



Think short term; start too late

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Andrew Stotz, PhD, CFA

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Start early; time really is money

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Learning outcomes

- Understand the role that time plays in investing
- Learn the investing advantage of young people

Learning outcomes

- See the investing time frame you should be focusing on
- Understand what exactly is the “magic” of compounding

Get your mind right

- ★ Starting with an “I’m going to get rich quick” attitude will rarely lead to success

Get your mind right

- ★ The good news is that there is one way that you can almost guarantee your financial success in the stock market
- ★ To invest over a long period of time

Get your mind right

- ★ Time is money – and the more time you have, the more money you can make

Get your mind right

- ★ To maximize this benefit, you must take advantage of the time you have by starting early or starting now

Get your mind right

- ★ *The best time to plant a tree is 20 years ago...*
- ★ *...the second-best time is today*
- ★ - Old Chinese proverb

Get your mind right

- ★ This is one place where youth has a major advantage over age

Get your mind right

- ★ When people over 50 attend my seminars they say that they wish they knew about the time value of money when they were younger
- ★ You have the chance to learn this now!

The magic of compound interest

- ★ The magic of “compound interest”, or “the compounding effect”,
- ★ The most powerful way to be successful in the stock market

The magic of compound interest

- ★ There is only one problem...
 - ...It takes 30 years



Let's answer some questions

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Steps

1

2

3

4

5

6

7

8

9

10

11

12

14



But you have a long time

- ★ Previously you decided when you wanted to be financially independent and how long you expect to live
- ★ These inputs will help you identify your investment and retirement horizons

So how long will you be investing?

- ★ Let's find your investment horizon
 - The number of years between today and the year you would like to be financially independent

So how long is your Investment Horizon?

		Age of financial independence											
		40		50		60		70		80		90	
Current age	20	20		30		40		50		60		70	
	30			20		30		40		50		60	
	40					20		30		40		50	
	50							20		30		40	
	60									20		30	
	70											20	
	80												
	90												
100													
Steps		1	2	3	4	5	6	7	8	9	10	11	12

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So how long will you be investing?

- ★ Now let's find your retirement horizon
 - The number of years between the day you become financially independent and the end of your life

How long is your Retirement Horizon?

		Age of financial independence											
		<div>405060708090</div>											
Live life until this age	20												
	30												
	40												
	50	10											
	60	20	10										
	70	30	20	10									
	80	40	30	20	10								
	90	50	40	30	20	10							
	100	60	50	40	30	20	10						
Steps	1	2	3	4	5	6	7	8	9	10	11	12	

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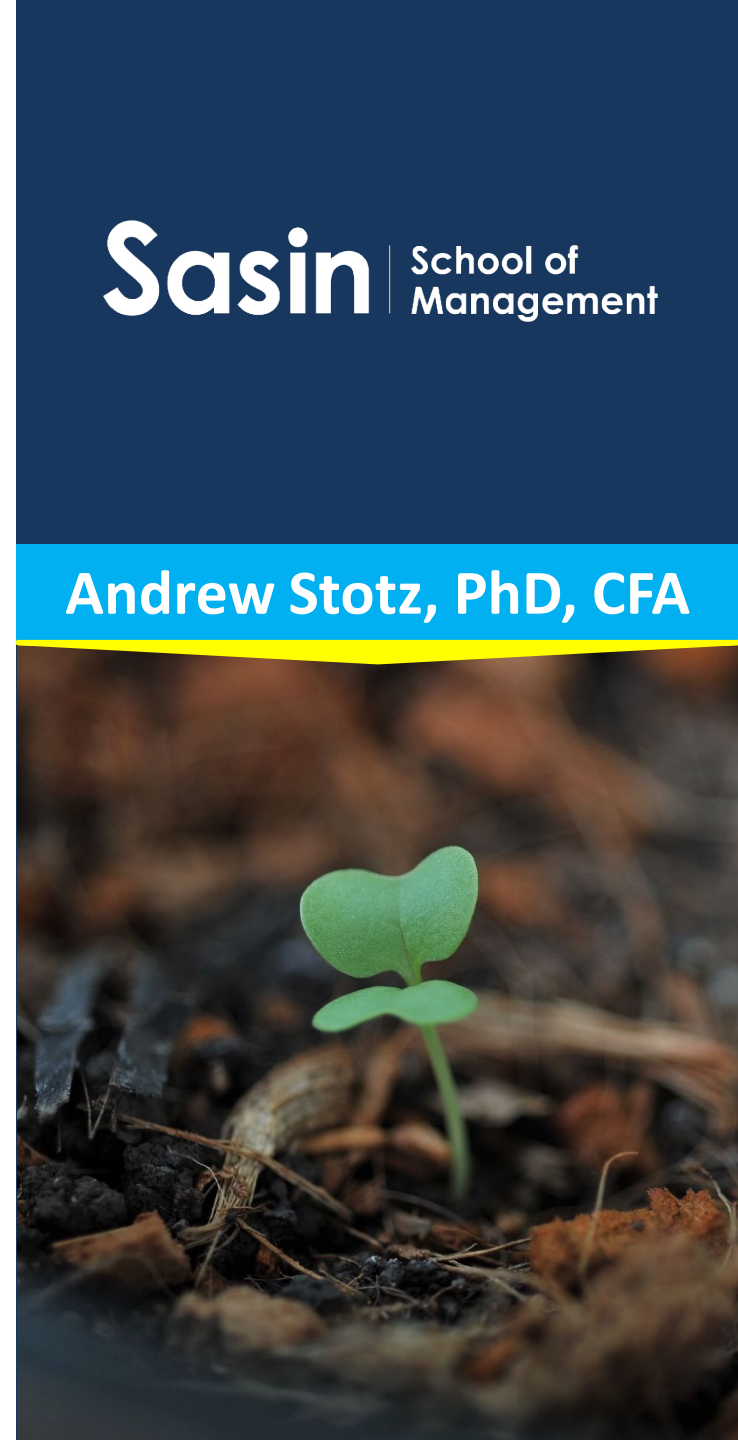
Open the BYW Financial Plan file

