Key Variables of Retirement Portfolio Survival

AAII Puget Sound
Nov 4, 2021

Craig L. Israelsen, Ph.D.
7Twelve® Portfolio

1

Key Variables

- **Asset allocation of retirement portfolio**

2

Key Variables

- **Asset allocation of retirement portfolio**
- **Fixed-dollar withdrawals OR percentage-based withdrawals**

3

Key Variables

- **Asset allocation of retirement portfolio**
- **Fixed-dollar withdrawals OR percentage-based withdrawals**
- **Portfolio cost**

4

Key Variables

- **Asset allocation of retirement portfolio**
- **Fixed-dollar withdrawals OR percentage-based withdrawals**
- **Portfolio cost**
- **Inflation during the time period**

5

Key Variables

- **Asset allocation of retirement portfolio**
- **Fixed-dollar withdrawals OR percentage-based withdrawals**
- **Portfolio cost**
- **Inflation during the time period**
- **Fixed COLA or "Smart" COLA**

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Key Variables

- Asset allocation of retirement portfolio
- Fixed-dollar withdrawals OR percentage-based withdrawals
- Portfolio cost
- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)

7

Key Variables

- Asset allocation of retirement portfolio
- Fixed-dollar withdrawals OR percentage-based withdrawals
- Portfolio cost
- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)
- RMD

8

Key Variables

- Asset allocation of retirement portfolio
- Fixed-dollar withdrawals OR percentage-based withdrawals
- Portfolio cost
- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)
- RMD
- Relevance of historical returns since 1926

9

Key Variables

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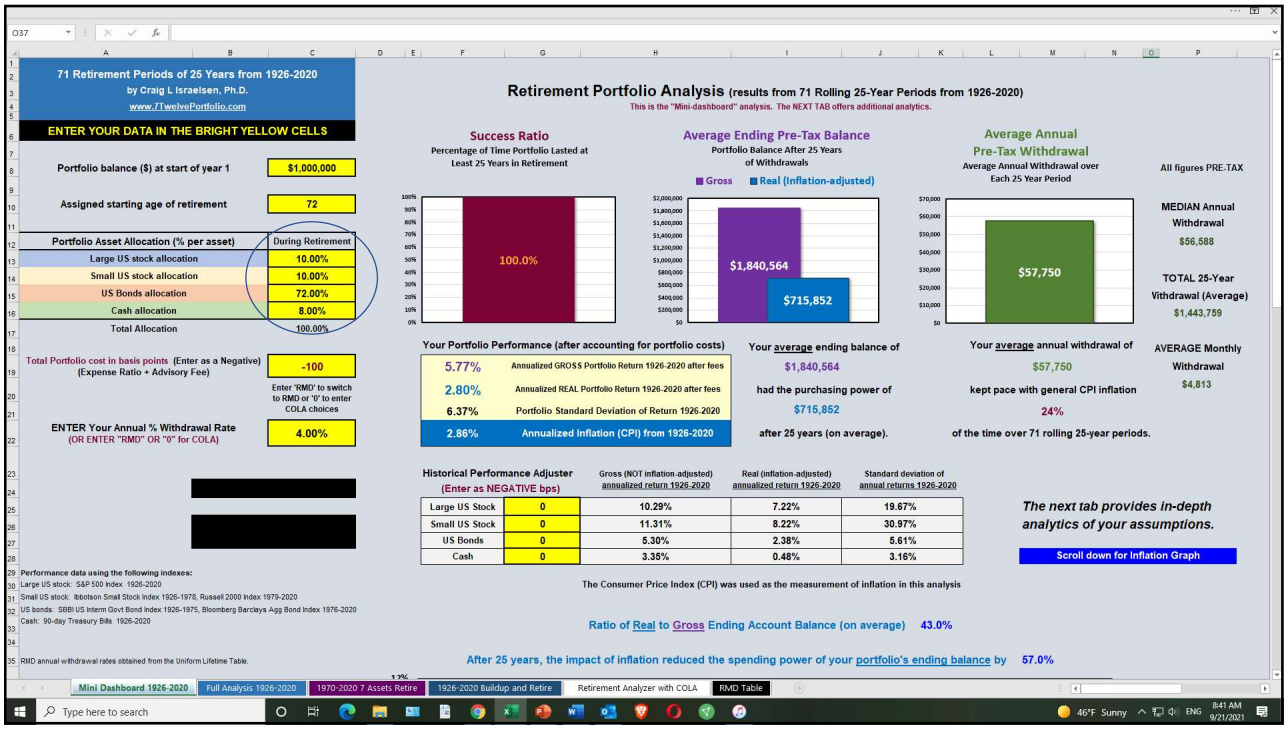
10


71 Retirement Periods of 25 Years from 1926-2020
by Craig L Israelsen, Ph.D.
www.7TwelvePortfolio.com
ENTER YOUR DATA IN THE BRIGHT YELLOW CELLS
Portfolio balance ($) at start of year 1
$1,000,000
Assigned starting age of retirement
72
Portfolio Asset Allocation (% per asset)
During Retirement
Large US stock allocation
10.00%
Small US stock allocation
10.00%
US Bonds allocation
72.00%
Cash allocation
8.00%
Total Allocation
100.00%
Total Portfolio cost in basis points (Enter as a Negative) (Expense Ratio + Advisory Fee)
-100
Enter 'RMD' to switch to RMD or '0' to enter COLA choices
ENTER Your Annual % Withdrawal Rate (OR ENTER "RMD" OR "0" for COLA)
4.00%
Performance data using the following indexes:
Large US stock: S&P 500 Index 1926-2020
Small US stock: Ibbotson Small Stock Index 1926-1978, Russell 2000 Index 1979-2020
US bonds: SBBI US Interm Govt Bond Index 1926-1975, Bloomberg Barclays Agg Bond Index 1976-2020
Cash: 90-day Treasury Bills 1926-2020
RMD annual withdrawal rates obtained from the Uniform Lifetime Table.
Retirement Portfolio Analysis (results from 71 Rolling 25-Year Periods from 1926-2020)
This is the "Mini-dashboard" analysis. The NEXT TAB offers additional analytics.
Success Ratio
Percentage of Time Portfolio Lasted at Least 25 Years in Retirement
100.0%
Average Ending Pre-Tax Balance
Portfolio Balance After 25 Years of Withdrawals
Gross
Real (Inflation-adjusted)
$1,840,564
$715,852
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$57,750
All figures PRE-TAX
MEDIAN Annual Withdrawal
$56,588
TOTAL 25-Year Withdrawal (Average)
$1,443,759
AVERAGE Monthly Withdrawal
$4,813
Your Portfolio Performance (after accounting for portfolio costs)
5.77% Annualized GROSS Portfolio Return 1926-2020 after fees
2.80% Annualized REAL Portfolio Return 1926-2020 after fees
6.37% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $1,840,564 had the purchasing power of $715,852 after 25 years (on average).
Your average annual withdrawal of $57,750 kept pace with general CPI inflation 24% of the time over 71 rolling 25-year periods.
Historical Performance Adjuster (Enter as NEGATIVE bps)
Gross (NOT inflation-adjusted) annualized return 1926-2020
Real (inflation-adjusted) annualized return 1926-2020
Standard deviation of annual returns 1926-2020
Large US Stock 0 10.29% 7.22% 19.67%
Small US Stock 0 11.31% 8.22% 30.97%
US Bonds 0 5.30% 2.38% 5.61%
Cash 0 3.35% 0.48% 3.16%
The next tab provides in-depth analytics of your assumptions.
Scroll down for Inflation Graph
The Consumer Price Index (CPI) was used as the measurement of inflation in this analysis
Ratio of Real to Gross Ending Account Balance (on average) 43.0%
After 25 years, the impact of inflation reduced the spending power of your portfolio's ending balance by 57.0%
Mini Dashboard 1926-2020
Full Analysis 1926-2020
1970-2020 7 Assets Retire
1926-2020 Buildup and Retire
Retirement Analyzer with COLA
RMD Table
Type here to search
46°F Sunny
8:41 AM
9/21/2021

