

Financial Literacy with Mr. 401(k)
[‘FinLit with Mr. 401(k)’]
Winter Term 2023-2024
January 29, 2024

Time Value of Money Class 20: Inflation and Interest

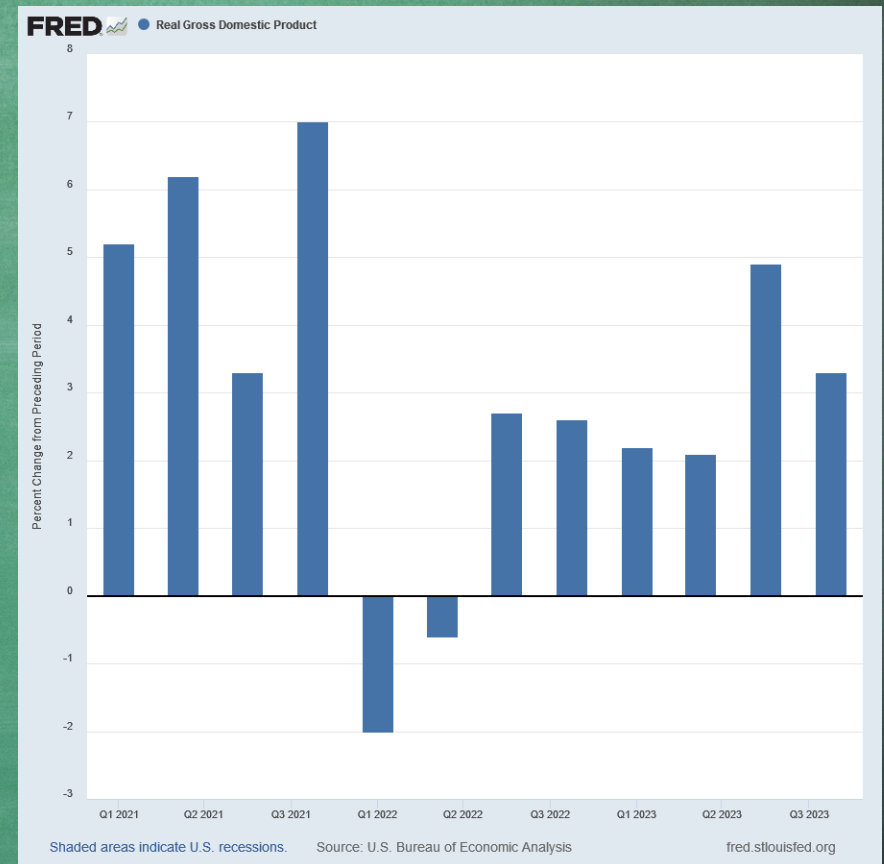


Monday Money Matter\$

Gross Domestic Product ("GDP"), is a measure of all the goods and services produced in an economy. GDP increased at a 3.3% annualized rate in the fourth quarter of 2023. Expectations were 2%. Consumer spending and government spending helped to drive the expansion.

Reference Date: January 25, 2024

Source: <https://www.cnbc.com/2024/01/25/gdp-q4-2023-the-us-economy-grew-at-a-3point3percent-pace-in-the-fourth-quarter.html>





Class Discussion

*Why are people
happy when
they receive
money in a
birthday card?*



Class Discussion

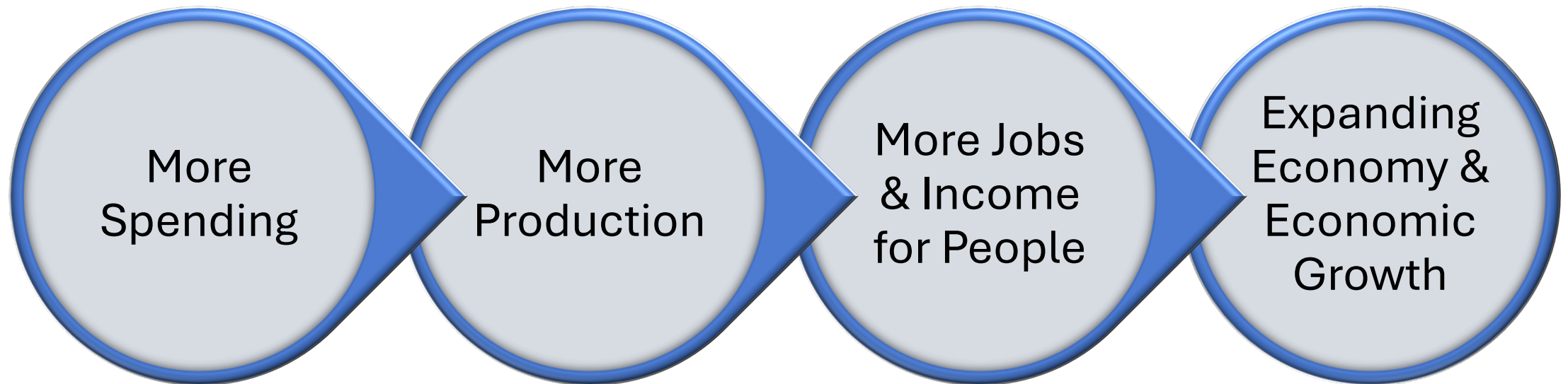
*Would your
spending change
if you had more
money? How?*



Class Discussion

Do you think spending good for the economy? Why or why not?