★ BYW Financial Plan.xls

Open the financial plan file and enter this info

Determine your investment and retirement horizon

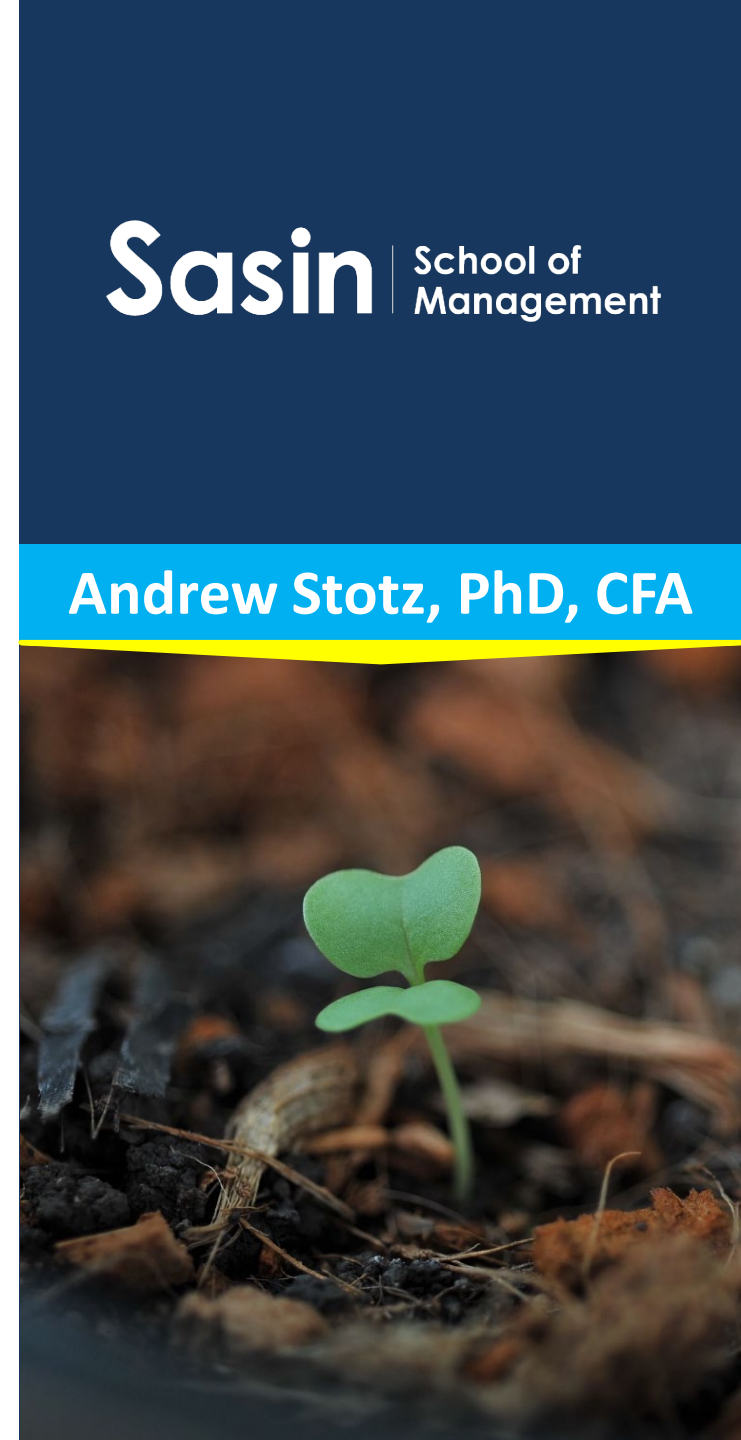
Today's date	02-May-20
Your first name	Meg
Your last name	Zhang
Your date of birth (mm/dd/yy)	07-Apr-98
Your current age	22
The age you want to be financially independent (FI)	60
The age you expect to live to	90
Your investment period is expected to last 38 years and ends in 2058.	38
Your retirement period is expected to last 30 years.	30
You'll manage your money for the next 68 years.	68



You will see this output

My long-term time horizon

1. I am 22 years old, and I want to be FI when I am 60.
2. I plan to live a happy life until I am 90 years old.
3. My investment horizon is 38 years and my retirement horizon is 30.
4. I will manage my money for the next 68 years.