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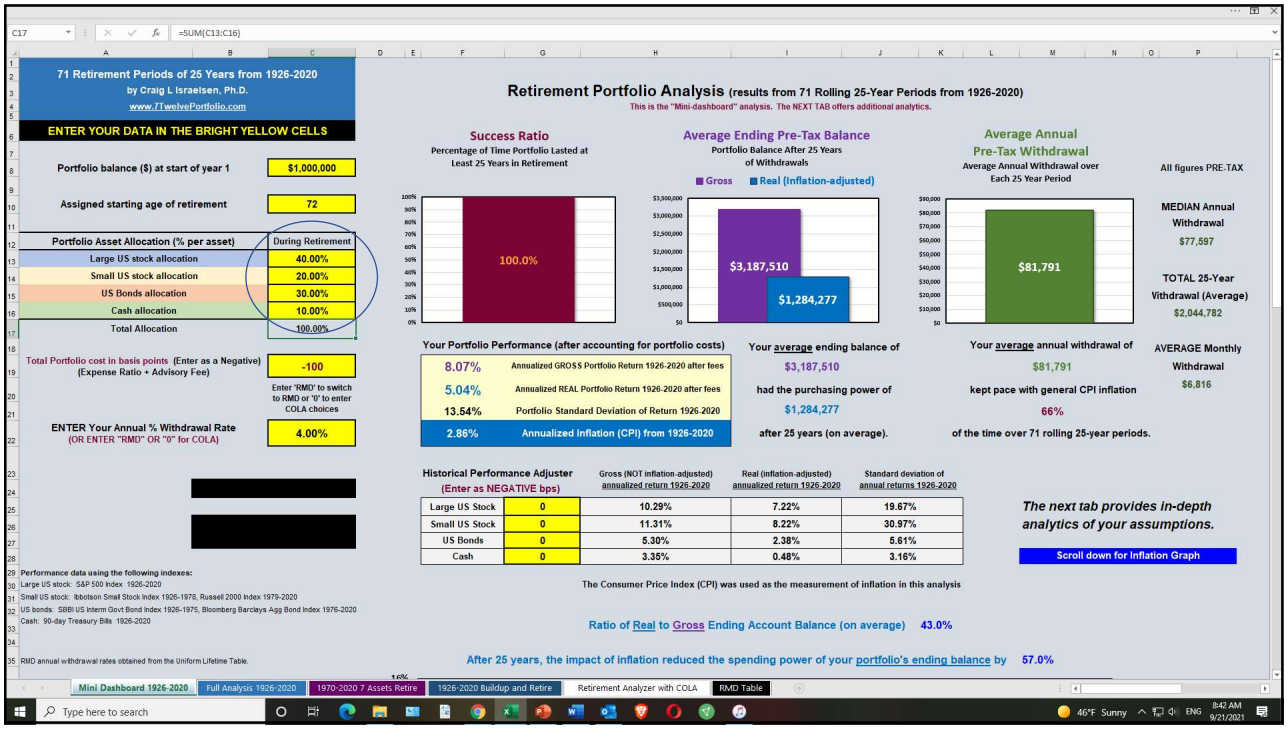
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Assigned starting age of retirement
72
Portfolio Asset Allocation (% per asset)
During Retirement
Large US stock allocation
40.00%
Small US stock allocation
20.00%
US Bonds allocation
30.00%
Cash allocation
10.00%
Total Allocation
100.00%
Total Portfolio cost in basis points (Enter as a Negative) (Expense Ratio + Advisory Fee)
-100
Enter 'RMD' to switch to RMD or '0' to enter COLA choices
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Success Ratio
Percentage of Time Portfolio Lasted at Least 25 Years in Retirement
100.0%
Average Ending Pre-Tax Balance
Portfolio Balance After 25 Years of Withdrawals
Gross
Real (Inflation-adjusted)
$3,187,510
$1,284,277
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$81,791
All figures PRE-TAX
MEDIAN Annual Withdrawal
$77,597
TOTAL 25-Year Withdrawal (Average)
$2,044,782
AVERAGE Monthly Withdrawal
$6,816
Your Portfolio Performance (after accounting for portfolio costs)
8.07% Annualized GROSS Portfolio Return 1926-2020 after fees
5.04% Annualized REAL Portfolio Return 1926-2020 after fees
13.54% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $3,187,510 had the purchasing power of $1,284,277 after 25 years (on average).
Your average annual withdrawal of $81,791 kept pace with general CPI inflation 66% of the time over 71 rolling 25-year periods.
Historical Performance Adjuster (Enter as NEGATIVE bps)
Gross (NOT inflation-adjusted) annualized return 1926-2020
Real (inflation-adjusted) annualized return 1926-2020
Standard deviation of annual returns 1926-2020
Large US Stock 0 10.29% 7.22% 19.67%
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RMD Table
Type here to search
46°F Sunny
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Key Variables

