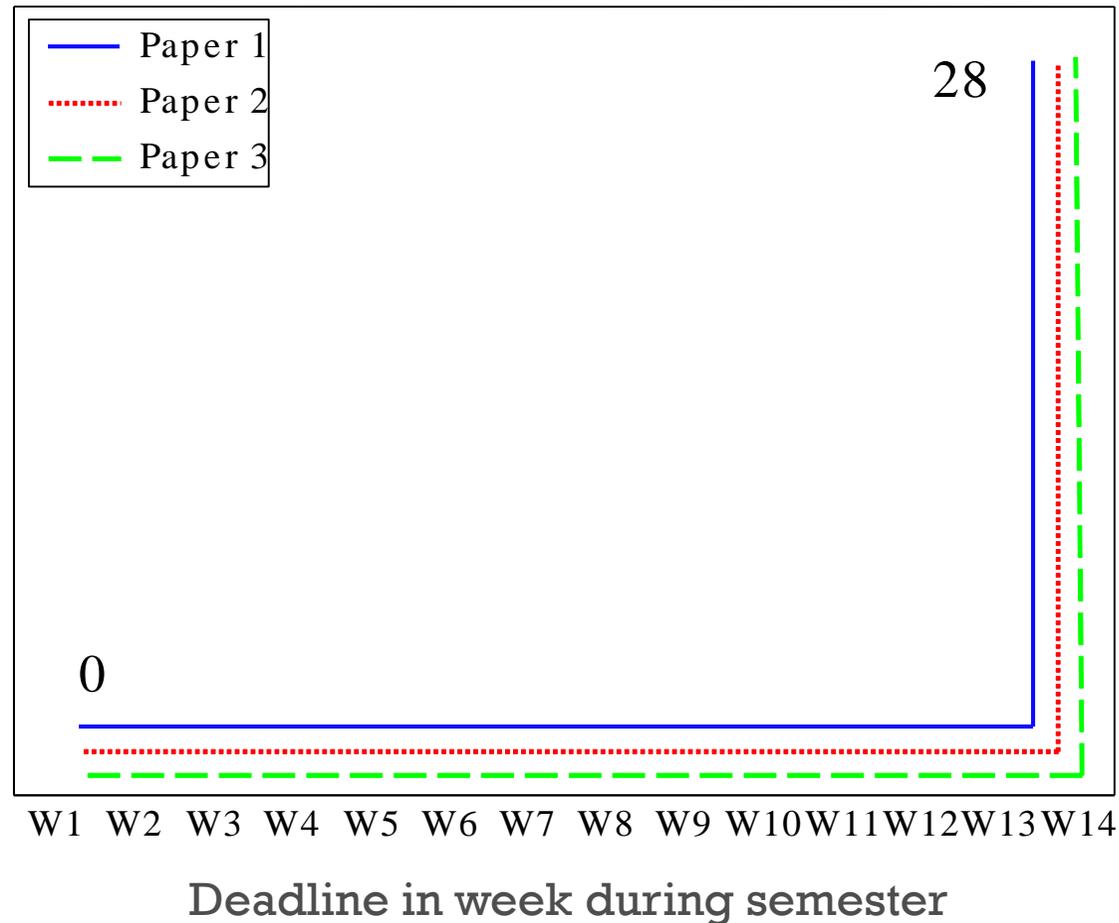
Measure: Deadline length for each term paper.

Procrastination and Self-Control

(from: Ariely and Wertenbroch 2002, *Psychological Science*)

What students **should** do to avoid penalties...

