Own both stocks and bonds

Part 1: The diversification benefit of bonds

<u>Part 2: Which bonds to own and what return to expect</u>

Learning outcomes

- Learn the difference in risk between government and corporate bonds
- Understand what happens to bond prices when interest rates rise

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Learning outcomes

- Get to know the type of government bond that can protect you from inflation
- See bond funds or ETFs that you could add to your portfolio

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Three risk levels in bond funds

- Lowest risk – Only government bonds
- Moderate risk – Mix of gov't and corporate bonds
- High risk – Only corporate bonds

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Disregard the high-risk group for two reasons

★ You already have exposure to the profits of these companies through your stock fund/ETF

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Disregard the high-risk group for two reasons

★ Remember that your main purpose for holding bonds is to reduce risk, not to earn the highest return

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

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Lowest risk – Only government bonds

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- ★ Government bonds
- ★ Government inflation protected bonds

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Lowest risk – Government bonds – Review

- When you buy a 10-year, US$1,000 government bond, the US government promises to pay you back the US$1,000 (the principal amount) you lent at the end of 10 years (maturity date)

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Lowest risk – Government bonds – Review

- In addition to returning your principal, the government agrees to pay an annual interest amount based on a coupon rate
- For example, a 3% bond would pay you US$30 per year (.03 x $1,000)

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Lowest risk – Government bonds – Review

- Credit risk – A government bond is considered the lowest risk bond for the people who live in that country because the government can always print money to repay

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Lowest risk – Government bonds – Review

- If you buy a government bond in another country, it is not totally risk-free for you because you now have exposed yourself to the risk that the other country's currency could lose its value

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Lowest risk – Government bonds – Review

- ★ So in this portion of the course I assume you are a US investor
- ★ Later, I will try to answer questions for non-US investors

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Lowest risk – Government bonds – Review

★ Interest rate risk – When interest rates rise, the value of a government (or any type) bond will fall, and vice versa

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Lowest risk – Government bonds – Review

★ However, this is only a problem if you want to sell the bond to another person before maturity

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Lowest risk – Government bonds – Review

★ But if you hold that bond to maturity you will not be exposed to this risk, instead you will get your initial investment of US$1,000 back

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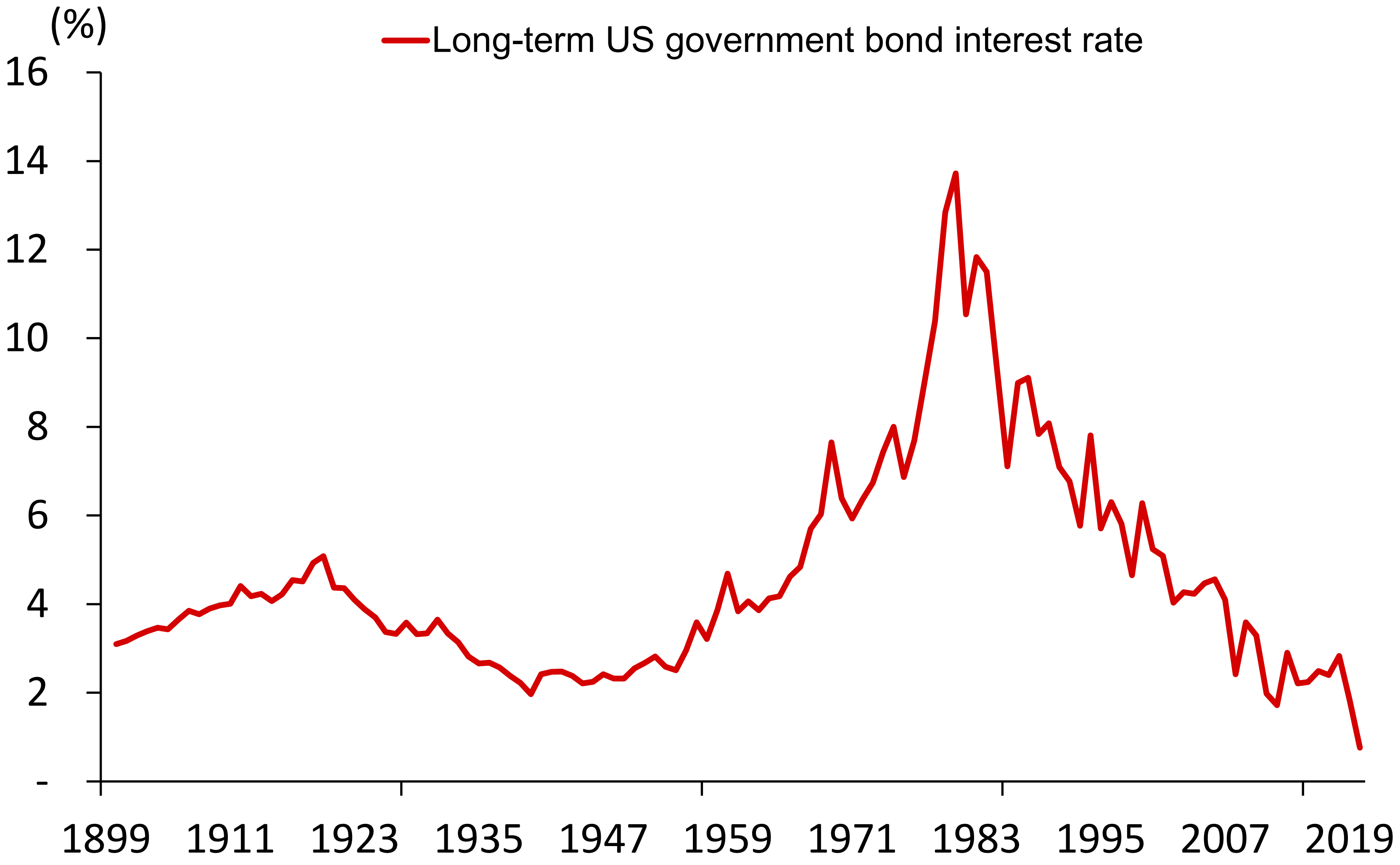
Lowest risk – Government bonds – Review