- Asset allocation of retirement portfolio
- Fixed-dollar withdrawals OR percentage-based withdrawals
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- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)
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- Relevance of historical returns since 1926

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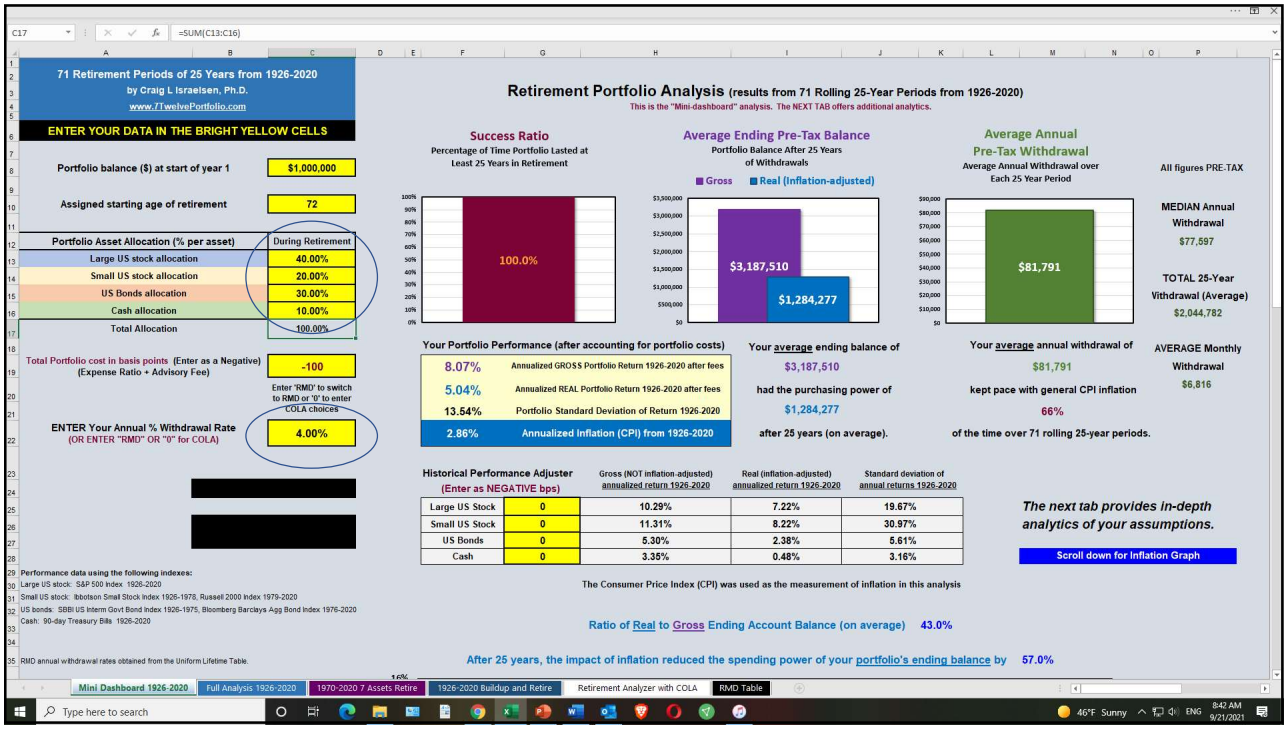