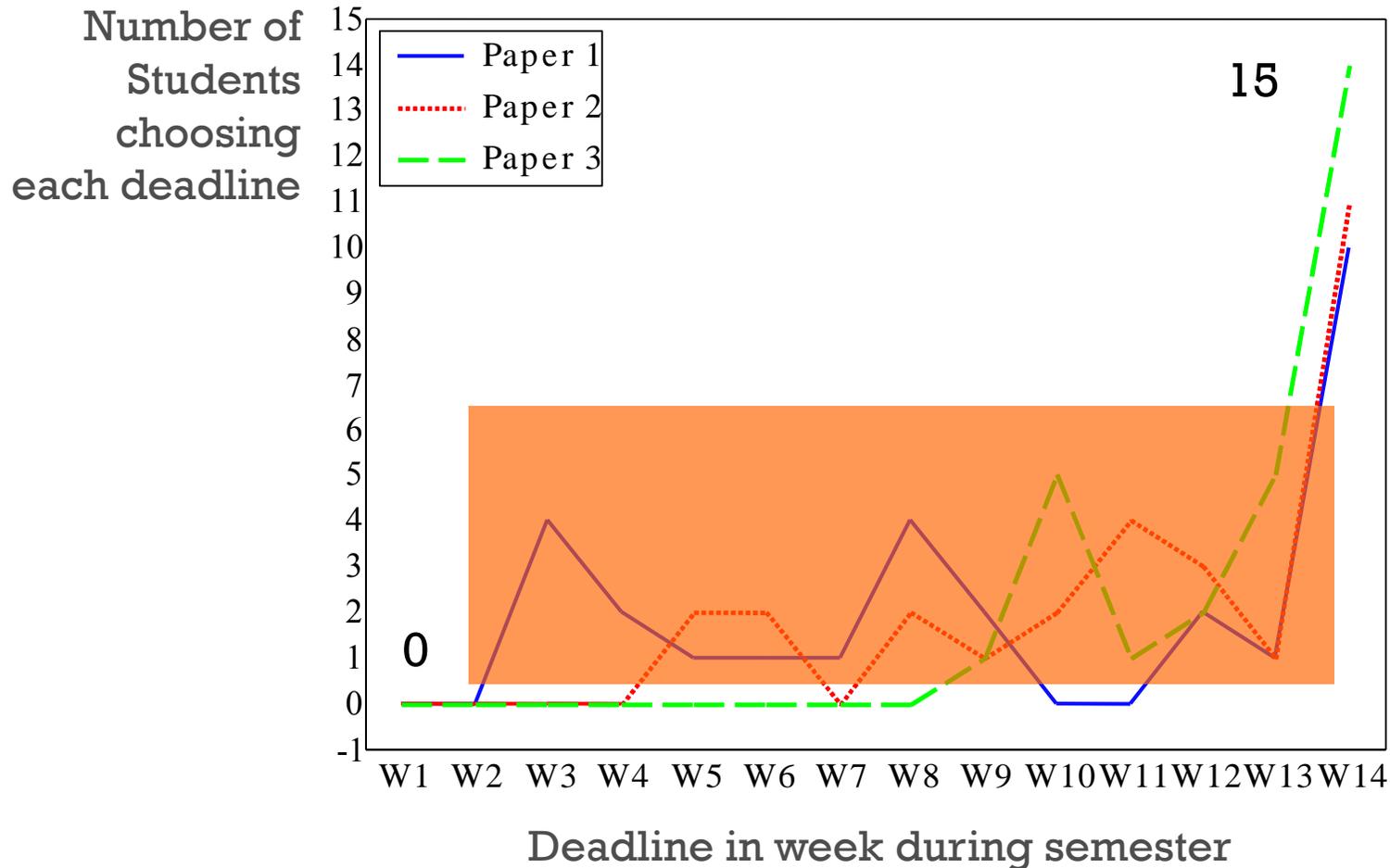
Number of
Students
choosing
each deadline



Procrastination and Self-Control

(from: Ariely and Wertenbroch 2002, *Psychological Science*)

... and what they **do** do because they are afraid of procrastinating!



