

**RAND BEHAVIORAL FINANCE FORUM
ANNUAL PUBLIC POLICY ROUNDTABLE – May 30, 2014**

The Economic Importance of Financial Literacy

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The growing importance of financial literacy

A new economic landscape

Major changes that increase individuals' responsibility for their financial well-being

➤ **Changes in the pension landscape**

- More individual accounts and DC pensions

➤ **Changes in labor markets**

- Divergence in wages – skills are critical
- More flexibility – pensions have to be portable

➤ **Changes in financial markets**

- Greater complexity
- More opportunities to borrow & in large amounts



A large amount of research in past 15 years

Some questions

1. How well-equipped are people to make financial decisions?
2. Are there vulnerable groups?
3. Does financial literacy matter?
4. What can be done to promote financial literacy and financial health?

How well-equipped are people?

Do individuals know the basic concepts that are key to making financial decisions?

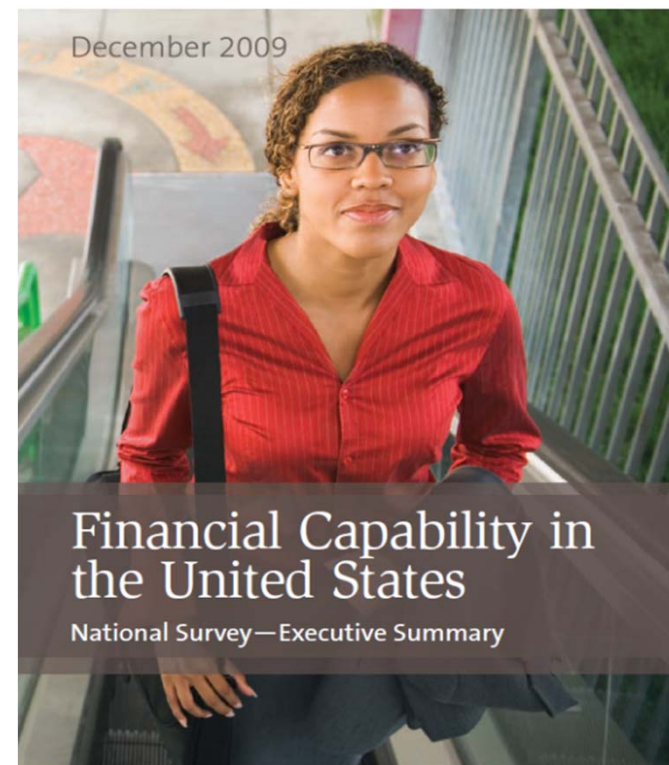
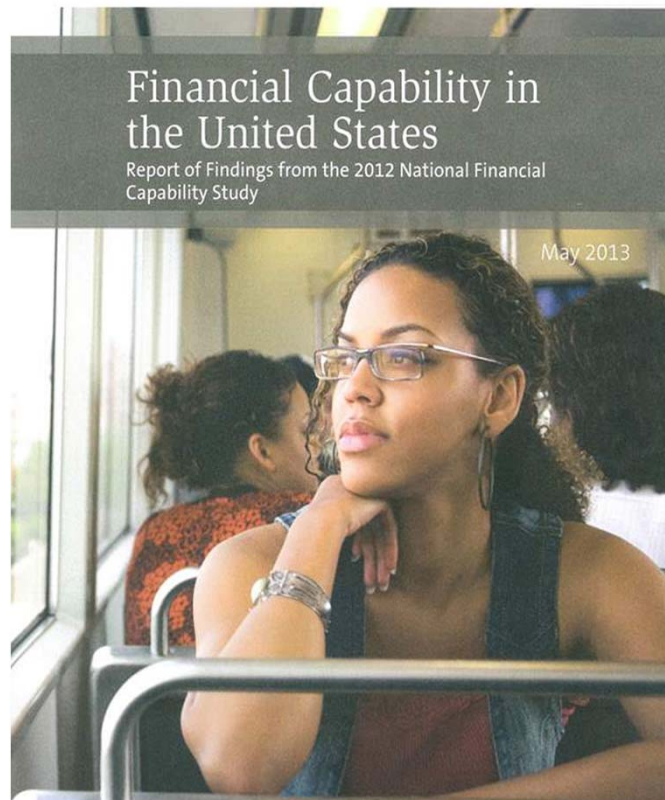
Aim: Assess knowledge of basic concepts, the *abc's* of personal finance