In General, Spending Can Help Spur Economic Growth





Class Discussion

If more money results in more spending, and more spending can drive economic growth, should the government just continuously add money to the economy?

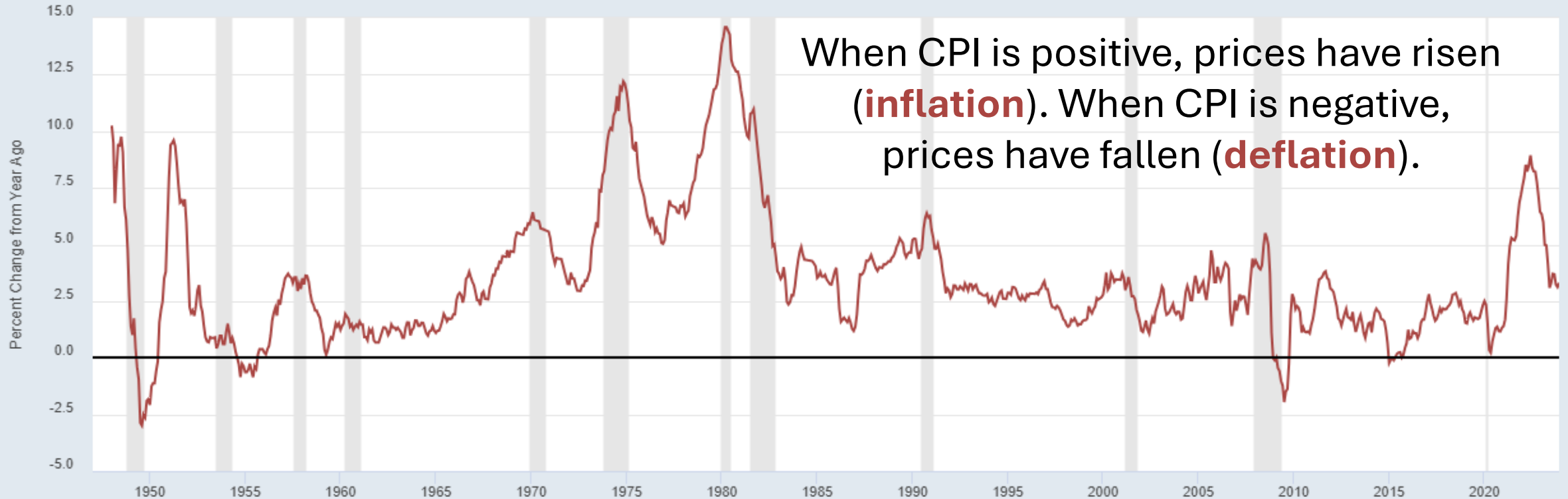
The general rise in the prices of goods, services, and information over time.

Inflation

Many Methods to Measure Inflation

The Consumer Price Index (“CPI”) is most common

FRED — Consumer Price Index for All Urban Consumers: All Items in U.S. City Average



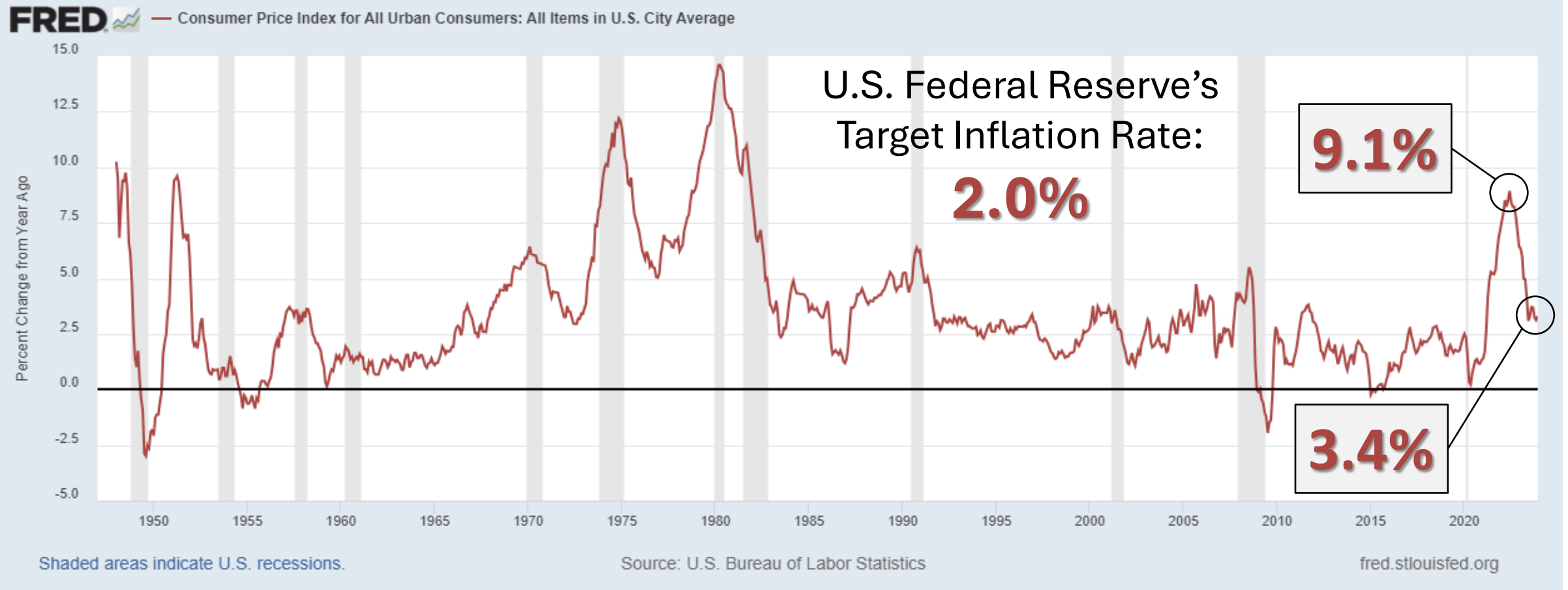
Shaded areas indicate U.S. recessions.

