by Dr. John R. Brock (primary researcher) and Jerome V. Bruni

The tables on this and the following pages show the results of saving the relatively modest maximum allowable IRA contribution each year, starting in 1973 for an assumed 25 -year-old worker, and continuing through 2013, when the worker turned 65. (To illustrate results for a career from age 25 to 65, we assumed IRA accounts were available in 1973, versus their actual 1975 inception date.) Each year's contribution was assumed to be equally divided into 12 monthly installments, with the first installment made at the end of January 1973. We assumed investment performance that equaled that of the S\&P 500 Stock Index. Starting in 2002, workers age 50 or older were allowed somewhat higher contribution limits, and we incorporated these higher limits in 2002 (when our sample worker was 54) through 2013. Rather than try to quantify the tax advantages of IRA contributions, we simply point out that these tax advantages made it easier to contribute to IRA accounts.

Discussion continued $\qquad$

| Year End: | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Worker's Age: | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
| Annual IRA <br> Contribution: | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 | 2,000 | 2,000 |
| Cumulative <br> Contributions: | 1,500 | 3,000 | 4,500 | 6,000 | 7,500 | 9,000 | 10,500 | 12,000 | 14,000 | 16,000 |
| Annual S\&P <br> 500 Return: | $-14.69 \%$ | $-26.47 \%$ | $37.23 \%$ | $23.93 \%$ | $-7.16 \%$ | $6.57 \%$ | $18.61 \%$ | $32.50 \%$ | $-4.92 \%$ | $21.55 \%$ |
| Year of Initial <br> Contribution |  |  |  |  |  |  |  |  |  |  |
| 1973 | 1,399 | 1,029 | 1,412 | 1,748 | 1,623 | 1,730 | 2,049 | 2,713 | 2,580 | 3,132 |
| 1974 |  | 1,315 | 1,804 | 2,234 | 2,074 | 2,210 | 2,618 | 3,466 | 3,296 | 4,002 |
| 1975 |  |  | 1,588 | 1,967 | 1,826 | 1,946 | 2,305 | 3,052 | 2,902 | 3,523 |
| 1976 |  |  |  | 1,598 | 1,483 | 1,581 | 1,872 | 2,479 | 2,358 | 2,862 |
| 1977 |  |  |  |  | 1,499 | 1,597 | 1,891 | 2,505 | 2,382 | 2,892 |
| 1978 |  |  |  |  |  | 1,553 | 1,839 | 2,436 | 2,316 | 2,812 |
| 1979 |  |  |  |  |  |  | 1,609 | 2,131 | 2,026 | 2,460 |
| 1980 |  |  |  |  |  |  |  |  | 1,759 | 1,672 |

Bear markets lead to short-term losses and great long-term returns. See note next to the 2013 column.

J. V. Bruni and Company 1528 North Tejon Street
Colorado Springs, CO 80907
(719) 575-9880 • www.jvbruni.com • (800) 748-3409