The journey of three simple questions

- **Added to 5 national surveys in the United States**
 - **Including RAND ALP and FINRA NFCS**
- **Added to national surveys in many countries**

Collecting new data

The 2009 & 2012 National Financial Capability Study



ALP now includes the questions from NFCS



Measuring financial literacy (I)

To test numeracy and understanding of interest rates, we asked:

“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

Measuring financial literacy (II)

To test understanding of inflation, we asked:

“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

Measuring financial literacy (III)

Finally, to test understanding of risk diversification, we asked:

“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

Financial Literacy around the World

(FLat World)

Evidence from 13 countries:

- ❖ USA
- ❖ The Netherlands
- ❖ Germany
- ❖ Italy
- ❖ Russia
- ❖ Sweden
- ❖ New Zealand
- ❖ Japan
- ❖ Australia
- ❖ France
- ❖ Switzerland
- ❖ Romania
- ❖ Canada



FLat World

Strikingly similar patterns across countries

- **Financial illiteracy is widespread in the population**
 - Less than half of the population in many countries can answer three basic financial literacy questions
 - Particularly low among the young
- **Risk diversification is most difficult concept**
 - Similar pattern of response across countries
 - Prevalence of “do not know” answers
- **Gender difference in financial literacy**
 - Women more likely than men to answer “I do not know” to financial literacy questions

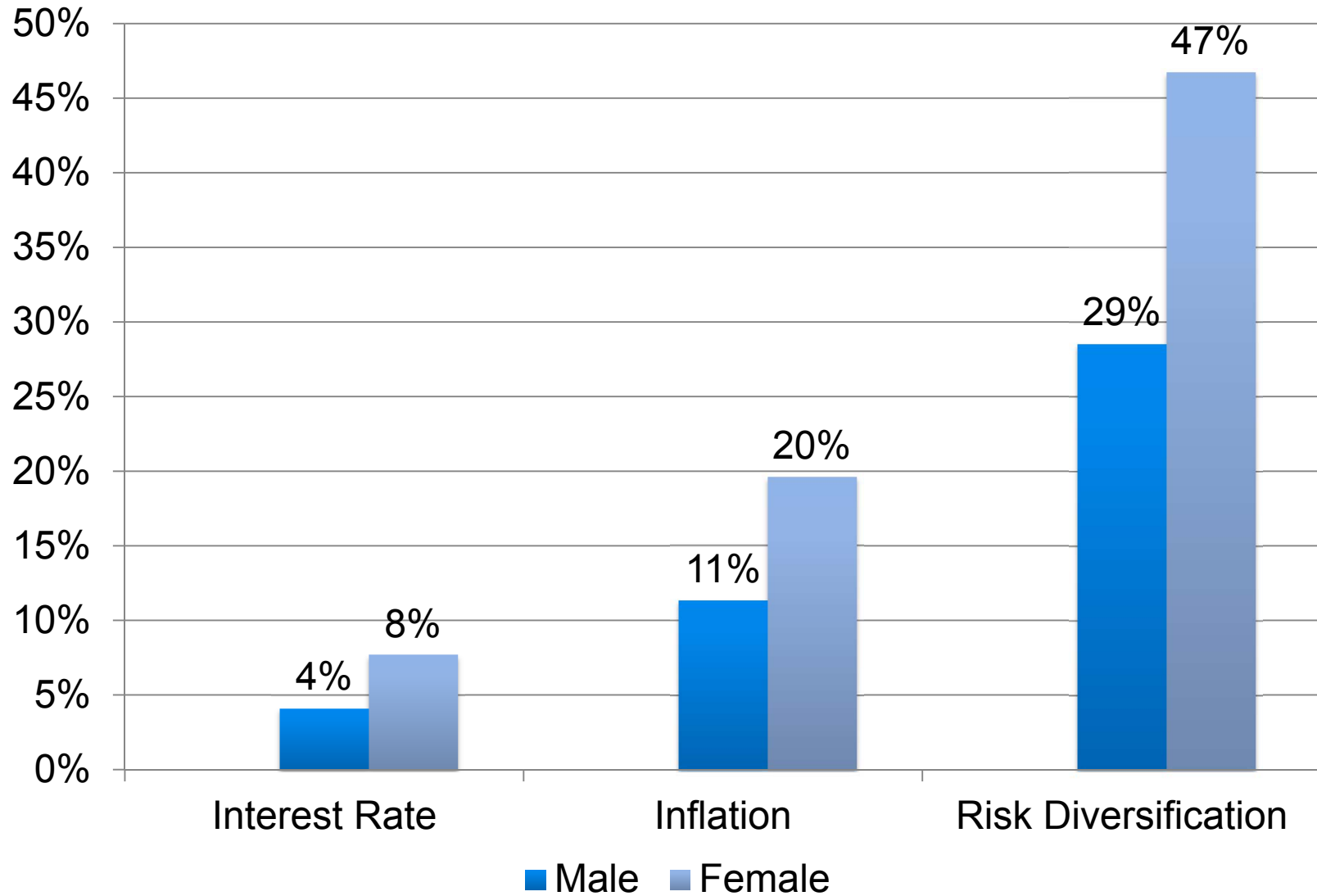
Financial (il)literacy (2012 NFCS)