Source: U.S. Bureau of Labor Statistics

fred.stlouisfed.org

Many Methods to Measure Inflation

The Consumer Price Index (“CPI”) is most common



High Inflation Leads to...



Decreased Consumer Spending

Lower spending means less economic activity, lowering economic growth, and potentially triggering recession



Increased Costs of Business

Businesses struggle with costs and slow hiring leading, which may lead to higher unemployment rates



Higher Interest Rates

Central banks try to fight inflation with higher interest rates, resulting in higher borrowing costs



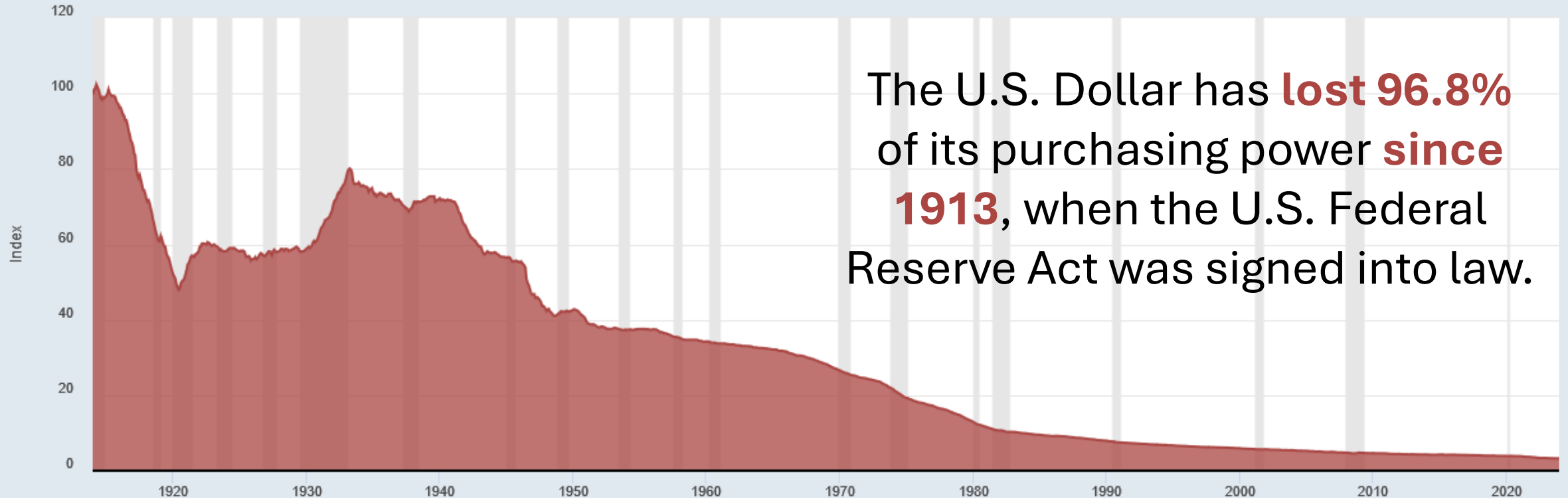
Faster Purchasing Power Losses

Money loses value faster, so future money must be “discounted” at higher rates

How does inflation affect us?

The purchasing power of our money erodes over time.

FRED ● Consumer Price Index for All Urban Consumers: Purchasing Power of the Consumer Dollar in U.S. City Average, Dec 1913=100



The U.S. Dollar has **lost 96.8%** of its purchasing power **since 1913**, when the U.S. Federal Reserve Act was signed into law.