| Year End: | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Worker's Age: | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| Annual IRA Contribution: | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Cumulative Contributions: | 18,000 | 20,000 | 22,000 | 24,000 | 26,000 | 28,000 | 30,000 | 32,000 | 34,000 | 36,000 |
| Annual S\&P 500 Return: | 22.56\% | 6.27\% | 31.73\% | 18.67\% | 5.25\% | 16.61\% | 31.69\% | -3.10\% | 30.47\% | 7.62\% |
| Year of Initial Contribution |  |  |  |  |  |  |  |  |  |  |
| 1973 | 3,837 | 4,077 | 5,388 | 6,384 | 6,718 | 7,847 | 10,318 | 9,991 | 13,043 | 14,043 |
| 1974 | 4,903 | 5,210 | 6,885 | 8,157 | 8,584 | 10,027 | 13,184 | 12,766 | 16,666 | 17,944 |
| 1975 | 4,316 | 4,587 | 6,062 | 7,182 | 7,557 | 8,828 | 11,608 | 11,239 | 14,673 | 15,798 |
| 1976 | 3,507 | 3,726 | 4,925 | 5,834 | 6,140 | 7,172 | 9,430 | 9,131 | 11,920 | 12,834 |
| 1977 | 3,543 | 3,765 | 4,975 | 5,894 | 6,203 | 7,245 | 9,527 | 9,224 | 12,042 | 12,966 |
| 1978 | 3,445 | 3,661 | 4,838 | 5,731 | 6,031 | 7,045 | 9,264 | 8,970 | 11,710 | 12,608 |
| 1979 | 3,014 | 3,203 | 4,233 | 5,015 | 5,277 | 6,164 | 8,105 | 7,848 | 10,245 | 11,031 |
| 1980 | 2,488 | 2,644 | 3,494 | 4,139 | 4,355 | 5,088 | 6,690 | 6,477 | 8,456 | 9,105 |
| 1981 | 2,929 | 3,113 | 4,114 | 4,874 | 5,129 | 5,991 | 7,878 | 7,628 | 9,958 | 10,722 |
| 1982 | 2,963 | 3,149 | 4,161 | 4,930 | 5,188 | 6,060 | 7,968 | 7,716 | 10,073 | 10,845 |
| 1983 | 2,099 | 2,231 | 2,948 | 3,492 | 3,675 | 4,293 | 5,645 | 5,465 | 7,135 | 7,682 |
| 1984 |  | 2,135 | 2,821 | 3,342 | 3,517 | 4,108 | 5,402 | 5,230 | 6,828 | 7,352 |
| 1985 |  |  | 2,288 | 2,710 | 2,852 | 3,332 | 4,381 | 4,242 | 5,538 | 5,962 |
| 1986 |  |  |  | 2,063 | 2,171 | 2,536 | 3,334 | 3,228 | 4,214 | 4,538 |
| 1987 |  |  |  |  | 1,771 | 2,069 | 2,721 | 2,634 | 3,439 | 3,703 |
| 1988 |  |  |  |  |  | 2,112 | 2,777 | 2,689 | 3,510 | 3,779 |
| 1989 |  |  |  |  |  |  | 2,212 | 2,142 | 2,797 | 3,011 |
| 1990 |  |  |  |  |  |  |  | 2,024 | 2,643 | 2,845 |
| 1991 |  |  |  |  |  |  |  |  | 2,225 | 2,395 |
| 1992 |  |  |  |  |  |  |  |  |  | 2,121 |
| 1993 |  |  |  |  |  |  |  |  |  |  |
| 1994 |  |  |  |  |  |  |  |  |  |  |
| 1995 |  |  |  |  |  |  |  |  |  |  |
| 1996 |  |  |  |  |  |  |  |  |  |  |
| 1997 |  |  |  |  |  |  |  |  |  |  |
| 1998 |  |  |  |  |  |  |  |  |  |  |
| 1999 |  |  |  |  |  |  |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |
| 2001 |  |  |  |  |  |  |  |  |  |  |
| 2002 |  |  |  |  |  |  |  |  |  |  |
| 2003 |  |  |  |  |  |  |  |  |  |  |
| 2004 |  |  |  |  |  |  |  |  |  |  |
| Year-end Value | 37,043 | 41,499 | 57,132 | 69,748 | 75,167 | 89,914 | 120,441 | 118,644 | 157,114 | 171,286 |

It took 17 years to exceed $\$ 100,000$.

On one hand, the results are straightforward. We made no heroic assumptions. Compared to a $401(\mathrm{k})$ with employer matching (and higher contribution limits), an IRA is not the easiest way to save for retirement. Despite several bear markets during 1973-2013 (some steep), the favorable ending results were driven primarily by (1) starting to save at age 25 , (2) consistently saving what many would consider relatively modest amounts, and (3) achieving S\&P 500 returns. Indeed, significantly improved results could have been achieved by starting to save at an earlier age and/or by saving more. (Imagine starting with 2013's contribution limit of $\$ 5,500$, rather than the 1973 limit of $\$ 1,500$.) Better investment results would also help, but for the purpose of this analysis we choose to emphasize the easier alternatives. On the other hand, relatively few 65 -year-olds in 2013 have amassed $\$ 1+$ million nest eggs. (This statement does not apply to our clientele.) The reasons for this include (1) not saving on a consistent basis, especially in the critical earlier years, (2) not saving enough, (3) making withdrawals, and (4) failing to achieve S\&P 500 returns.