The widespread lack of financial literacy

	Total sample	Millennials	Mid-career	Pre-retirees
Interest Q correct	80%	75%	81%	83%
Inflation Q correct	65%	50%	68%	79%
Risk Q correct	54%	44%	56%	62%
All 3 Qs correct	41%	28%	43%	51%

Note: N= 11,544. Respondents aged 23 to 61 and employed at the time of the survey.

“Do not know” responses by gender (age 23-28, NLSY)



It pays to be financially literate

Debt and debt management



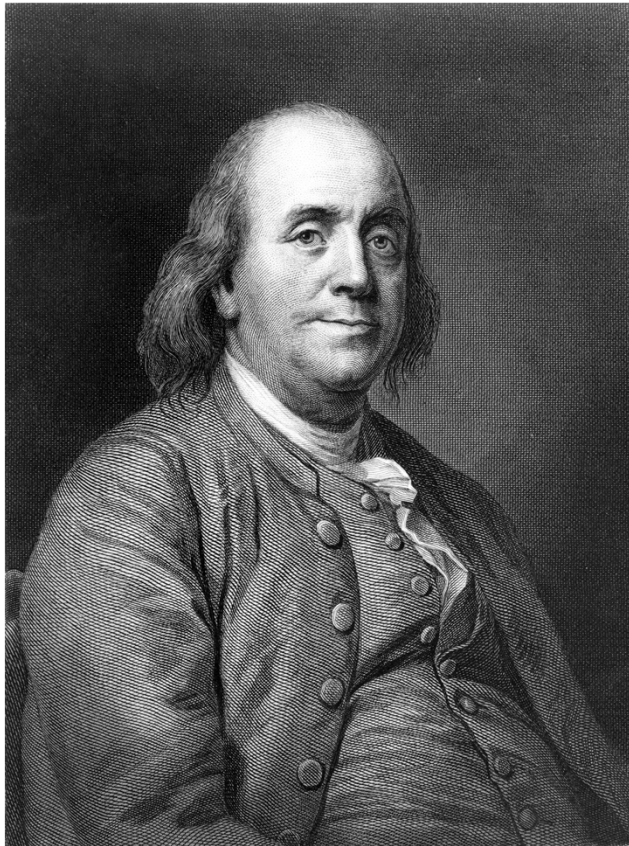
Investments



Planning and wealth accumulation

An earlier thinker on financial literacy

“An investment in knowledge pays the best interest.”