Why Consumers Don't Save Enough

(from: Ashraf, Karlan, and Yin 2006, *Quarterly Journal of Economics*)

- Procrastination
 - Not getting started
- Overspending
 - Spending disposable income on (more tempting) consumption

Why Consumers Don't Save Enough

(from: Ashraf, Karlan, and Yin 2006, *Quarterly Journal of Economics*)

Solution: “Commitment savings account”

- 1777 bank clients in Philippines
- Offered 710 randomly chosen clients commitment account, 202 signed up
 - same interest rate as in regular savings account but self-imposed restricted access: specific date or savings goal
- After 12 months, average savings balances were **81% higher** in commitment accounts than in control group

→ **Financial institutions should offer consumers commitment tools.**

Overspending

Does Consumer Credit Increase Spending?

(from: Prelec and Simester 2001, *Marketing Letters*)

- 64 M.B.A. students at M.I.T. bought *Boston Celtics* NBA tickets for Eastern division title game (ATM or credit card)
- Willingness to pay with **cash only** (N=31) = **\$28.51**
- Willingness to pay by **credit card only** (N=33) = **?**

Does Consumer Credit Increase Spending?

(from: Prelec and Simester 2001, *Marketing Letters*)

- 64 M.B.A. students at M.I.T. bought *Boston Celtics* NBA tickets for Eastern division title game
- Willingness to pay with **cash only** (N=31) = **\$28.51**
- Willingness to pay by **credit card only** (N=33) = **\$60.64**

→ **113% credit card premium**

→ **Consumer credit boosts spending!**

Does Credit Cause *Overspending*?

(from: Wertenbroch, Soman, and Nunes 2006, INSEAD working paper)

Do consumers have any insight into this effect? Do they use mental accounting rules to mitigate overspending?

If credit boosts spending and consumption, this must be especially true for tempting consumption items:

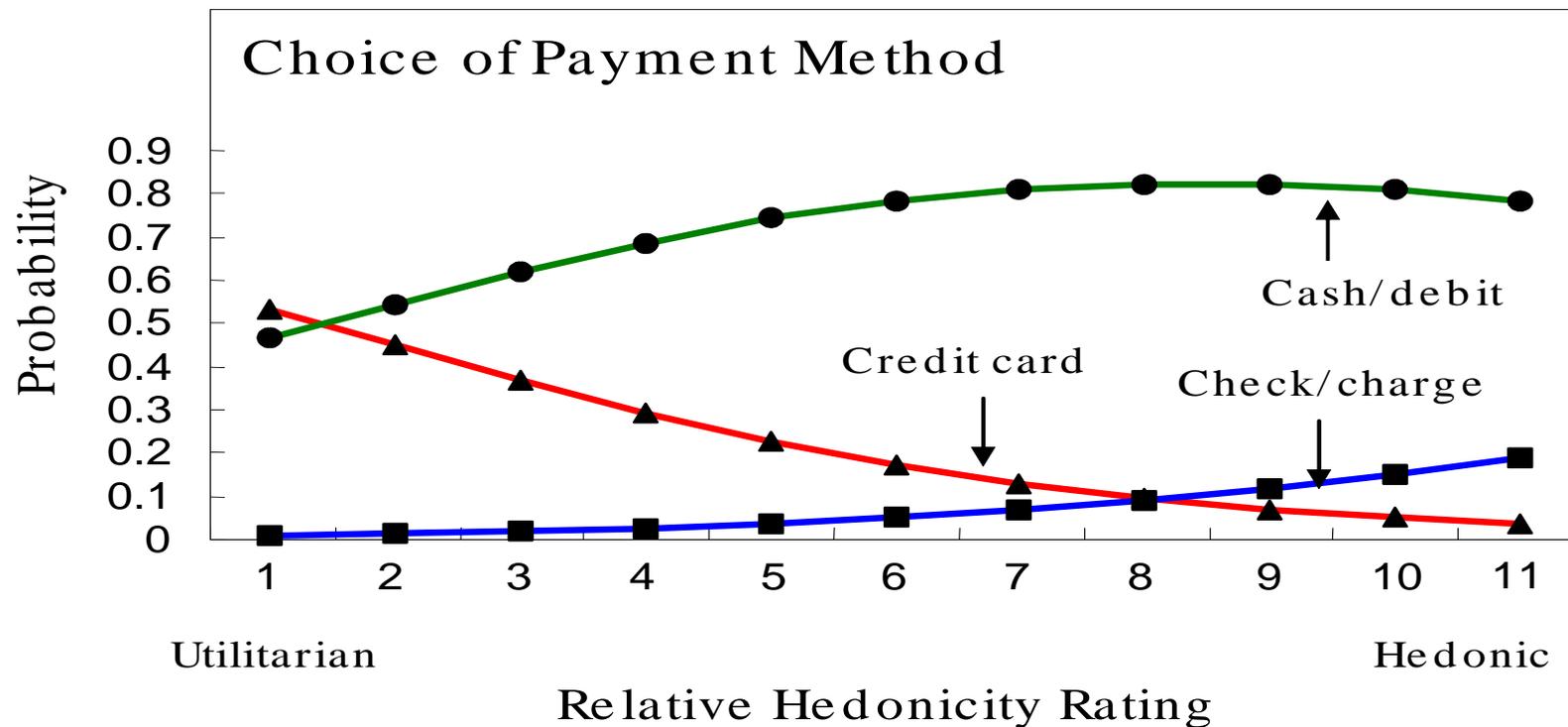
hedonic goods versus **utilitarian goods**.