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- ⋆ A 39-year decline in interest rates, with rates now near zero
- ⋆ If interest rates start to rise, then bond prices will fall

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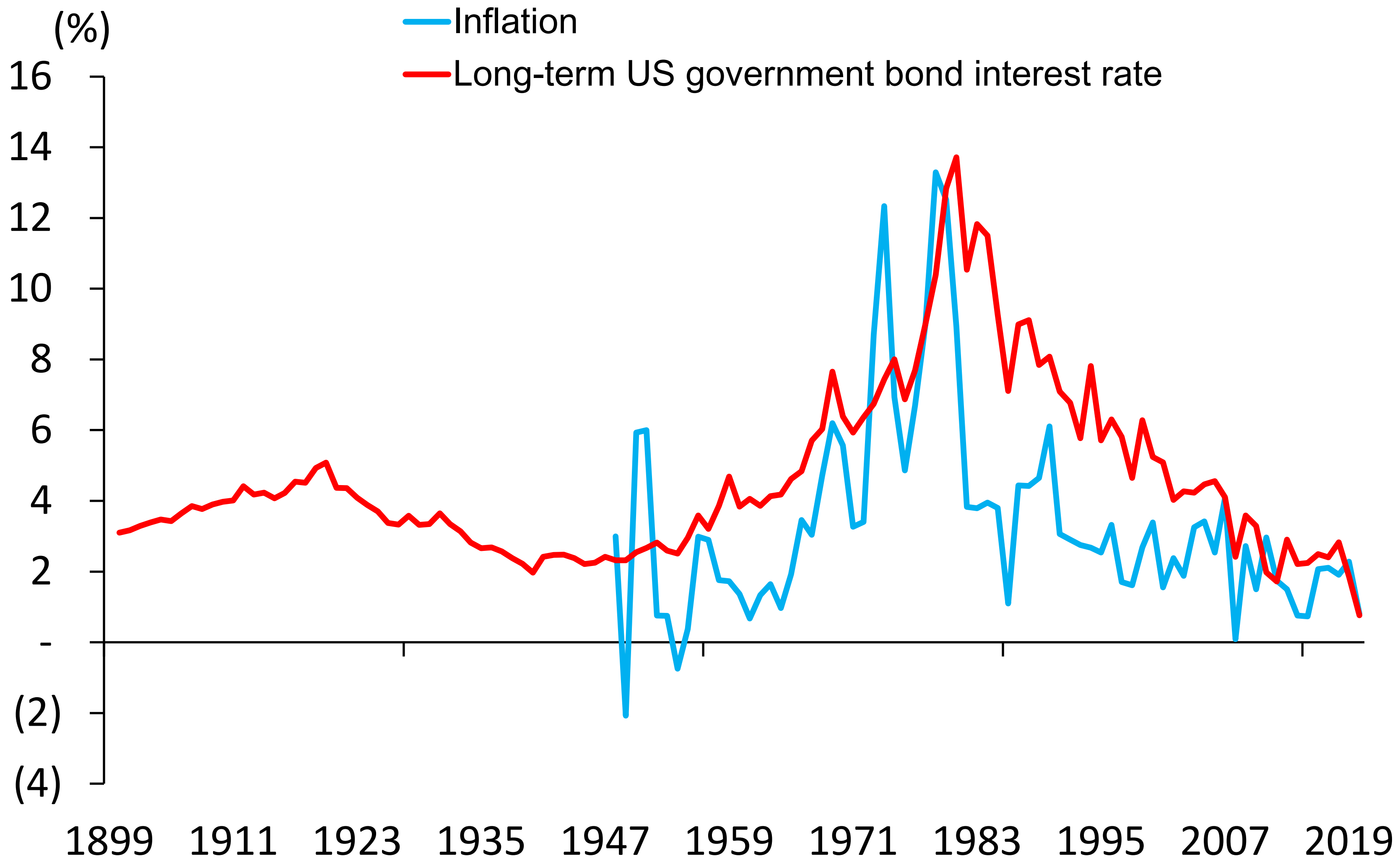
Lowest risk – Government bonds – Review