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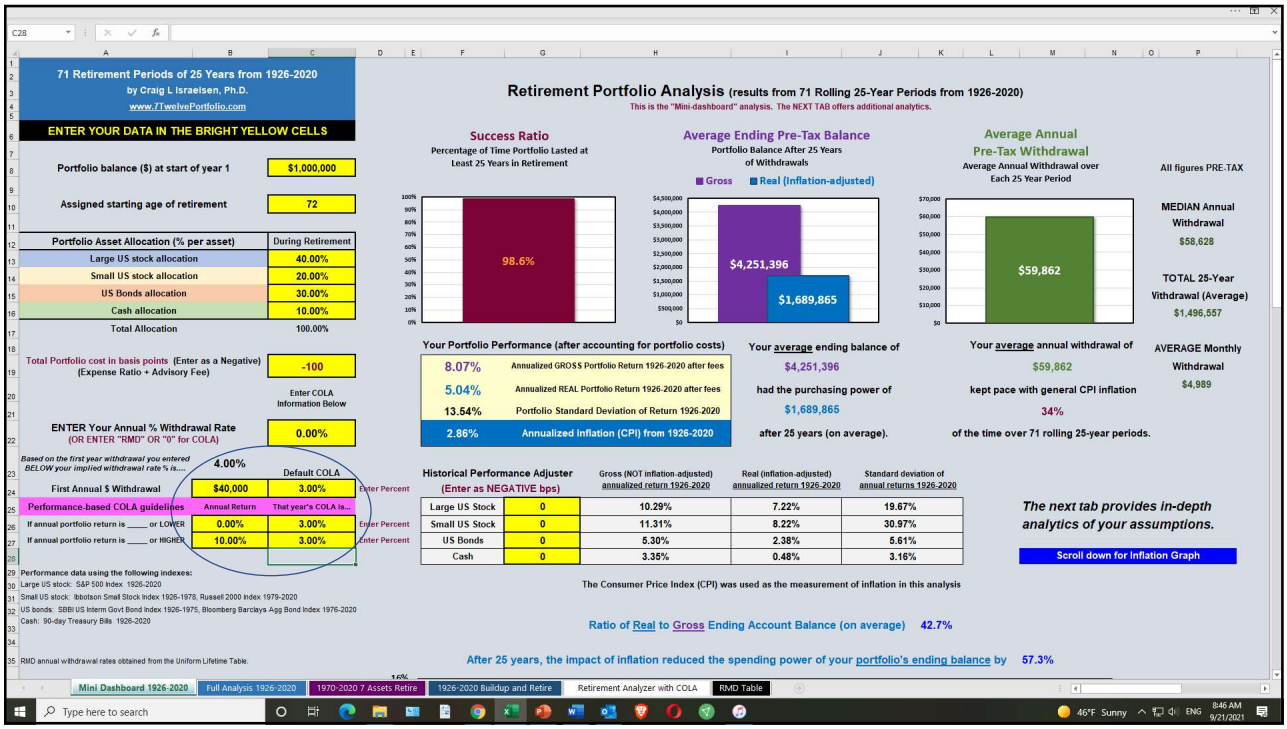
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ENTER YOUR DATA IN THE BRIGHT YELLOW CELLS
Portfolio balance ($) at start of year 1 $1,000,000
Assigned starting age of retirement 72
Portfolio Asset Allocation (% per asset) During Retirement
Large US stock allocation 40.00%
Small US stock allocation 20.00%
US Bonds allocation 30.00%
Cash allocation 10.00%
Total Allocation 100.00%
Total Portfolio cost in basis points (Enter as a Negative) (Expense Ratio + Advisory Fee) -100
Enter COLA Information Below
ENTER Your Annual % Withdrawal Rate (OR ENTER "RMD" OR "0" for COLA) 0.00%
4.00%
Default COLA
First Annual $ Withdrawal $40,000 3.00% Enter Percent
Performance-based COLA guidelines Annual Return That year's COLA is...
If annual portfolio return is ____ or LOWER 0.00% 3.00% Enter Percent
If annual portfolio return is ____ or HIGHER 10.00% 3.00% Enter Percent
Performance data using the following indexes:
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Success Ratio
Percentage of Time Portfolio Lasted at Least 25 Years in Retirement
98.6%
Average Ending Pre-Tax Balance
Portfolio Balance After 25 Years of Withdrawals
Gross Real (Inflation-adjusted)
$4,251,396
$1,689,865
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$59,862
All figures PRE-TAX
MEDIAN Annual Withdrawal $58,628
TOTAL 25-Year Withdrawal (Average) $1,496,557
AVERAGE Monthly Withdrawal $4,989
Your Portfolio Performance (after accounting for portfolio costs)
8.07% Annualized GROSS Portfolio Return 1926-2020 after fees
5.04% Annualized REAL Portfolio Return 1926-2020 after fees
13.54% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $4,251,396 had the purchasing power of $1,689,865 after 25 years (on average).
Your average annual withdrawal of $59,862 kept pace with general CPI inflation 34% of the time over 71 rolling 25-year periods.
Historical Performance Adjuster (Enter as NEGATIVE bps)
Gross (NOT inflation-adjusted) annualized return 1926-2020
Real (inflation-adjusted) annualized return 1926-2020
Standard deviation of annual returns 1926-2020
Large US Stock 0 10.29% 7.22% 19.67%
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Type here to search
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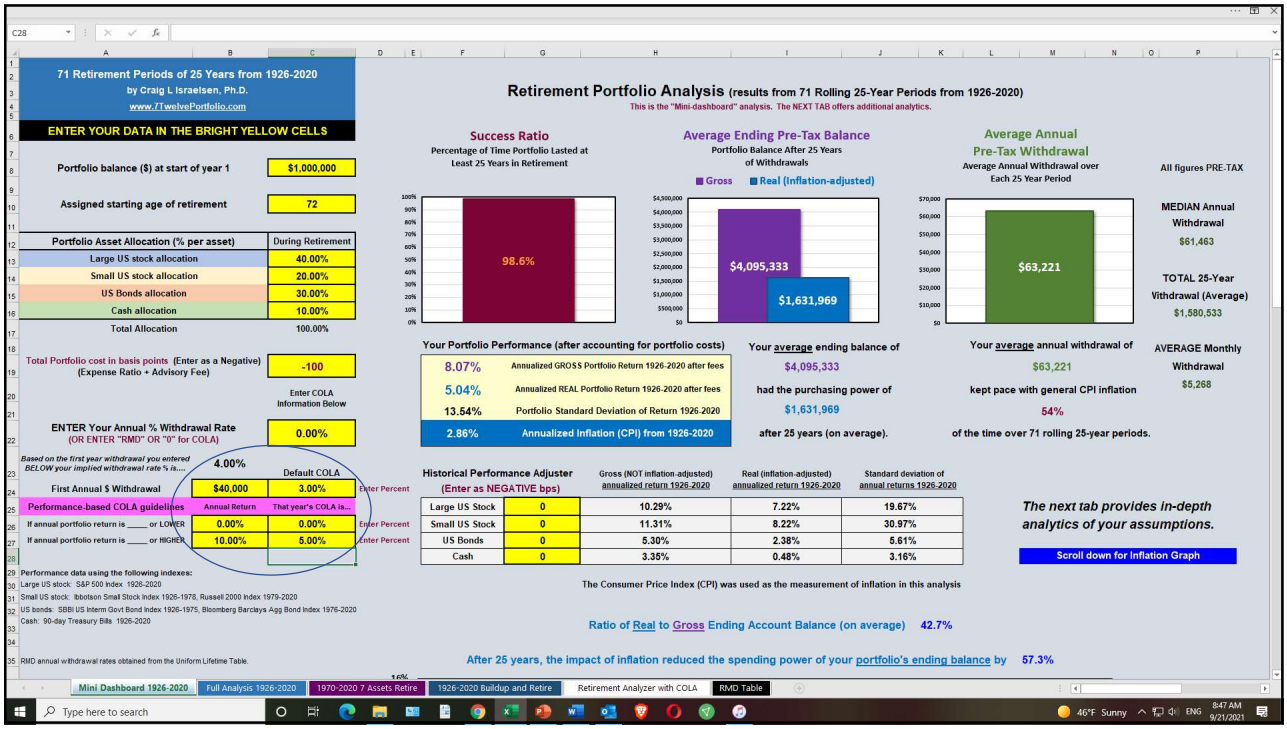
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Default COLA
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98.6%
Average Ending Pre-Tax Balance
Portfolio Balance After 25 Years of Withdrawals
Gross Real (Inflation-adjusted)
$4,095,333
$1,631,969
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$63,221
All figures PRE-TAX
MEDIAN Annual Withdrawal $61,463
TOTAL 25-Year Withdrawal (Average) $1,580,533
AVERAGE Monthly Withdrawal $5,268
Your Portfolio Performance (after accounting for portfolio costs)
8.07% Annualized GROSS Portfolio Return 1926-2020 after fees
5.04% Annualized REAL Portfolio Return 1926-2020 after fees
13.54% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $4,095,333 had the purchasing power of $1,631,969 after 25 years (on average).
Your average annual withdrawal of $63,221 kept pace with general CPI inflation 54% of the time over 71 rolling 25-year periods.
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Retirement Analyzer with COLA
RMD Table
Type here to search
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Key Variables