→ Look for evidence of **credit aversion** for hedonic purchases.

Does Credit Cause Overspending?

(from: Wertenbroch, Soman, and Nunes 2006, INSEAD working paper)

Panel data: 37 university staff members, receipts for all purchases
(2434 purchases, 5 weeks, 72 receipts per person on average)



Hedonic purchases → pay off quickly (**cash/debit card**, **check/charge card**).

Utilitarian purchases → ok to finance indefinitely (**credit card**).

Does Credit Cause *Overspending*?

(from: Wertenbroch, Soman, and Nunes 2006, INSEAD working paper)

- Consumers strategically avoid taking on (credit card) debt to finance hedonic purchases to ensure they can afford the (tempting) hedonic consumption.
- Consumers are not tempted to overconsume utilitarian goods so that taking on (credit card) debt to finance utilitarian purchases is more acceptable.

→ **Consumers should pay cash for hedonic goods!**

Does Nominal Value Affect Spending?

(from: Shafir, Tversky, and Diamond 1997, *Quarterly Journal of Economics*)

Money illusion (John Maynard Keynes, Irving Fisher 1929):

People think of currency in nominal, rather than real, terms.

“Suppose your job pays \$30,000 annually. Would you be happier to receive a ...

... 2% pay raise (\$600) in a year when there is no inflation

(36% of U.S. undergraduate sample)

or a

... 5% pay raise (\$1,500) in a year when there is 4% inflation?”

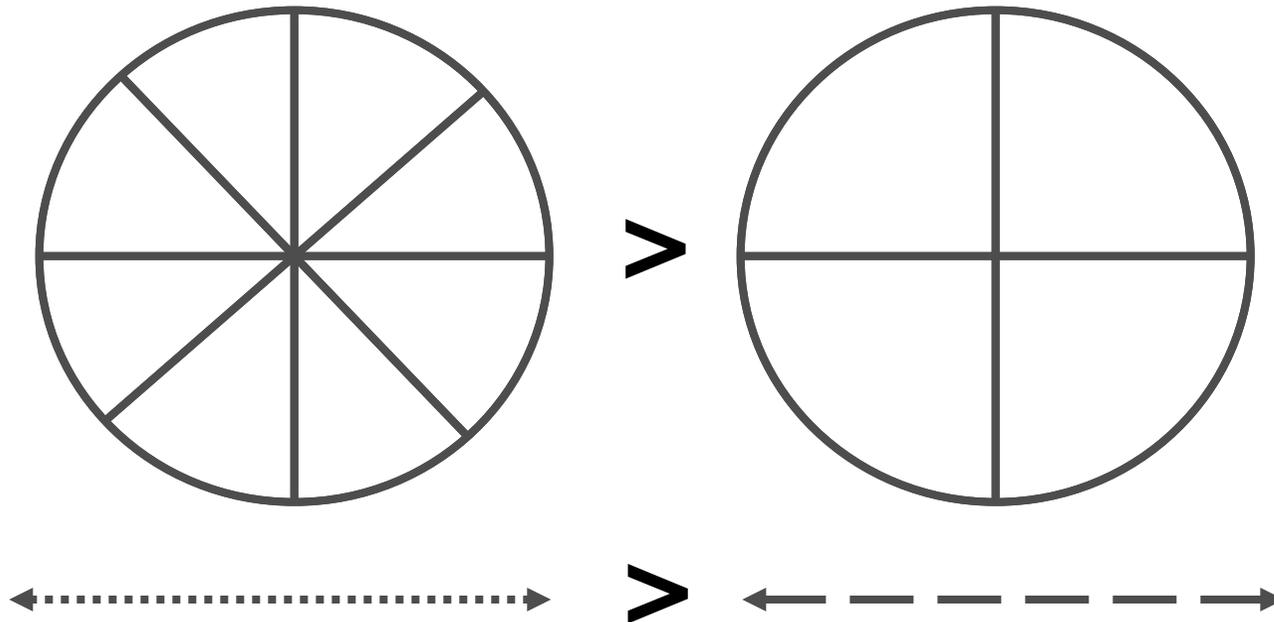
(64% of U.S. undergraduate sample)