Don't underestimate this period

- ★ Your retirement horizon is when you will no longer be generating income from work
- ★ If you never made a plan, this could be a very stressful time

Don't underestimate this period

- ★ If you executed on a plan over the years, you are much more likely to be able to spend your retirement years traveling and enjoying life with your family

Nobody can help you for 70 years

- ★ No one is going to be able to help you throughout both your entire investment and retirement horizons,
- ★ You must do it yourself

Nobody can help you for 70 years

- ★ You feed and clothe yourself your whole life, right?
- ★ Well, you need to be responsible for your own money as well

Focus on investing for the long term

- ★ As you begin to think about investing from a longer term perspective, you will understand how silly it sounds when you hear people talk about making short-term gains in the stock market

Focus on investing for the long term

- ★ Now you know – the secret to investing successfully is not about making gains in one week, one month or even one year

Focus on investing for the long term

- ★ It is about 70 years!
- ★ Short-term thinking is a mistake

Focus on investing for the long term

- ★ Why is starting early the most surefire method for investing in the stock market?

Focus on investing for the long term

- ★ Because money in the stock market grows exponentially over time, which is especially evident in later years

Understanding compound interest

- ★ Compounding interest on interest is **CRITICAL** to wealth creation!

Understanding compound interest

- ★ Let's look at this in more detail, imagine that you put \$100 in the bank and let it sit there for 10 years

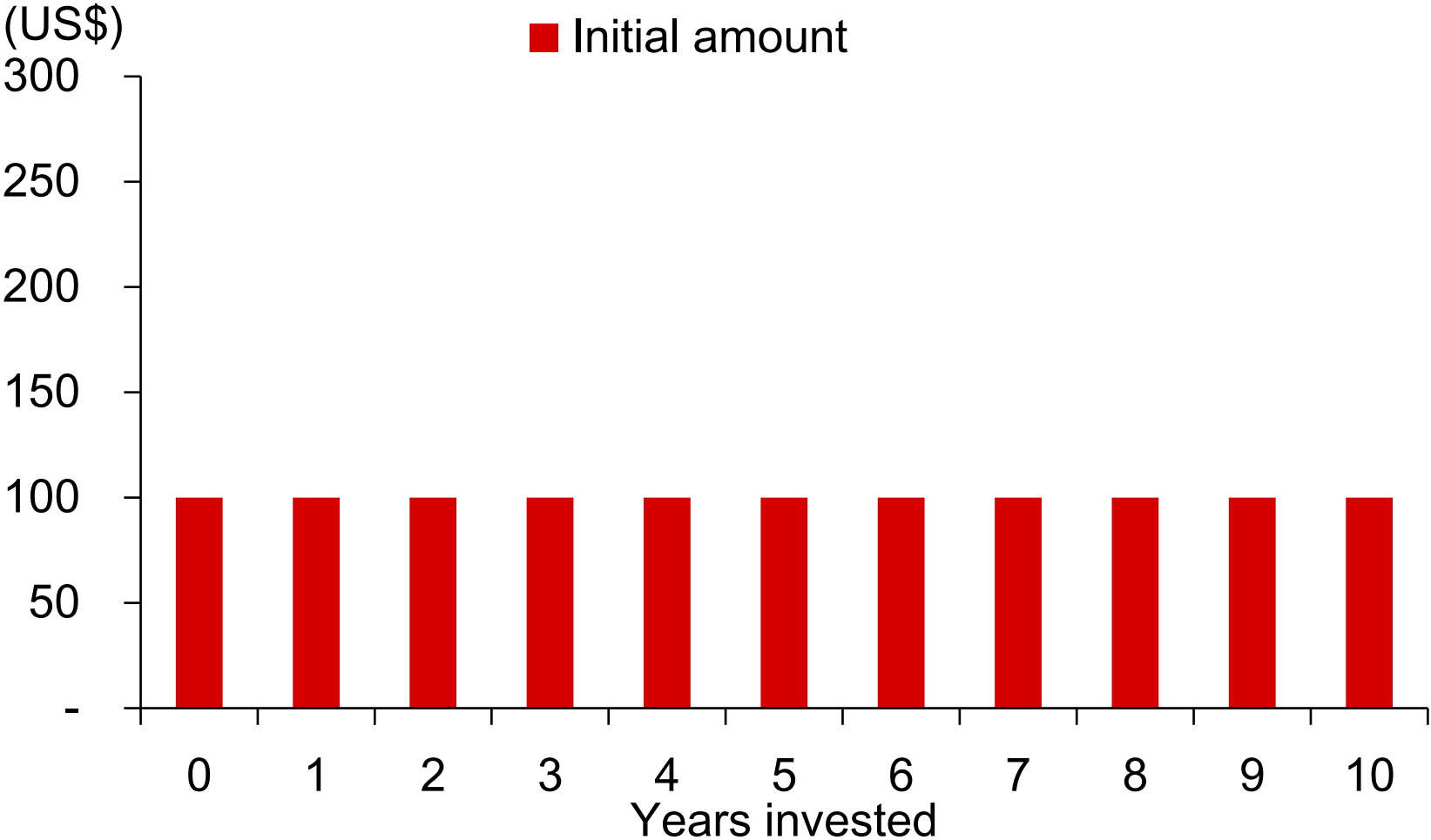
Understanding compound interest

- ★ Suppose you get a 10% annual interest rate from the bank (highly unrealistic, but easy to understand)