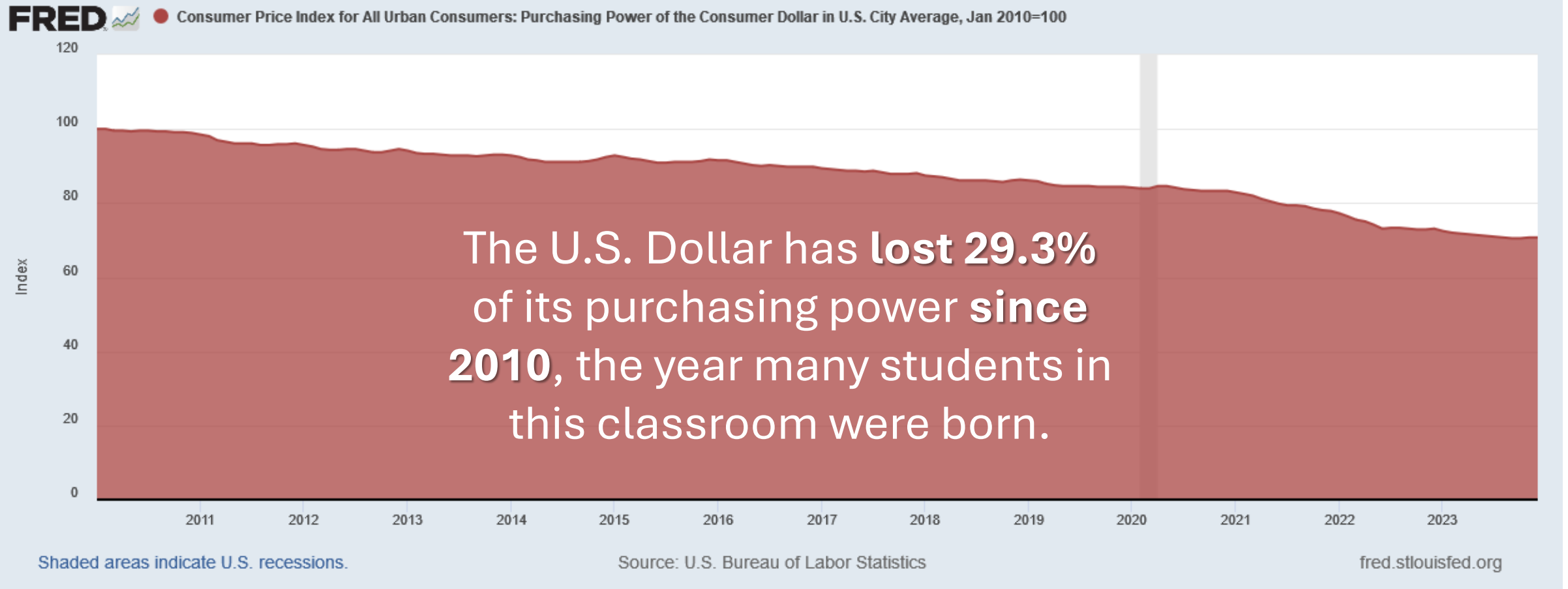
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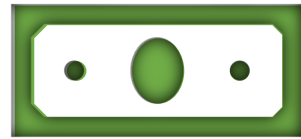
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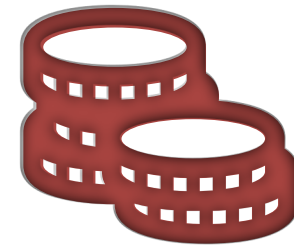
Losing Purchasing Power

What does it mean to lose purchasing power?



\$1.00

January 2010



\$0.71

January 2024

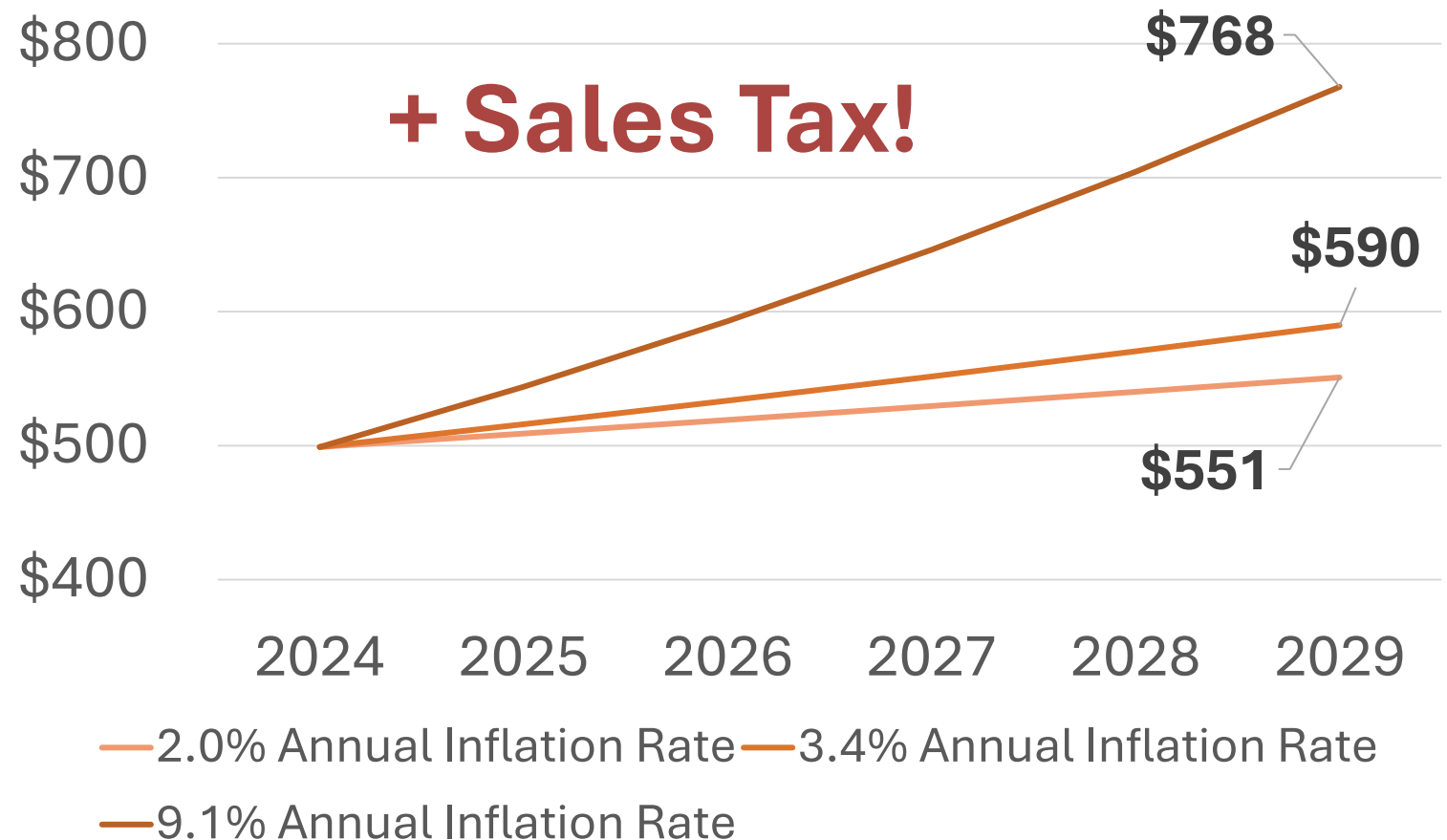
How does inflation affect us?