| Year End: | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Worker's Age: | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
| Annual IRA Contribution: | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 3,500 | 3,500 | 3,500 |
| Cumulative Contributions: | 38,000 | 40,000 | 42,000 | 44,000 | 46,000 | 48,000 | 50,000 | 52,000 | 54,000 | 57,500 | 61,000 | 64,500 |
| Annual S\&P <br> 500 Return: | 10.08\% | 1.32\% | 37.58\% | 22.96\% | 33.36\% | 28.58\% | 21.04\% | -9.10\% | -11.89\% | -22.10\% | 28.68\% | 10.88\% |
| Year of Initial Contribution |  |  |  |  |  |  |  |  |  |  |  |  |
| 1973 | 15,446 | 15,648 | 21,505 | 26,467 | 35,298 | 45,386 | 54,931 | 49,935 | 44,001 | 34,274 | 44,108 | 48,903 |
| 1974 | 19,736 | 19,994 | 27,478 | 33,819 | 45,103 | 57,993 | 70,190 | 63,806 | 56,224 | 43,795 | 56,360 | 62,488 |
| 1975 | 17,377 | 17,604 | 24,193 | 29,775 | 39,710 | 51,059 | 61,798 | 56,177 | 49,501 | 38,559 | 49,621 | 55,016 |
| 1976 | 14,117 | 14,301 | 19,654 | 24,189 | 32,260 | 41,480 | 50,204 | 45,637 | 40,214 | 31,324 | 40,312 | 44,695 |
| 1977 | 14,261 | 14,448 | 19,856 | 24,437 | 32,591 | 41,905 | 50,719 | 46,105 | 40,627 | 31,646 | 40,725 | 45,153 |
| 1978 | 13,868 | 14,049 | 19,307 | 23,762 | 31,691 | 40,748 | 49,319 | 44,833 | 39,505 | 30,772 | 39,601 | 43,907 |
| 1979 | 12,133 | 12,292 | 16,892 | 20,790 | 27,727 | 35,651 | 43,150 | 39,225 | 34,564 | 26,923 | 34,648 | 38,415 |
| 1980 | 10,014 | 10,145 | 13,943 | 17,160 | 22,885 | 29,426 | 35,615 | 32,375 | 28,528 | 22,222 | 28,597 | 31,707 |
| 1981 | 11,793 | 11,947 | 16,418 | 20,207 | 26,949 | 34,651 | 41,939 | 38,124 | 33,594 | 26,168 | 33,675 | 37,337 |
| 1982 | 11,929 | 12,085 | 16,608 | 20,440 | 27,260 | 35,051 | 42,423 | 38,564 | 33,981 | 26,469 | 34,064 | 37,767 |
| 1983 | 8,450 | 8,560 | 11,764 | 14,479 | 19,310 | 24,829 | 30,051 | 27,318 | 24,072 | 18,750 | 24,130 | 26,753 |
| 1984 | 8,086 | 8,192 | 11,258 | 13,856 | 18,479 | 23,760 | 28,758 | 26,142 | 23,036 | 17,943 | 23,091 | 25,602 |
| 1985 | 6,558 | 6,644 | 9,131 | 11,237 | 14,987 | 19,270 | 23,323 | 21,201 | 18,682 | 14,552 | 18,727 | 20,764 |
| 1986 | 4,991 | 5,056 | 6,949 | 8,552 | 11,406 | 14,665 | 17,750 | 16,135 | 14,218 | 11,075 | 14,252 | 15,802 |
| 1987 | 4,073 | 4,126 | 5,670 | 6,979 | 9,307 | 11,967 | 14,484 | 13,167 | 11,602 | 9,037 | 11,630 | 12,895 |
| 1988 | 4,157 | 4,211 | 5,787 | 7,122 | 9,499 | 12,214 | 14,782 | 13,438 | 11,841 | 9,223 | 11,870 | 13,160 |
| 1989 | 3,312 | 3,355 | 4,611 | 5,675 | 7,569 | 9,732 | 11,779 | 10,707 | 9,435 | 7,349 | 9,458 | 10,486 |
