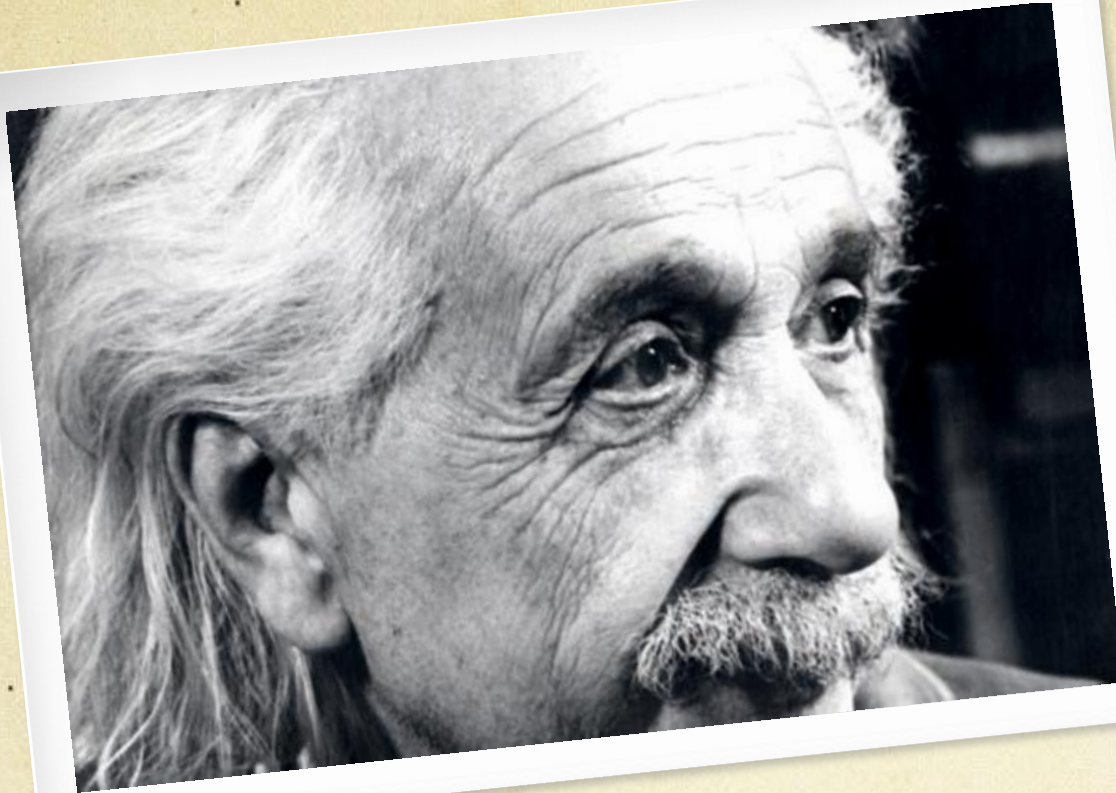


***THE RULE OF 72**

**The most important and simple rule
to financial success.**



How are Albert Einstein and the Rule of 72 related?