Understanding compound interest

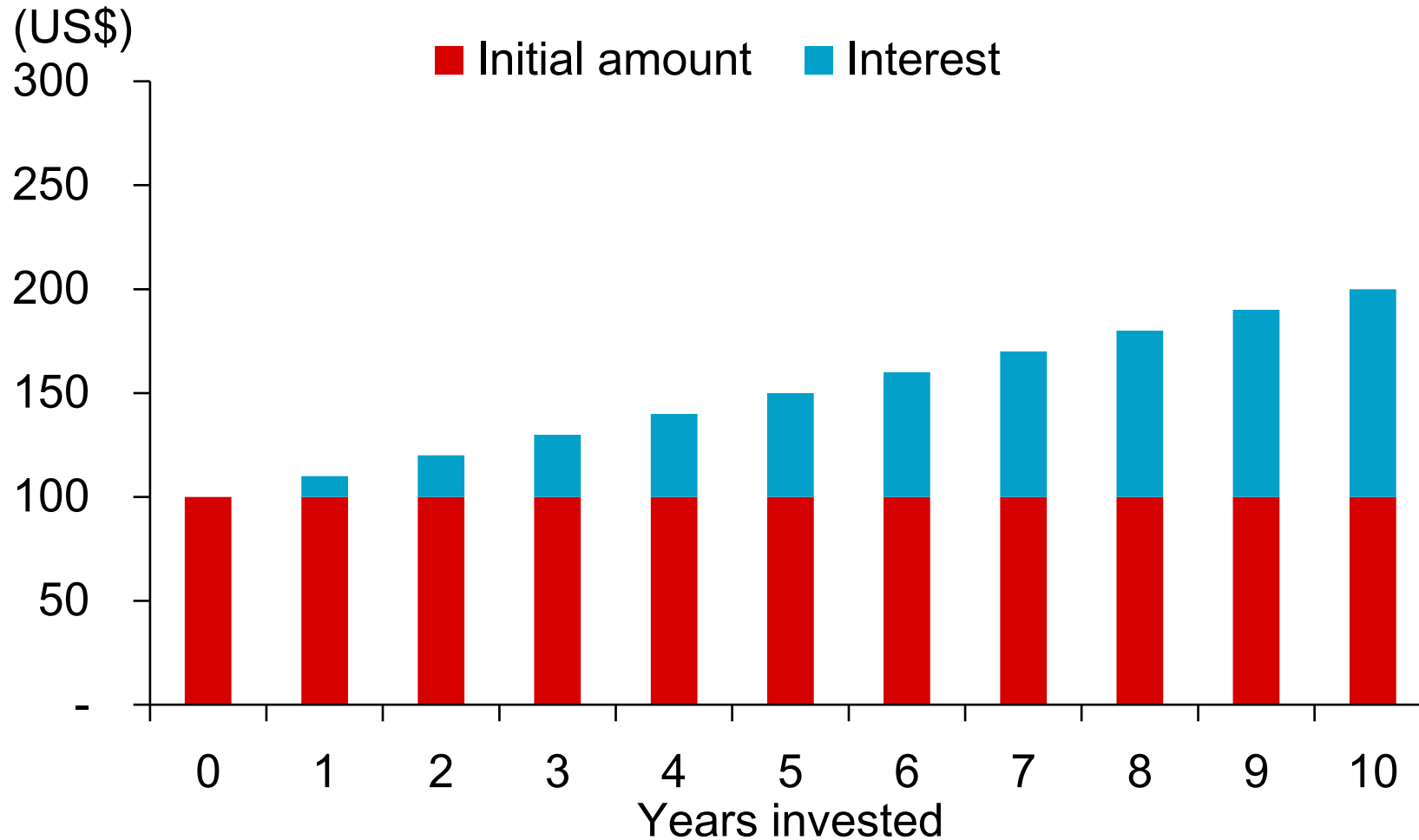
- ★ After the first year, you will have earned \$10 in interest, which you are able to withdraw and spend
- ★ So let's say you buy a dinner with that money

\$100 in the bank for ten years



Steps 1 2 **3** 4 5 6 7 8 9 10 11 12

\$100 in the bank for ten years + interest



Steps 1 2 **3** 4 5 6 7 8 9 10 11 12

Understanding compound interest

- ★ Then the next year, you earn another \$10 on the \$100, and spend that too

Understanding compound interest

- ★ By the end of the 10 years, you will have received (and then spent) \$100 in interest (\$10 each year)

Understanding compound interest

- ★ That is the same amount that you originally put in!
- ★ Not bad – you doubled your money
- ★ But that is hardly magical