Does Nominal Value Affect Spending?

(from: Wertenbroch, Soman, and Chattopadhyay 2007, *Journal of Consumer Research*)

Numerosity heuristic

- Overinfer *quantity* from *numerosity*
- Effect of **number of units** > effect of **unit size**



Does Nominal Value Affect Spending?

(from: Wertenbroch, Soman, and Chattopadhyay 2007, *Journal of Consumer Research*)

Subjects: 49 undergraduate students

Incentive compatible lottery

- Choice between earnings of a sure HK\$20 or a gamble with an expected value of $E(5/3 \times \text{PI } \$x)$, where $0 \leq x \leq 2, 20, \text{ or } 200$.
- “You’re gambling in a casino in the Pitcairn Islands. You win if tossing a pair of dice reveals 9, 10, 11, or 12 dots and you lose if 2 to 8 dots come up. Hence, your probability of winning is one in three [$P(\text{win})=1/3$]. If you win, you get 5 times the amount you have bet.”

Does Nominal Value Affect Spending?

(from: Wertenbroch, Soman, and Chattopadhyay 2007, *Journal of Consumer Research*)

Three groups of respondents with different exchange rate numerosity:

- High numerosity: $\text{PI\$ } 10 = \text{HK\$ } 1 \rightarrow \text{budget} = \text{PI\$ } 200$
- Control: $\text{PI\$ } 1 = \text{HK\$ } 1 \rightarrow \text{budget} = \text{PI\$ } 20$
- Low numerosity: $\text{PI\$ } 0.10 = \text{HK\$ } 1 \rightarrow \text{budget} = \text{PI\$ } 2$

Measure: willingness to bet (WTP), calculated in HK\$

Does Nominal Value Affect Spending?

(from: Wertenbroch, Soman, and Chattopadhyay 2007, *Journal of Consumer Research*)

Consumer spending decisions are fundamentally flawed

- WTP increases with numerosity of difference between nominal budget and nominal expected value of the bet

- High numerosity: WTP = HK\$**12.06**

- Control: WTP = HK\$**7.77**

- Low numerosity: WTP = HK\$**6.17**

→ **Over-(under-)spending under high (low) numerosity**

→ **Consumers should evaluate the ratio of price and budget (i.e., their real purchasing power).**

Summary:

Problems and Financial Literacy Solutions

- Undersaving
 - **Precommitment** mitigates **self-control problems** in saving.
- Overspending
 - **Credit avoidance** mitigates **self-control problems** of excessive spending and consumption of hedonic goods.
 - Focus on **ratio of prices to budgets** to mitigate **currency numerosity** effects on spending.

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Thank you for your attention!

For further information, please contact me at

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