Benjamin Franklin, *The Way to Wealth*, 1758

Most recent research work

Financial knowledge & 401(k) investment performance

- **Use administrative data from large financial institution**
 - High quality data
- **Designed survey that had the 3 financial literacy questions**
 - Higher financial literacy than in the US population
- **Linked financial literacy to return on 401(k) investments**
 - Unique data
- **Those who are more financially literate earn 130 basis points more on their portfolio (adjusted for risk)**
 - Similar evidence is emerging in other papers

From research to policy and applications

Recommendations from research

- **Financial literacy cannot be taken for granted**
 - Even in countries with well-developed financial markets
- **Some groups are particularly vulnerable**
 - Young, old, and women
- **Difficulty with risk and risk diversification**
 - Risk is one of the most difficult concepts to grasp
- **Importance of financial education programs**
 - Link of financial literacy to behavior
 - Sizeable differences across individuals, one-size-does-not-fit-all

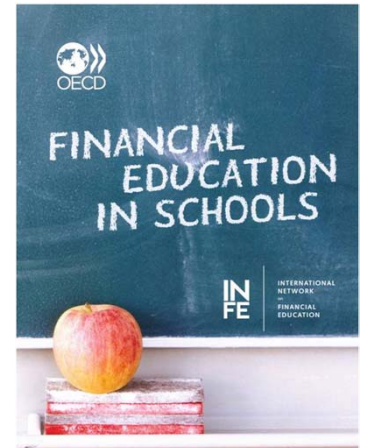
From research to policy and applications

More recommendations from research

- **Keep communication simple and free of financial jargon**
 - Overall lack of financial sophistication and sensitive to framing
- **Difficulty in engaging people**
 - Disconnect between perceived and actual knowledge
- **Changing behavior is not optimal for everyone**
 - Some financial illiteracy can be optimal
 - Letting financial knowledge decay can be optimal behavior
 - Cannot expect everyone to change behavior

Programme for International Student Assessment (PISA). Students and Money: Financial literacy skills for the 21st century

**Are students well prepared for future challenges?
Can they analyze, reason and communicate
effectively?
Do they have the capacity to continue learning
throughout life?**



**PISA 2012 Assessment
and Analytical Framework**
MATHEMATICS, READING, SCIENCE,
PROBLEM SOLVING AND FINANCIAL LITERACY



**Every three years the OECD
Programme for International Student
Assessment (PISA) answers these
questions and more. It assesses to
what extent students near the end of
compulsory education have acquired
some of the knowledge and skills
essential for *full participation in
society*.**

SAVE THE DATE: July 9, 2014

- Release of 2012 PISA Financial Literacy Data
- GFLEC will host the US release of the PISA financial literacy data
- Invited founder of PISA and Financial Literacy Experts who designed questions



Where: Jack Morton Auditorium, GW

New field: Personal Finance (A Quantitative Approach)

A new course at GWSB

Financial Decision-Making: Implications for the Consumer and the Professional

- **Cover personal finance with a rigorous approach**
 - A quantitative approach to personal finance
 - Teaching takes into consideration gender differences in fin literacy
- **It incorporates some macro, accounting, and risk management**
- **Writing a new textbook on personal finance**
 - Joint with a mathematician

Our (STAR) students

Undergraduates, graduate students and... athletes

Our students in and out of the classroom



A program for the young

Five steps to planning success

- **We designed a program for young workers**
 - They are the ones with low literacy
- **Used new method of communication**
 - A video
- **Kept the message free of economic/finance jargon**
 - Very important for women
- **Covered concepts, such as interest compounding and risk diversification, in a simple story**