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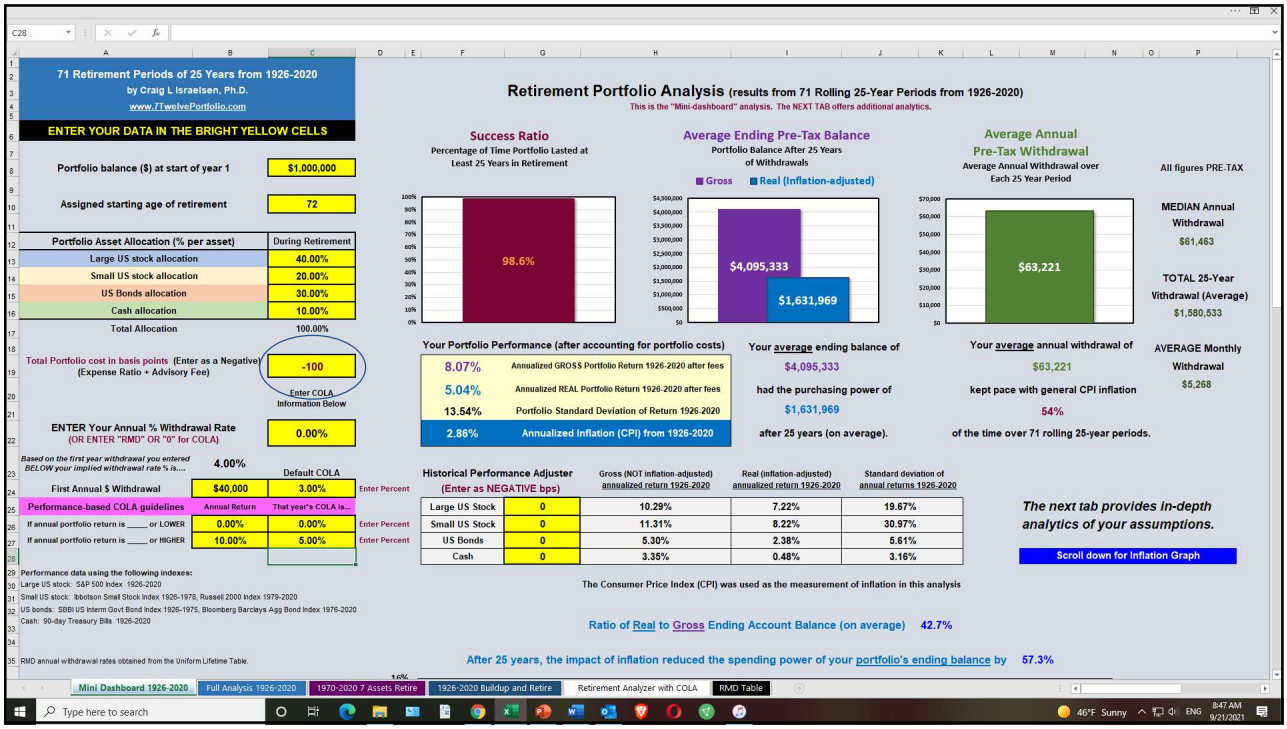
- Fixed-dollar withdrawals OR percentage-based withdrawals
- Portfolio cost
- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)
- RMD
- Relevance of historical returns since 1926

17



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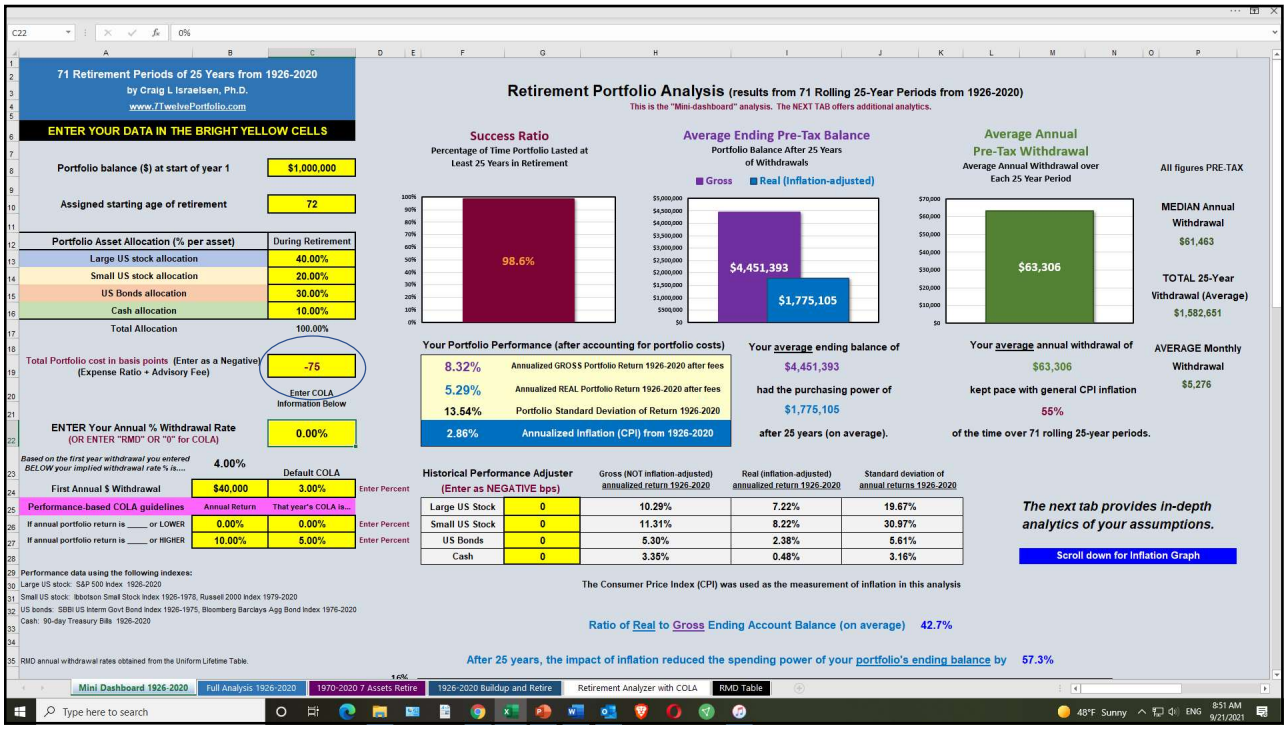