The stuff we need or want may cost more in the future.



Xbox Series X

Current Price \$499 + Sales Tax
Current Seattle Sales Tax = 10%

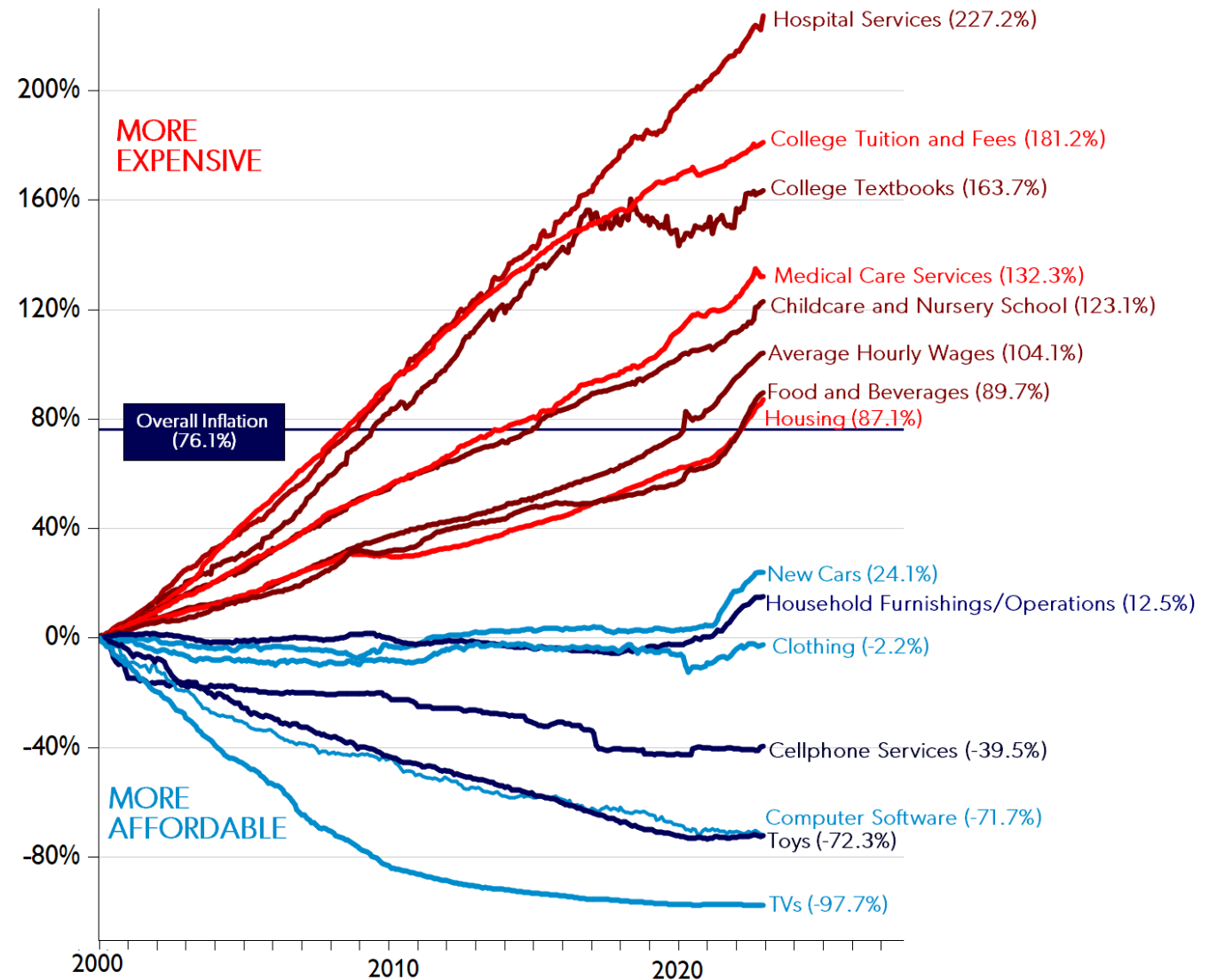


Price Changes on Selected Goods and Services, Wages

Goods and services inflate (or deflate) at different rates. Categories that benefit from technology innovations and obsolescence tend to deflate.