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- ⋆ Inflation is a main driver of gov't bond interest rates rise
- ⋆ Investors demand a higher return to compensate them for higher expected inflation

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Lowest risk – Government bonds – Review

- Interest rates are at all-time lows
- If inflation rises, then interest rates will rise
- If interest rates rise, then the value of bonds will fall

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Lowest risk – Government bonds – Review

- So if you could protect against inflation, you would not suffer so much when interest rates rise

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Introducing TIPS

- In 1997 the US government created U.S. Treasury inflation-protected bonds (TIPS) to provide an instrument that protects investors against the risk of inflation

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Introducing TIPS

- The first bond was a 10-year maturity, now there are many maturities

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Introducing TIPS

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- TIPS preserve the purchasing power of your dollars more effectively than depositing your money in a bank

Introducing TIPS

- Also, TIPS dramatically reduce the risk of a loss in value if interest rates rise

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Introducing TIPS

- The way the government does this is by adjusting the principal amount that will be returned to you at redemption

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Introducing TIPS

- The way the government does this is by an adjustment that compensates you for changes in inflation as measured by the US Consumer Price Index (CPI)

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Introducing TIPS

- TIPS are issued with a fixed coupon rate, but since that rate is multiplied against a principal amount that is changing, then the actual coupon payment you receive will change

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Introducing TIPS

- These bonds generate a lower long-term return compared to traditional US government bonds, but in exchange, you earn enough to keep up with inflation

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Introducing TIPS

- As of the start of 2020, the US government had issued 44 TIPS bonds with a combined value of about $1.5 trillion

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Introducing TIPS

- Short-term TIPS tend to be less volatile than longer-term TIPS and have so far offered the best protection against inflation

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Introducing TIPS

- ★ The typical investor can buy a basket of all TIPS through a TIPS fund or ETF that tracks an index of TIPS bonds

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Some bond investment options

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★ Next, let's consider the options you have for the bond portion of your portfolio

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Three main bond portion options

- Simple – Lowest risk and return
- More complex – Some inflation risk, but slightly higher return

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Three main bond portion options

- ★ Most complex – Some additional credit risk from corporate bonds, but slightly higher return

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Simple option

- ★ Lowest risk and return
- ★ 100% gov't TIPS

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Simple option – Choose one of these 5