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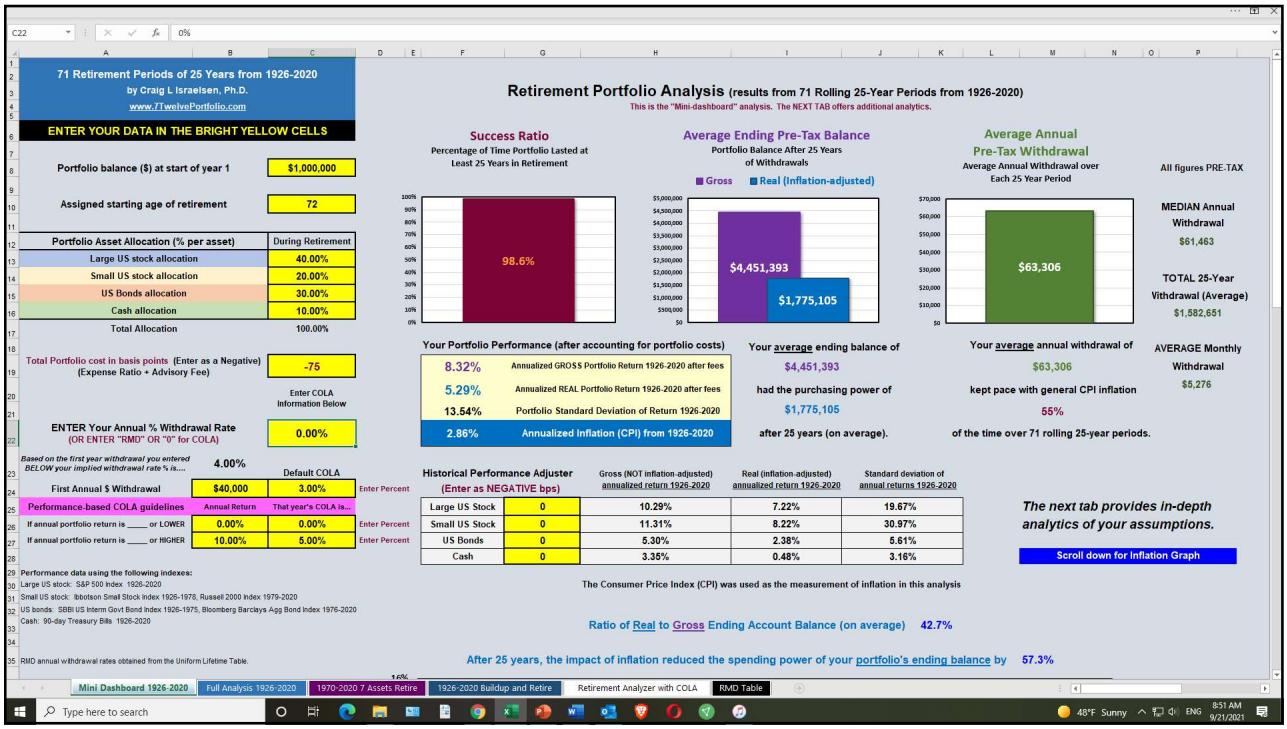
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$1,000,000
Assigned starting age of retirement
72
Portfolio Asset Allocation (% per asset)
During Retirement
Large US stock allocation
40.00%
Small US stock allocation
20.00%
US Bonds allocation
30.00%
Cash allocation
10.00%
Total Allocation
100.00%
Total Portfolio cost in basis points (Enter as a Negative) (Expense Ratio + Advisory Fee)
-75
Enter COLA Information Below
ENTER Your Annual % Withdrawal Rate (OR ENTER "RMD" OR "0" for COLA)
0.00%
4.00%
Default COLA
First Annual $ Withdrawal
$40,000
3.00%
Enter Percent
Performance-based COLA guidelines
Annual Return
That year's COLA is...
If annual portfolio return is ____ or LOWER
0.00%
0.00%
If annual portfolio return is ____ or HIGHER
10.00%
5.00%
Performance data using the following indexes:
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Portfolio Balance After 25 Years of Withdrawals
Gross
Real (Inflation-adjusted)
$4,451,393
$1,775,105
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$63,306
All figures PRE-TAX
MEDIAN Annual Withdrawal
$61,463
TOTAL 25-Year Withdrawal (Average)
$1,582,651
AVERAGE Monthly Withdrawal
$5,276
Your Portfolio Performance (after accounting for portfolio costs)
8.32% Annualized GROSS Portfolio Return 1926-2020 after fees
5.29% Annualized REAL Portfolio Return 1926-2020 after fees
13.54% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $4,451,393 had the purchasing power of $1,775,105 after 25 years (on average).
Your average annual withdrawal of $63,306 kept pace with general CPI inflation 55% of the time over 71 rolling 25-year periods.
Historical Performance Adjuster (Enter as NEGATIVE bps)
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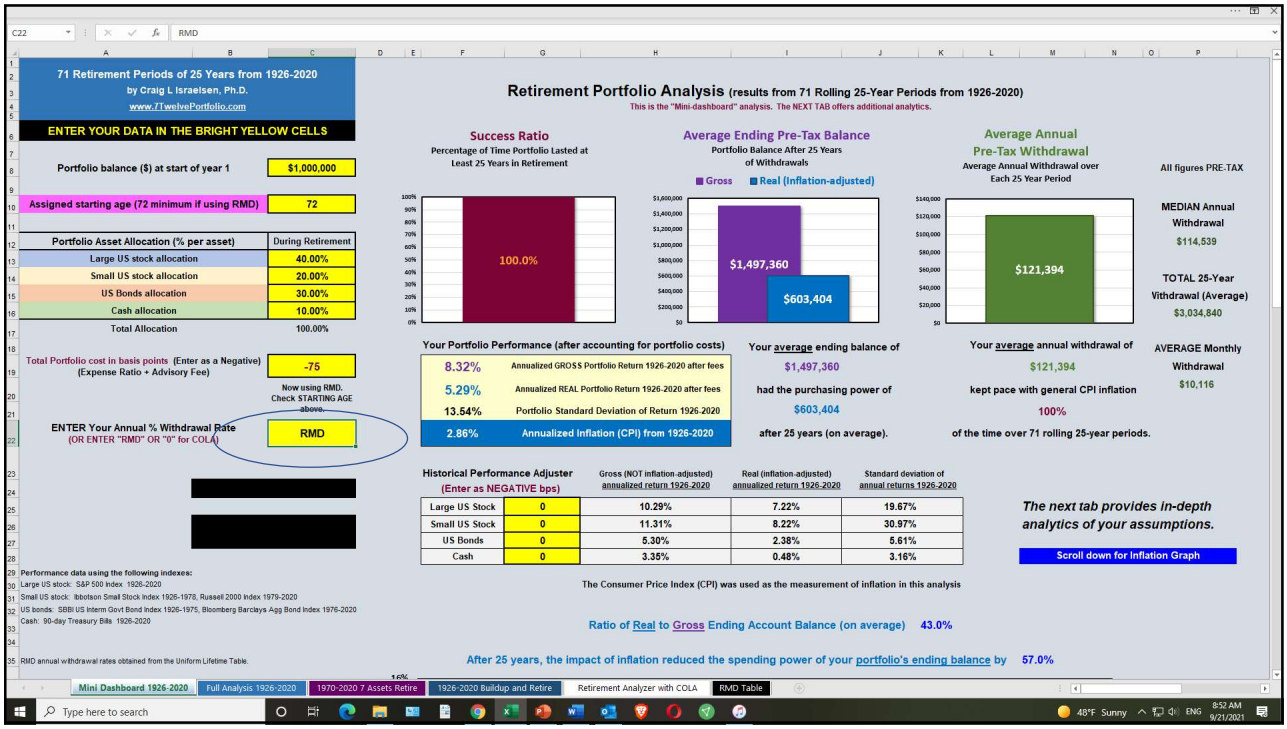
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$1,000,000
Assigned starting age (72 minimum if using RMD)
72
Portfolio Asset Allocation (% per asset)
During Retirement
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40.00%
Small US stock allocation
20.00%
US Bonds allocation
30.00%
Cash allocation
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Total Allocation
100.00%
Total Portfolio cost in basis points (Enter as a Negative) (Expense Ratio + Advisory Fee)
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Now using RMD. Check STARTING AGE above.
ENTER Your Annual % Withdrawal Rate (OR ENTER "RMD" OR "0" for COLA)
RMD
Performance data using the following indexes:
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100.0%
Average Ending Pre-Tax Balance
Portfolio Balance After 25 Years of Withdrawals
Gross
Real (Inflation-adjusted)
$1,497,360
$603,404
Average Annual Pre-Tax Withdrawal
Average Annual Withdrawal over Each 25 Year Period
$121,394
All figures PRE-TAX
MEDIAN Annual Withdrawal
$114,539
TOTAL 25-Year Withdrawal (Average)
$3,034,840
AVERAGE Monthly Withdrawal
$10,116
Your Portfolio Performance (after accounting for portfolio costs)
8.32% Annualized GROSS Portfolio Return 1926-2020 after fees
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13.54% Portfolio Standard Deviation of Return 1926-2020
2.86% Annualized Inflation (CPI) from 1926-2020
Your average ending balance of $1,497,360 had the purchasing power of $603,404 after 25 years (on average).
Your average annual withdrawal of $121,394 kept pace with general CPI inflation 100% of the time over 71 rolling 25-year periods.
Historical Performance Adjuster (Enter as NEGATIVE bps)
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- Inflation during the time period
- Fixed COLA or "Smart" COLA
- Starting balance (in terms of income adequacy)
- RMD
- Relevance of historical returns since 1926