Price Changes: January 2000 to December 2022

Selected US Consumer Goods and Services, Wages

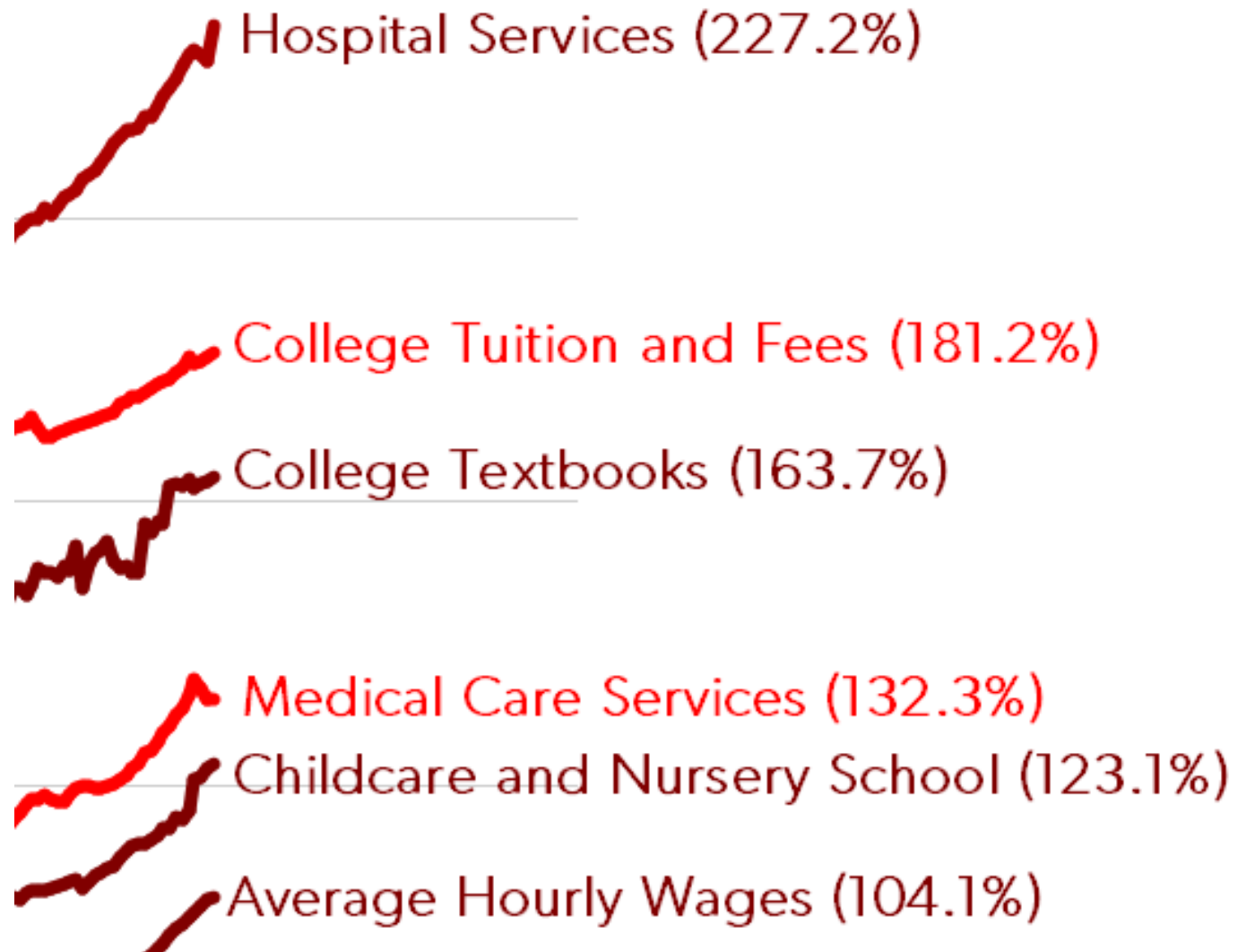


Source: Bureau of Labor Statistics

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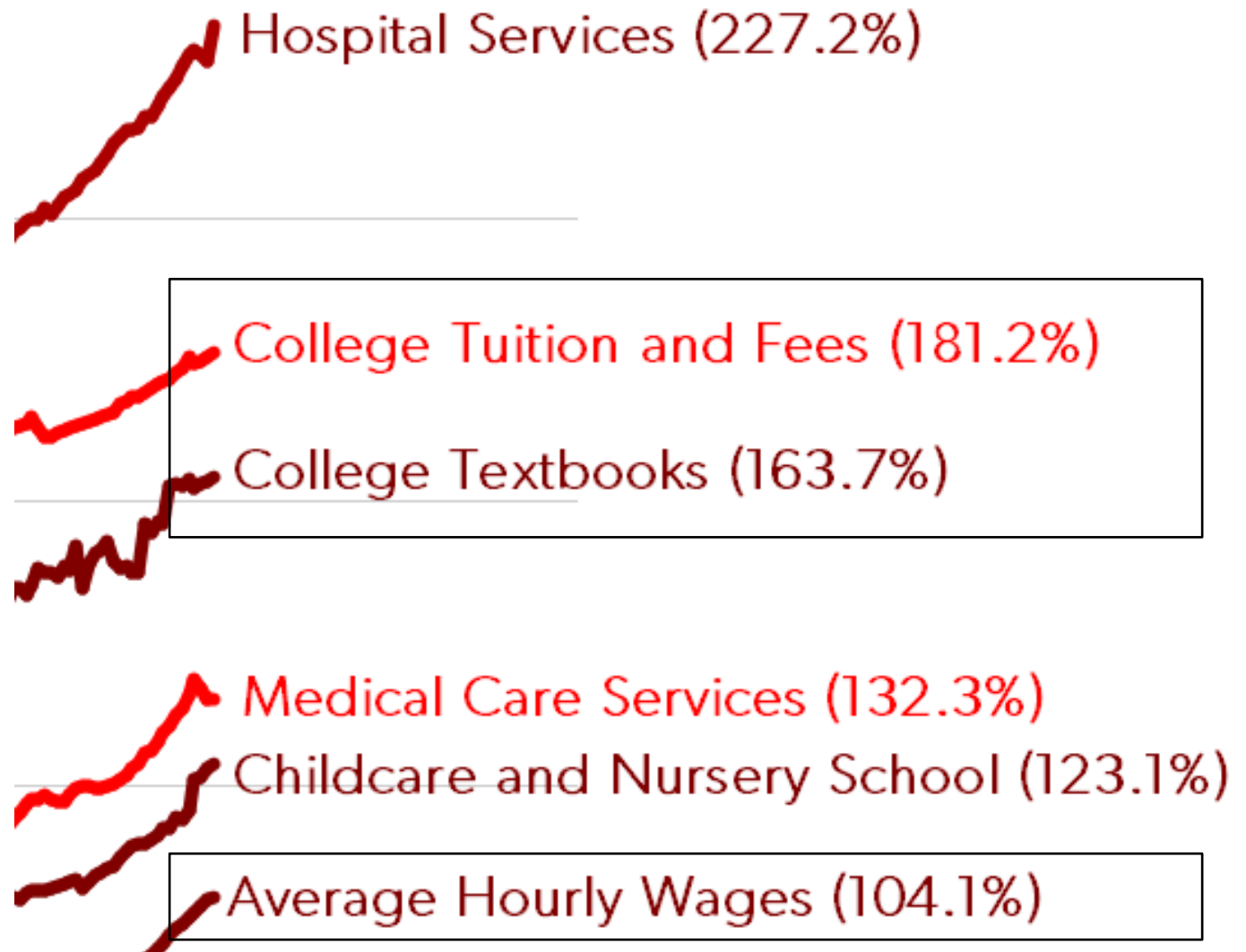
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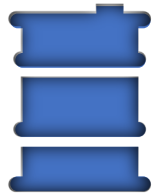




Class Discussion

If you know the things you need and want will cost more in the future, how does that change what you do with your money today?

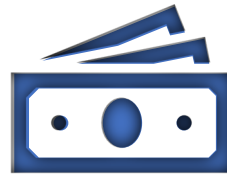
What Causes Inflation?



Supply Shocks

Major disruptions to important economic inputs, like oil can drive prices higher.

Cost-push inflation



Gov't Spending & Money Supply

More money in an economy chasing the same amount of goods and services can drive prices higher.

Demand-pull inflation



Expectations and Price Spirals

If people anticipate higher prices, they negotiate for higher wages; if businesses expect higher input costs, they increase prices.

Wage-price spirals

What Causes Inflation?

Milton Friedman was an American economist who received the 1976 Nobel Prize in Economics for his research on consumption analysis, monetary history and theory and the complexity of stabilization policy.



[Watch Video Clip on YouTube](https://www.youtube.com/watch?v=F94jGTWNWsA)