Short video about interest compounding



[Link to video!](http://www.youtube.com/watch?v=r0haW5E_OpI) http://www.youtube.com/watch?v=r0haW5E_OpI

Short video about risk

Risk diversification = don't put all your eggs in one basket



[Link to Video](#)



We measured whether it worked

- Tested interventions using an Internet panel
- Baseline questions on 5 concepts
- Randomly assigned
 - Intervention group
 - ◆ Video only, narrative only, video & narrative
 - Control group
 - ◆ No intervention
- Repeated 5 concepts questions

Findings

- After being exposed to videos, the performance on financial literacy questions (general knowledge and hypothetical choices) improved
- While young were targeted, the videos affected all age groups

Visual Analytic Tool (FinVis)

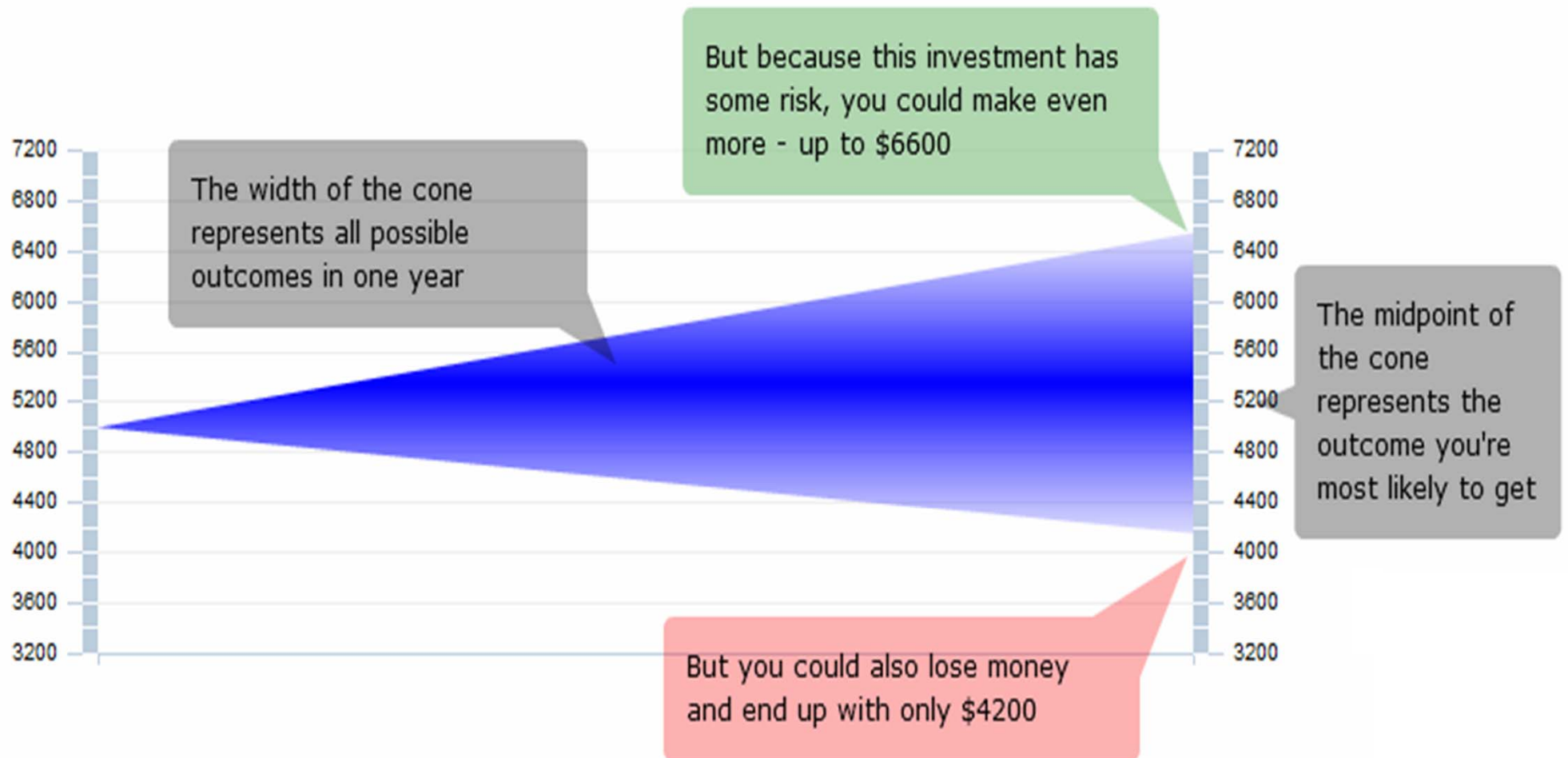
Visualization: Research shows use of computer supported representation of data amplifies cognition