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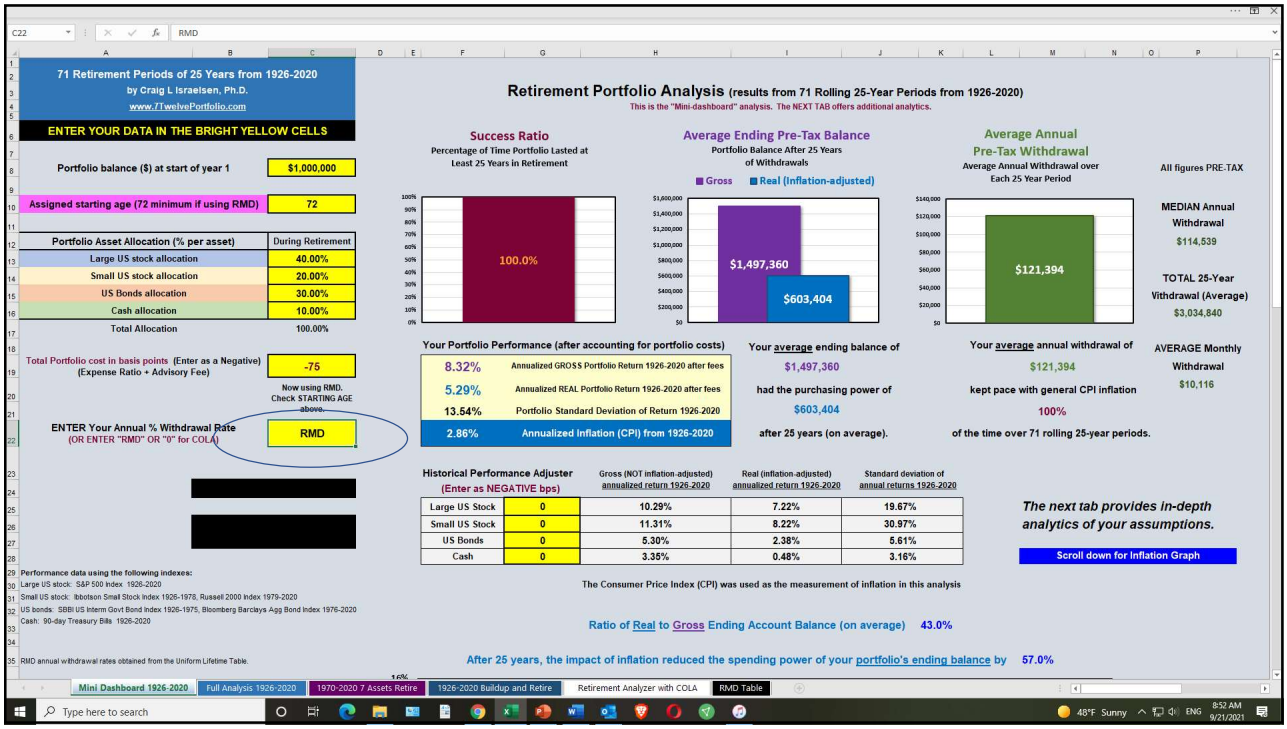