Source: <https://www.youtube.com/watch?v=F94jGTWNWsA>

**The monetary charge for
the privilege of borrowing
money.**

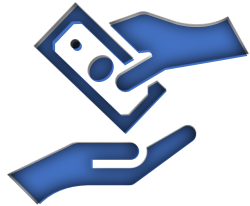
Interest



Class Discussion

*Why is interest
important in
our financial
system?*

Interest Payments Entice Lending



Default Risk

Lenders require compensation for the risk of borrowers defaulting on loans



Inflation Risk

Lenders require compensation to preserve purchasing power eroded by inflation



Opportunity Cost

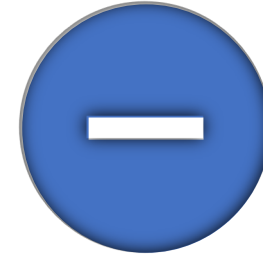
Without interest payments, lenders would rather do something else with their money

Interest for Borrowers



Pros

May be a result of much-needed capital (mortgage, business expansion, etc.); May be worth the expense during emergencies; May be used to generate higher profits.



Cons

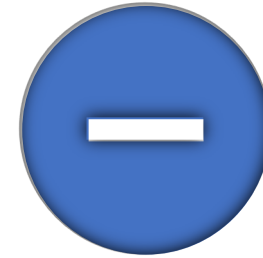
Contractually obligated to be paid; May become overwhelming for borrowers to overcome; Real, often monthly, payments require cash outlays; Typically paid before any principal balance is paid.

Interest for Lenders



Pros

Might be a more efficient use of capital than alternatives; Provides cash flow if interest payments are collected routinely; Provides consistent stream of income if the borrower is reliable; Source of passive income.