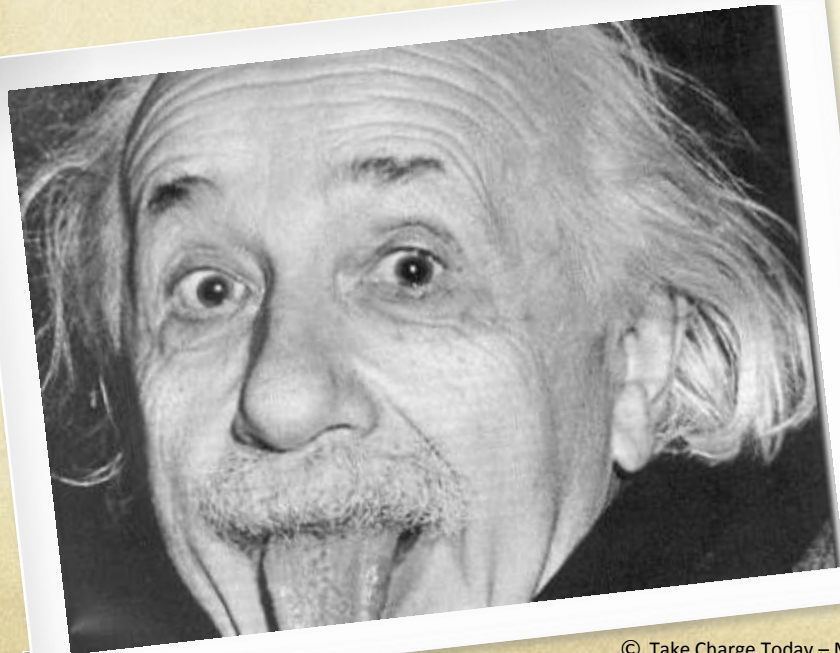
* **Albert Einstein**

The
RULE of

72

$$T = P(1 + I/N)^{YN}$$

Credited for
discovering the
mathematical
equation for
compounding
interest



* **THE RULE OF 72**

How long it will take for money to double using compounding interest

$$T = P(I + I/N)^{YN}$$

The interest rate an investment must earn to double in a time period

How many times money will double in a specified time period

* Things to know about the Rule of 72

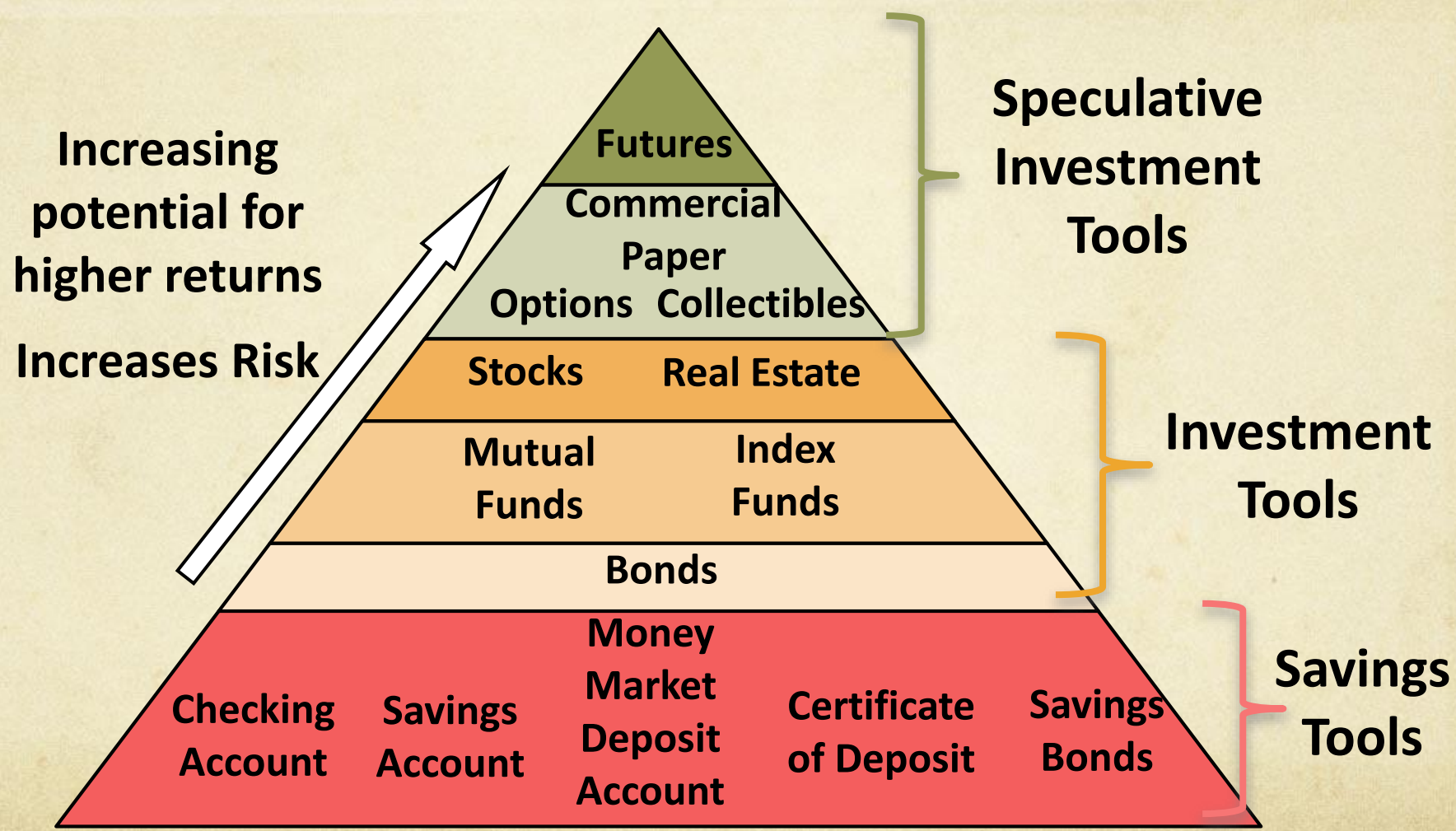
It's only an approximation