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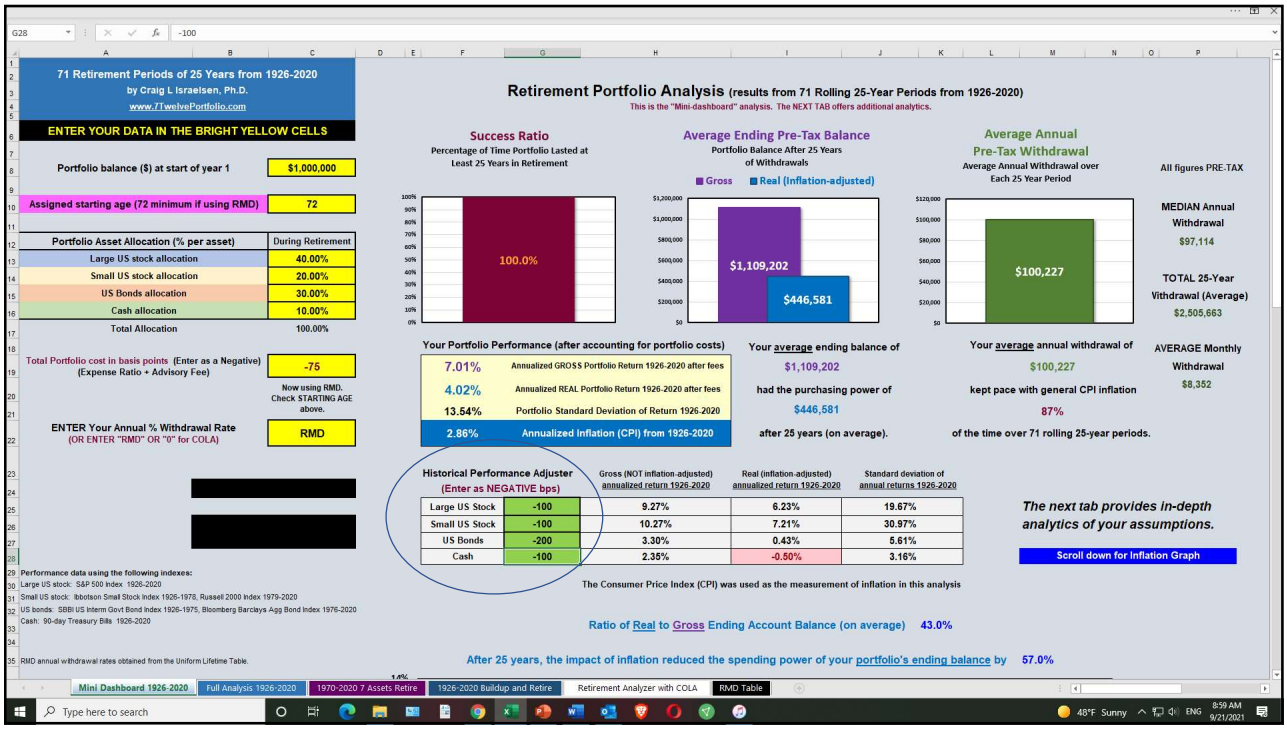

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Key Variables

- **Asset allocation of retirement portfolio**
- **Fixed-dollar withdrawals OR percentage-based withdrawals**
- **Portfolio cost**
- **Inflation during the time period**
- **Fixed COLA or "Smart" COLA**
- **Starting balance (in terms of income adequacy)**
- **RMD**
- **Relevance of historical returns since 1926**

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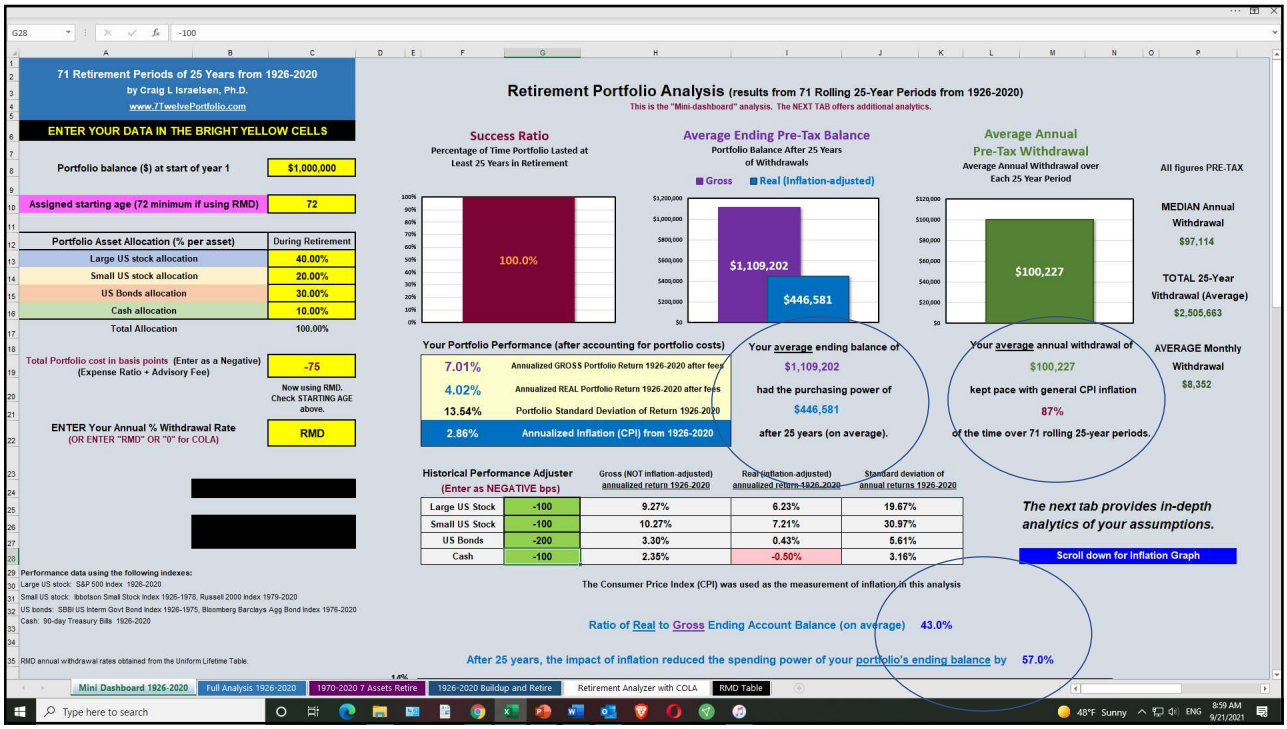

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Go to “live” spreadsheet

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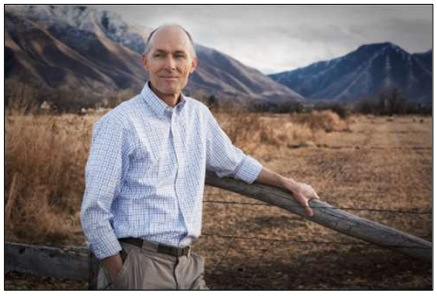

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