US Gov't TIPS bonds only	Code	Fee (%)	# of bonds	AUM (US$bn)
Vanguard Inflation-Protected Securities Fund	VIPSX	0.20	41	30
Vanguard ST Inflation-Protected Securities Fund	VTAPX	0.06	16	34
Vanguard ST Inflation-Protected Securities ETF	VTIP	0.05	16	34
iShares TIPS Bond ETF	TIP	0.19	42	20
Schwab U.S. TIPS ETF	SCHP	0.05	44	9

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- These funds/ETFs give the best exposure to US government TIPS at the lowest cost
- April 2020

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More complex option

★ Some inflation risk, but slightly higher return
★ 50% typical gov't bonds
★ 50% gov't TIPS

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More complex option – Choose one of these 3

US Gov't bonds only	Code	Fee (%)	# of bonds	AUM (US$bn)
Vanguard Intermediate-Term Treasury Index Fund	VSIGX	0.07	118	9
Vanguard Intermediate-Term Treasury ETF	VGIT	0.05	118	9
iShares US Treasury Bond ETF	GOVT	0.15	193	17

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- These three funds/ETF give the best exposure to US gov't bonds at the lowest cost
- April 2020

Most complex option

★ Slightly higher risk, higher return
★ 40% gov't TIPS, 60% mix of gov't and corporate bonds; which effectively means

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Most complex option

- ★ 40% in TIPS
- ★ 60% mix of gov't and corporate bonds
  - 36% in US gov't bonds
  - 24% in corporate bonds

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Most complex option – Choose one of these 5

US Gov't & Corp bonds	Code	Fee (%)	# of bonds	AUM (US$bn)
Vanguard Total Bond Market Index Fund (60% gov't)	VBTLX	0.05	8,233	269
Vanguard Total Bond Market ETF (60% gov't)	BND	0.04	8,233	269
iShares Core U.S. Aggregate Bond ETF (40% gov't)	AGG	0.05	7,642	69
Schwab U.S. Aggregate Bond Index Fund (40% gov't)	SWAGX	0.04	5,860	4
Schwab U.S. Aggregate Bond ETF (40% gov't)	SCHZ	0.04	4,404	8

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★ These funds/ETFs give you the best exposure to all the government and corporate bonds issued in the US at the lowest cost

Open the financial plan file and enter this info

Estimate the return on bonds and your allocation to stocks and bonds	
Your age rounded down to 10, 20, 30, 40, 50, etc.	20
110 minus your rounded down age	90
Your expected annual return from bonds (no more than 5%)	3.0

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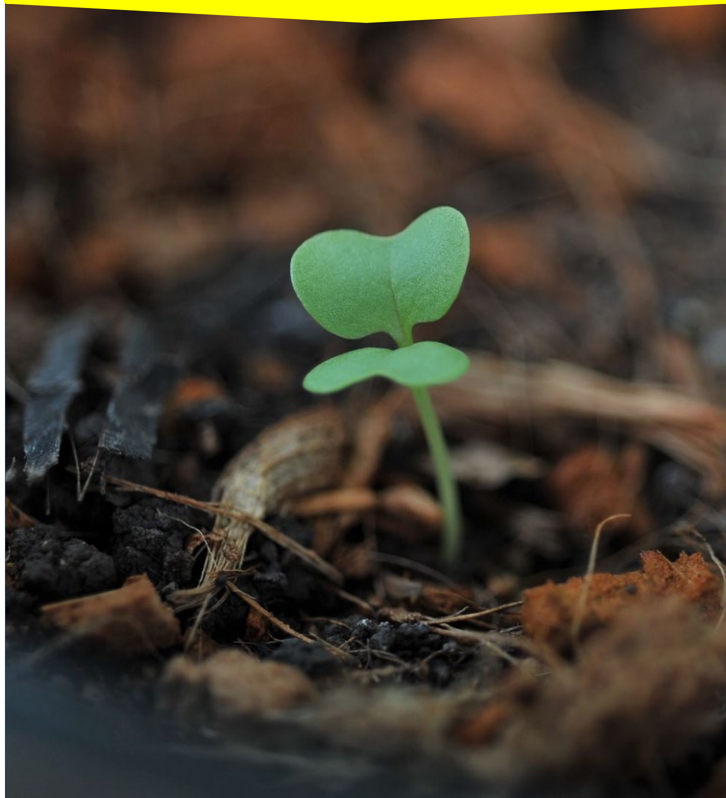