Understanding compound interest

- ★ The magic of compounding happens when you do not take the interest out and spend it,
- ★ but rather, you leave it in the bank to compound

Understanding compound interest

- ★ So, let's go back to the end of the first year and say you earned \$10
- ★ But this time, you leave it in the bank instead of buying yourself dinner

Understanding compound interest

- ★ Then, the next year, you receive another 10 dollars on the original \$100,
- ★ but you also earn 10% on the \$10 interest you received at the end of the first year

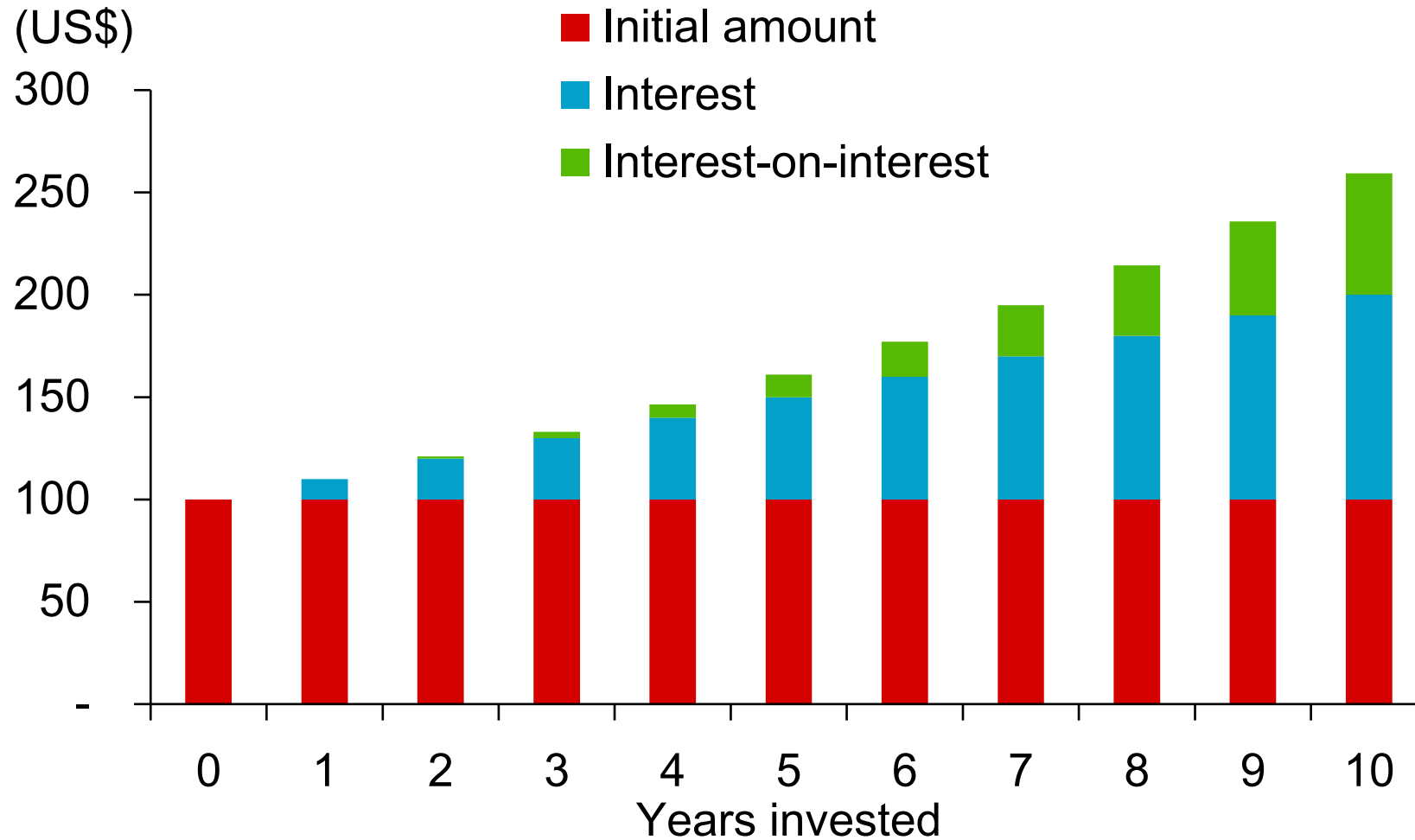
Understanding compound interest

- ★ This is where the magic starts!
- ★ Now you have \$121
- ★ \$100 original investment,

Understanding compound interest

- ★ \$10 interest from the first year,
- ★ \$1 interest on the \$10 from the first year,
- ★ and then another \$10 in interest from the second year