Cons

Passive income may be less than what lenders could have earned elsewhere; Increases income tax liability; May create negative attention (Ex. loan shark).

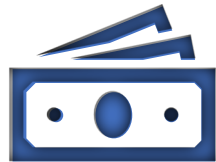
Method of calculating the interest on an asset or liability where the interest is calculated only on the principal

Simple Interest

Simple Interest Formula



=



×



×



Simple Interest
Amount

Principal
Amount

Interest Rate

Time in Years

Practical Application

Jane makes a \$1,000 loan to John at a 10% annual **simple interest** rate. John repays the loan principal + interest after exactly 1-year.

1. How much interest did John pay to Jane?

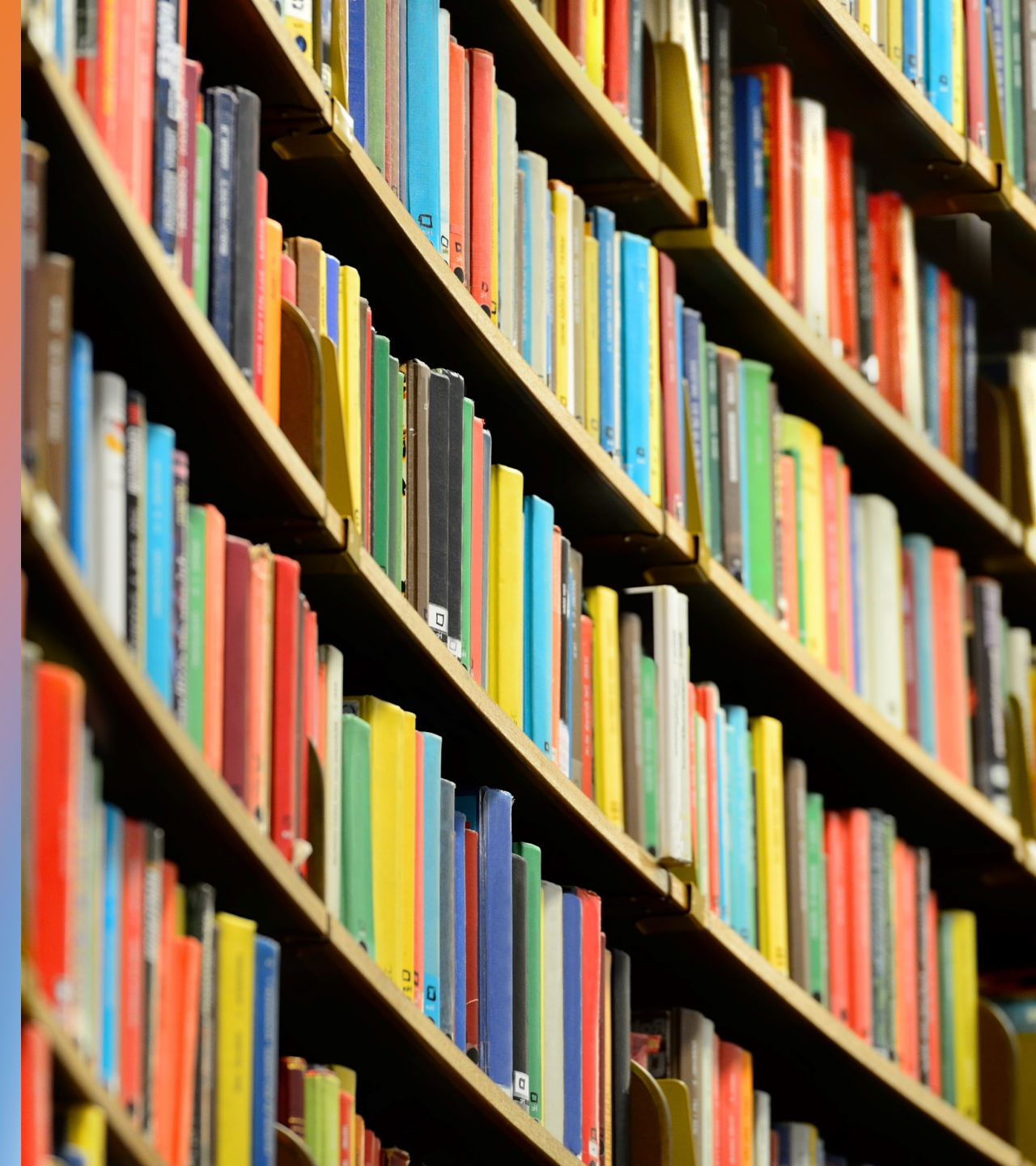
Now, suppose John paid the loan principal + interest at the end of the 3rd year.

2. How much interest did John pay to Jane?



Three Key Takeaways

1. Inflation is the general rise in the price of goods, services, and information over time.
2. Many factors cause inflation including supply shocks, money in circulation, and people's inflation expectations.
3. Interest is the cost of borrowing money, and such payments are necessary for credit creation.



Where to Learn More

- [Interest: Definition and Types of Fees for Borrowing Money](#) by James Chen via Investopedia
- [Teaching About Money, Spending, and Inflation Using a Classroom Inflation Auction](#) by Scott Wolla, Ph.D., Federal Reserve Bank of St. Louis
- Video: [What is Inflation in 2 Minutes](#), by Tuttle Twins