| 1990 | 3,130 | 3,171 | 4,357 | 5,363 | 7,152 | 9,196 | 11,130 | 10,118 | 8,915 | 6,945 | 8,937 | 9,909 |
| 1991 | 2,635 | 2,669 | 3,668 | 4,515 | 6,021 | 7,742 | 9,370 | 8,518 | 7,506 | 5,846 | 7,524 | 8,342 |
| 1992 | 2,333 | 2,363 | 3,248 | 3,998 | 5,331 | 6,855 | 8,297 | 7,542 | 6,646 | 5,177 | 6,662 | 7,386 |
| 1993 | 2,086 | 2,113 | 2,904 | 3,574 | 4,767 | 6,129 | 7,418 | 6,743 | 5,942 | 4,629 | 5,957 | 6,604 |
| 1994 |  | 2,023 | 2,780 | 3,421 | 4,562 | 5,866 | 7,100 | 6,454 | 5,687 | 4,430 | 5,701 | 6,321 |
| 1995 |  |  | 2,294 | 2,824 | 3,766 | 4,842 | 5,860 | 5,327 | 4,694 | 3,656 | 4,706 | 5,217 |
| 1996 |  |  |  | 2,226 | 2,969 | 3,817 | 4,620 | 4,200 | 3,701 | 2,883 | 3,710 | 4,113 |
| 1997 |  |  |  |  | 2,252 | 2,895 | 3,504 | 3,185 | 2,807 | 2,186 | 2,813 | 3,119 |
| 1998 |  |  |  |  |  | 2,287 | 2,767 | 2,516 | 2,217 | 1,727 | 2,222 | 2,464 |
| 1999 |  |  |  |  |  |  | 2,226 | 2,023 | 1,783 | 1,389 | 1,787 | 1,982 |
| 2000 |  |  |  |  |  |  |  | 1,873 | 1,651 | 1,286 | 1,655 | 1,834 |
| 2001 |  |  |  |  |  |  |  |  | 1,959 | 1,526 | 1,964 | 2,177 |
| 2002 |  |  |  |  |  |  |  |  |  | 3,177 | 4,088 | 4,533 |
| 2003 |  |  |  |  |  |  |  |  |  |  | 4,088 | 4,532 |
| 2004 |  |  |  |  |  |  |  |  |  |  |  | 3,774 |
| Year-end Value | 190,483 | 194,996 | 270,276 | 334,866 | 448,850 | 579,415 | 703,507 | 641,388 | 567,133 | 444,939 | 576,682 | 643,157 |

It took 6 more years to exceed $\$ 200,000$.

It took just one more year to surpass $\$ 300,000$.

Another bear market. An other buying opportunity.

Failing to achieve S\&P 500 returns is a common result when savers hold lower-returning investments (such as bank deposits, most bonds or over-hyped faddish investments) in an attempt to reduce the near-term volatility that is characteristic of S\&P 500 performance, or when savers temporarily succumb to their fears and suspend saving (or sell) during bear markets. We hope you will carefully study these tables and see that short-term stock market volatility didn't adversely affect long-term investment performance. Instead, it produced great buying opportunities. Put differently, for the purpose of nest-egg formation, bear markets are not to be feared. (It is investors' reactions to bear markets that should be feared.) Rather, they should be welcomed-and exploited.


Note: Do you think stocks are risky and bank deposits are not? If we had assumed T-Bill returns (comparable to bank deposits) instead of stock returns, the final 2013 value would have been far less. Smaller nest eggs increase the risk of outliving your money.