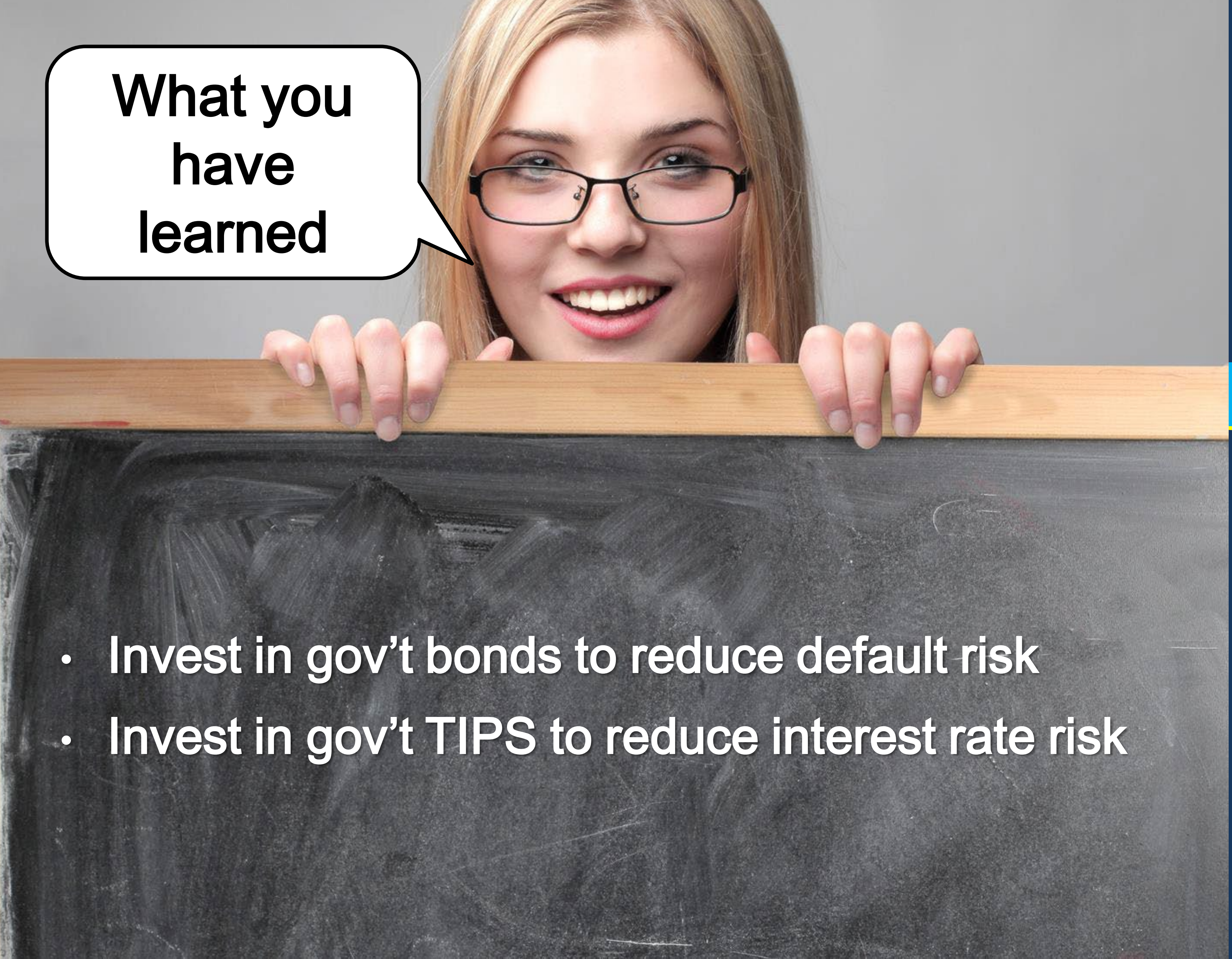

What you have learned

- Invest in gov't bonds to reduce default risk
- Invest in gov't TIPS to reduce interest rate risk

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Ignore bonds in favor of stocks

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Own both stocks and bonds

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