- Increases cognitive resources and expands working memory
- Reduces search effort and time costs – represents large amount of data in small space
- Enhances recognition of trends
- Encourages exploration of the decision space
- Increases confidence

Goals of FinVis

- ✓ Help the user understand risk profiles of different types of stocks
- ✓ Help the user understand the impact of different rates of return, different standard deviations and correlations of assets
- ✓ Help the user learn why it is important to diversify *across stocks*
- ✓ Help the user learn why it is important to diversify *across asset classes*

Visualizing risk



Don't put all your savings in one basket:

FinVis

FinVis tutorial – Visualizing risk

FinVis

1 2 3

1

Introduction

Kate and Sam's choices

Your Choices

What can we expect from different investments?



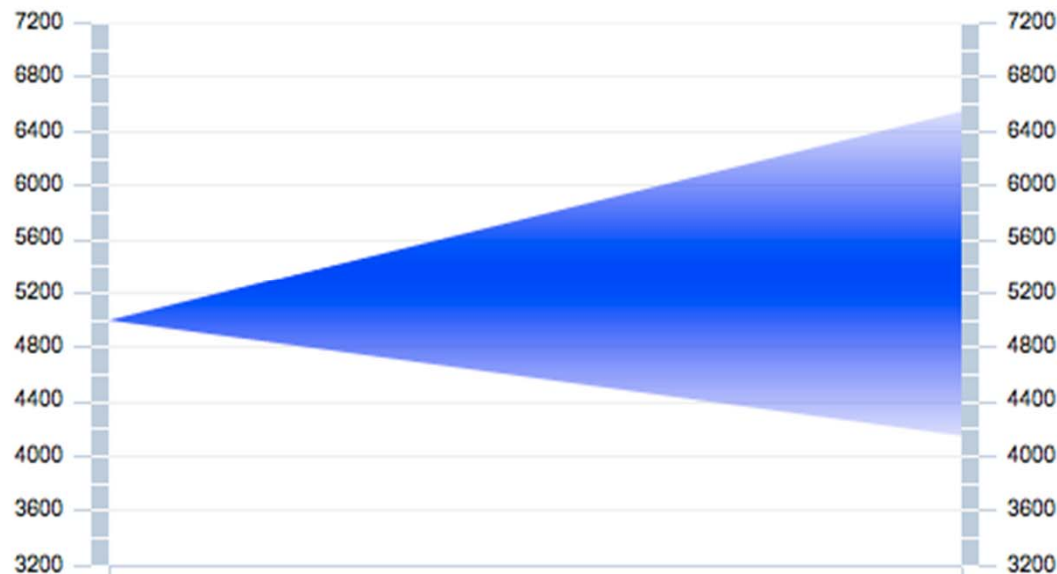
Invest in R

I decided to put my \$5000 in the investment with some risk, the "Riskier Fund".

I decided to put my \$5000 in the investment with less risk, the "Less Risky Fund".



Invest in L



Back

Managing risk – Visual aid

FinVis

1 2 3

1 2 3 4

Introduction

Kate and Sam's choices

Your Choices

Spreading your investments widely.