Assumes the interest rate stays constant

Does not allow for additional payments to original amount

Does not account for taxes

Financial Risk Pyramid



* Doug's Certificate of Deposit

Doug invested \$2,500
into a Certificate of Deposit earning a 4% interest rate.
How long will it take Doug's investment to double?

- Invested \$2,500
- Interest Rate is 4%

$$\frac{72}{4\%} = 18 \text{ years to double investment}$$

* Another Example

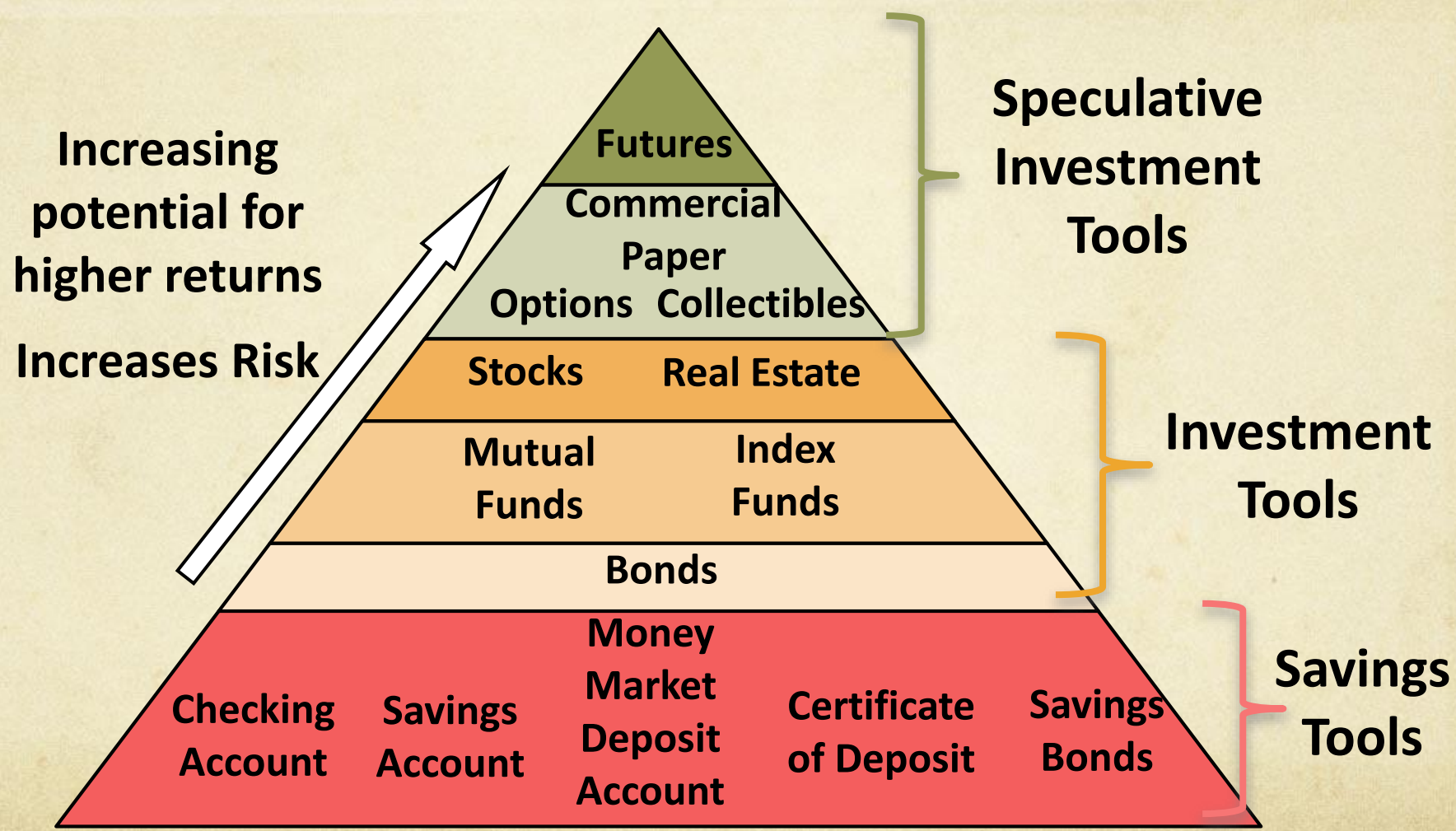
The average stock market return
since 1926 has been 11%