\$100 at bank with compound interest

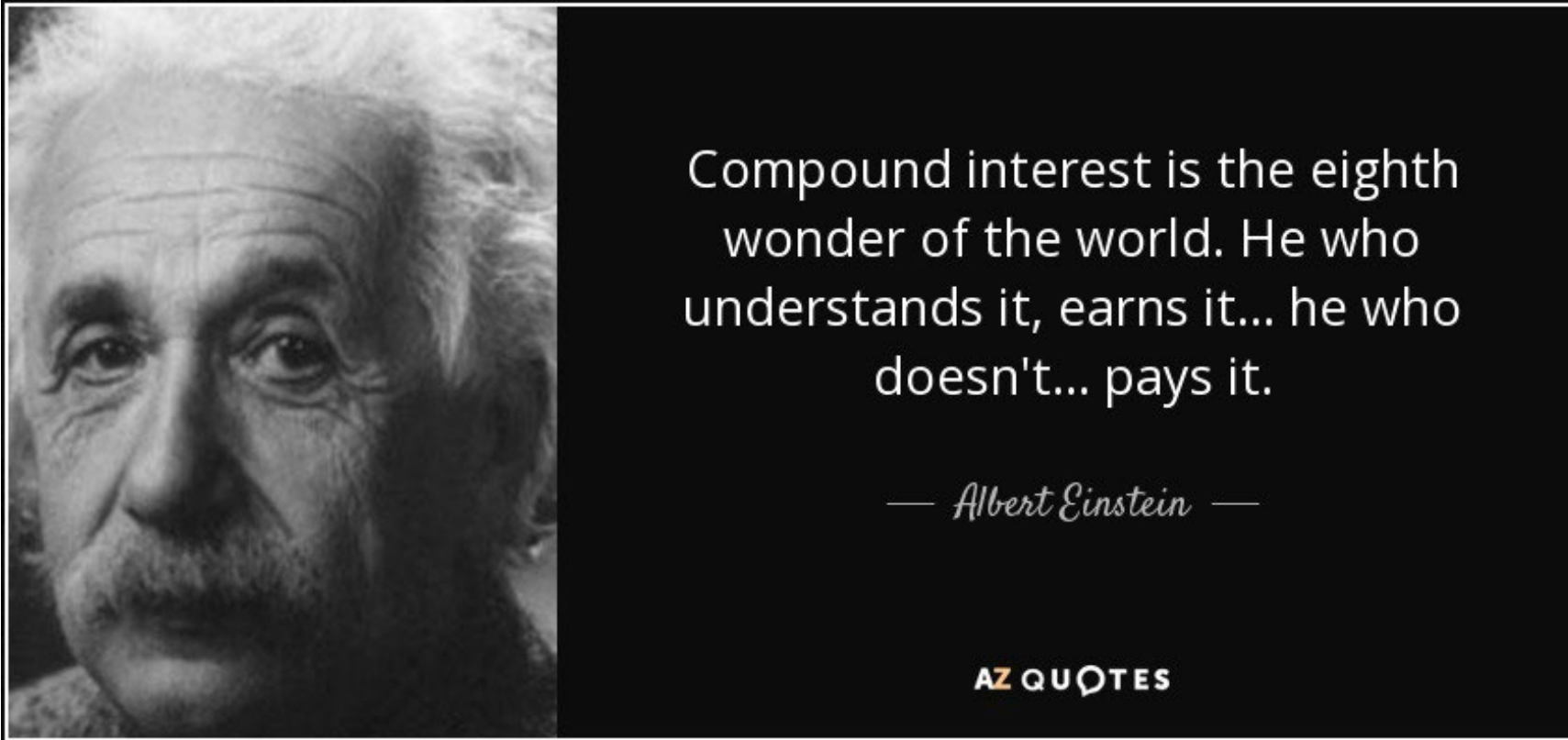


Steps 1 2 **3** 4 5 6 7 8 9 10 11 12

Understanding compound interest

- ★ We call that \$1 “interest on interest” because you earned it from the interest you earned, not the money you put in
- ★ This is the source of the “compounding effect”

What did Einstein say?



Understanding compound interest

- ★ It may look small in the beginning, but trust me, it will grow exponentially, leaving you with much more later on

Understanding compound interest

- ★ The prior charts show only until year 10, so the exponential growth may not seem like much
- ★ But imagine that you left the \$100 in the bank for 30 years – what would it become?