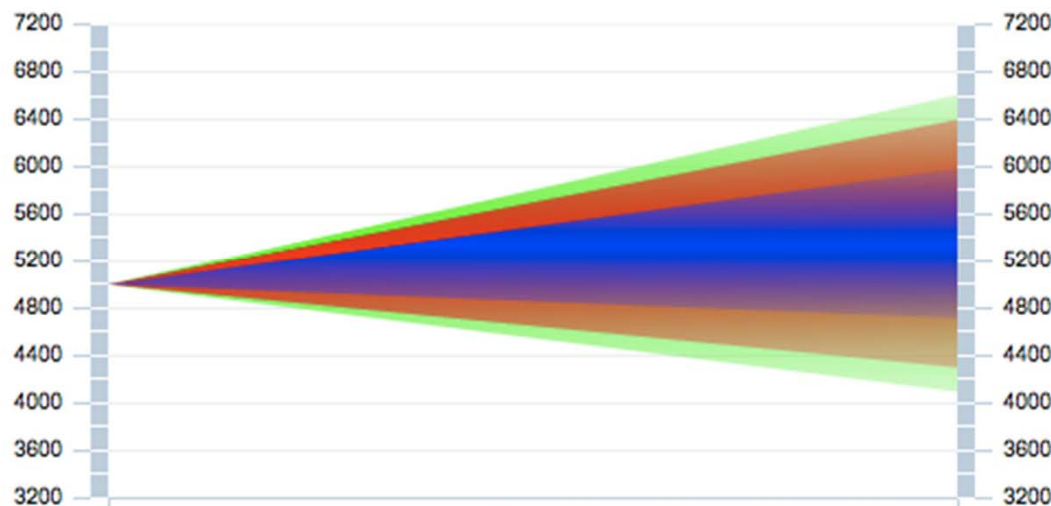
I also want to spread my risk, so I'll invest in three different companies - ComputerStars, iComputer, and Laptop Times

Invest in ComputerStars

But all of these are companies that depend on the year's sale of computers. See what happens if Sam splits his money between these three companies

Invest in iComputers

Invest in Laptop Times



Spreading your investments across similar companies doesn't lower your risk much.

See an outcome in a bad year

See an outcome in a good year

Back

A financial bootcamp for women



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Sign Up

Invite A Friend



Bootcamp Programs

Email programs written by experts and delivered to you daily to get your money organized



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We recommend you take these Bootcamps one at a time to help stay focused, but sign up for more than one if you're ready to roll up your sleeves.



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In 17 days you will become the master of your financial domain. Get the accounts you need, create a budget you can stick to, and get on the right track for retirement.

Free!



Get Out Of Debt

No matter how much debt you have, this 15-day Bootcamp will give you the tools, support, and know-how to tackle it once and for all.

Free!

A saving museum in Turin, Italy







An International Federation of Finance Museums: four founders – now extended to many museums



What a federation of museums can do

Support and promote financial literacy

➤ **Promote financial literacy among the young**

- Organize a financial literacy academy or a financial literacy competition

➤ **Be an ambassador for the work of PISA**

- Can rely on rigorous data and tests

➤ **Provide an opportunity to learn**

- Visitors go to museums to explore and learn

Financial Literacy eJournal

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About GFLS 2012

The Global Financial Literacy Summit (GFLS), hosted by the Global Center for Financial Literacy, was held in Amsterdam on November 14, 2012. The Summit was organized in collaboration with the WorldPensionSummit. The Summit

Speakers

Andrea Beltratti

Chairman of the Management Board, Intesa Sanpaolo, Italy

Keyong Dong

Dean and Professor, Renmin University School of Public

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The Summit will be joint with OECD in Fall 2014



Financial illiteracy is a complex but solvable problem



“If we can really see a problem, which is the first step, we come to the second step: cutting through the complexity to find a solution.”

Bill Gates, Harvard 2007

Contact and further information

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