72 = 6.5 years to double investment

11%

Therefore, historically, every 6.5 years
investments in the stock market have doubled

Financial Risk Pyramid



A Stock Investment Example

- * An investment of \$5,000 made today, with a return of 5% will take how many years to double?

$$\frac{72}{5.5\%} = 13.1 \text{ years to double investment}$$

- * Value of the investment in 13.1 years = \$ 10,000

* Can the Rule be applied to debt?

YES

- * It can show how fast a debt can double
- * It can show the impact of interest rates on debt

* Jessica's Credit Card Debt

- * Jessica has a \$2,200 balance on her credit card with an 18% interest rate.
- * If Jessica chooses to not make any payments and does not receive late charges, how long will it take for her balance to double?

\$2,200 balance on credit card
18% interest rate

$$\frac{72}{18\%} = 4 \text{ years to double debt}$$

* Sylvia's Debt

- * \$2,200 balance on credit card
- * 22% interest rate

$$\frac{72}{22\%} = 3.27 \text{ years to double debt}$$

* Jacob's Car

- * Jacob currently has \$5,000 that he wants to invest in a car after he graduates in 4 years. What interest rate will he need to double his money?
- \$5,000 to invest
- Wants investment to double in 4 years

$$\frac{72}{4 \text{ years}} = 18\% \text{ interest rate}$$

* Rhonda's Treasury Note

Rhonda is 22 years old and would like to invest \$2,500 into a U.S. Treasury Note earning 3.25% interest. How many times will Rhonda's investment double before she withdraws it at age 66 1/2?

$$\frac{72}{3.25\%} = 22.2 \text{ years to double investment}$$

Age	Investment
22	\$2,500
44.2	\$5,000
66.4	\$10,000

* Seth's Investment

- \$2,500 invested at age 18
- 5% interest
- How many times will investment double by age 62?

$$\frac{72}{5\%} = 14.4 \text{ years to double investment}$$

Age	Investment
18	\$2,500
32.4	\$5,000
46.8	\$10,000
61.2	\$20,000

A person can choose to invest into two types of accounts:

Taxed Account – taxes are paid on money before it is invested

Tax Deferred Account – taxes are not paid until the individual withdraws the money from the investment

* Taxes Example

- * George is in the 33% tax bracket. He would like to invest \$100,000, and is comparing two accounts that have a 6% interest rate.

#1 An account that uses money on which George has already paid tax.

#2 An account that is tax-deferred until he withdraws the money.

Which account should George choose?

* Effects of taxes

Taxed Account
Earning 4% after taxes

$$\frac{72}{4\%} = 18 \text{ years}$$

to double investment

Tax Deferred Account

$$\frac{72}{6\%} = 12 \text{ years}$$

to double investment

Years	Taxable	Tax Deferred
12		\$200,000
18	\$200,000	
24		\$400,000
36	\$400,000	\$800,000

* The Rule of 72

How long it will take
for money to double
using compounding
interest

$$T = P(I + I/N)^{YN}$$

The interest rate an
investment must
earn to double in a
time period

How many times
money will double
in a specified time
period

* Things to know about the Rule of 72

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* **Any questions?**