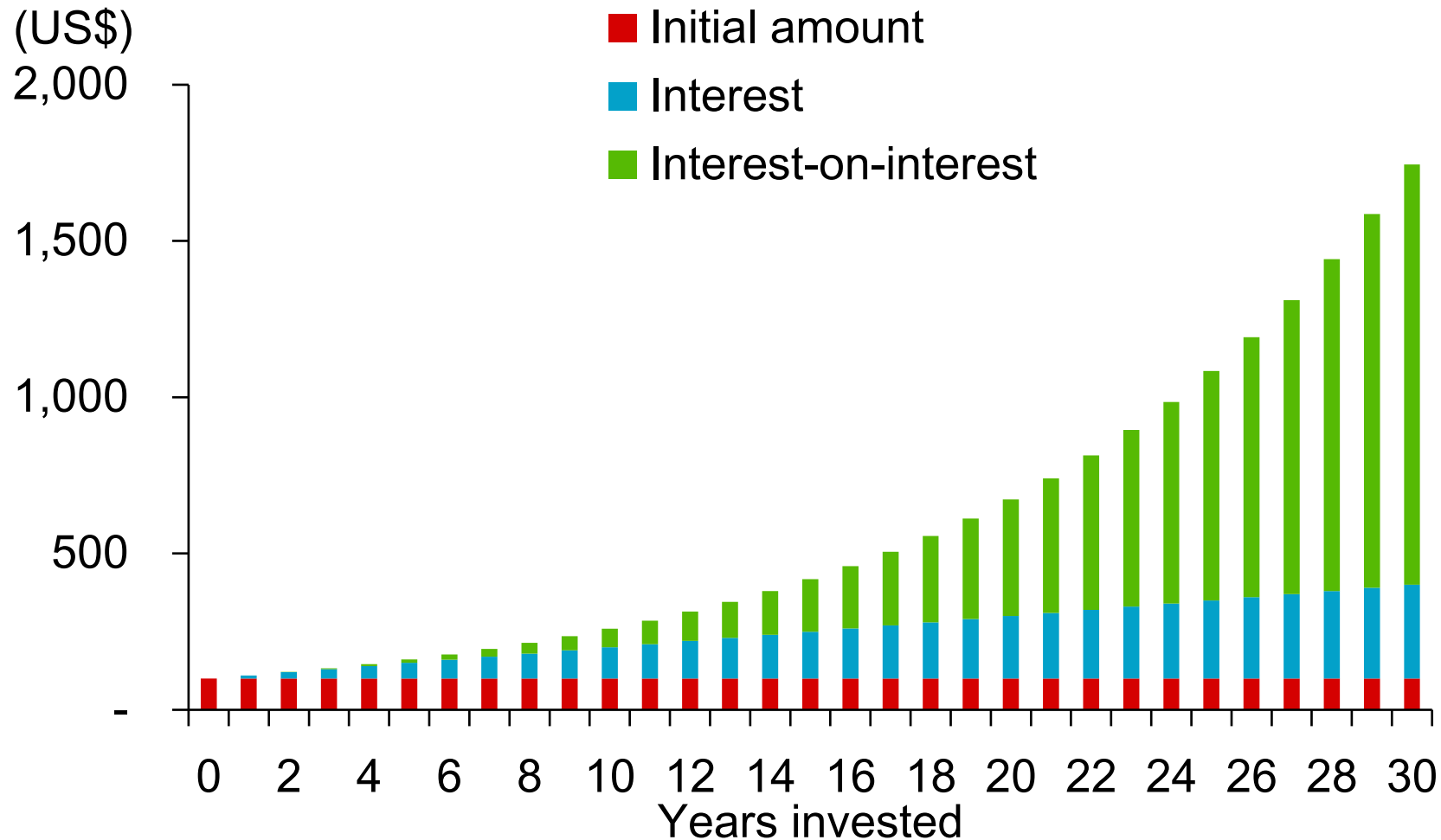
Understanding compound interest

- ★ The next chart shows that the interest-on-interest component grows to become almost 80% of the total wealth at the end of the period

Understanding compound interest

- ★ We will see that the magic of compounding does NOT happen over the short term. It only happens over time

\$100 grown at 10% over 30 years




Steps 1 2 **3** 4 5 6 7 8 9 10 11 12

Time really is money

- ★ In 30 years, almost 80% of your wealth will come from interest on interest
- ★ The surefire method for investing successfully in the stock market is

Time really is money

- ★ Start early, and let your money grow over decades
- ★ Because time really is money




What you
have
learned

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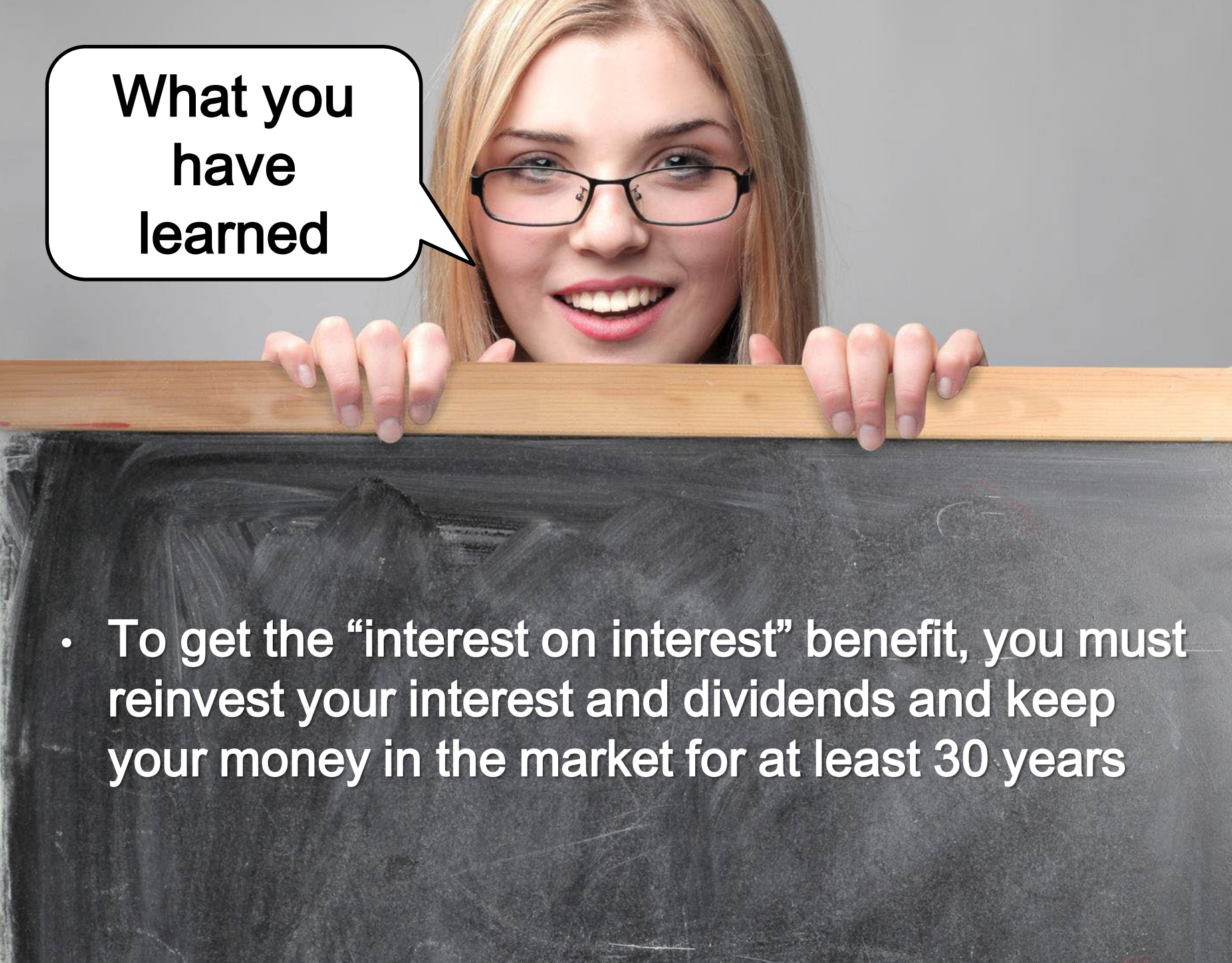
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- Your investment and retirement horizons combined could be longer than 50 years, so stay focused on the long term



What you
have
learned

- Compound interest, or “interest on interest” is the only surefire way to grow your wealth in the stock market



What you
have
learned

- To get the “interest on interest” benefit, you must reinvest your interest and dividends and keep your money in the market for at least 30 years



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A large, stylized, hand-drawn number 3 is centered on a bright yellow background. The number is drawn with thick black outlines and filled with dense, parallel black lines, giving it a textured, three-dimensional appearance. The yellow background is tilted slightly to the right, creating a dynamic effect against the dark blue background of the slide.

Let's play a game...

Remember our game?

- ★ Remember the three graphs from the beginning of this presentation? Each representing a stock that you should either buy or sell if you own it
- ★ What did you write down? Would you have bought or sold?



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How to Start Building Your **Wealth**
Investing in the Stock Market

Chart A – How do you feel? “Buy” or “Sell”?



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How to Start Building Your **Wealth**
Investing in the Stock Market

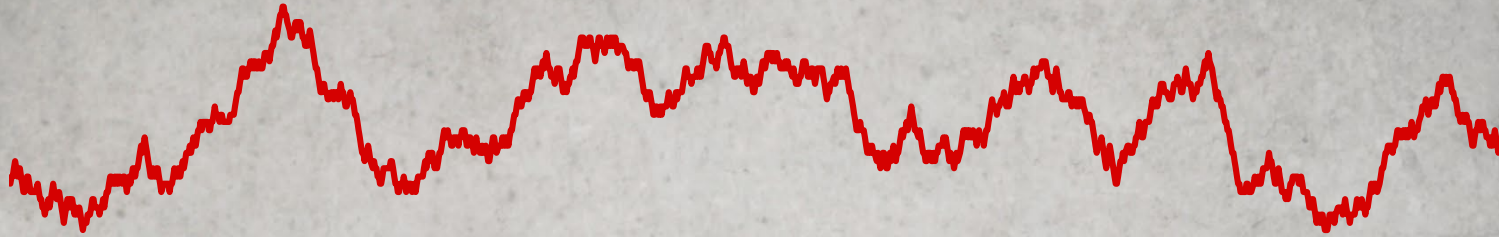
Chart B – How do you feel? “Buy” or “Sell”?



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How to Start Building Your **Wealth**
Investing in the Stock Market

Chart C – How do you feel? “Buy” or “Sell”?



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How to Start Building Your **Wealth**
Investing in the Stock Market

Can you see...

**What do all
these charts
have in
common?**



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How to Start Building Your Wealth
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**They were all
created
completely**

RANDOMLY!



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What do these charts have in common?



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- ★ I made them up myself using the random number generator in MS Excel on my computer!

Here's what the Excel sheet looks like



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What do these charts have in common?



- ★ You may have been pretty sure of your decision to buy or sell these stocks, but the truth is that your guesses were created completely based on your feeling about a randomly generated graph

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What do these charts have in common?



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- ★ You were looking for patterns that weren't there