

## Getting Rich Slowly: How Saving and Investing Over a Work Career (1973–2013) – with an Employer Match – Combined to Produce a Nest Egg of Almost \$2 Million

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

This study is intended to parallel an earlier study that addressed saving in an *IRA* account over a worker's career. The tables on this and the following pages show the results of saving in a *401(k) Defined Contribution Plan*, assuming an employer match of 50% of the employee's contributions. The employee's annual contribution was assumed to equal 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 work career from age 25 to 65, we assumed that 401(k)s (and IRAs) were available in 1973, versus their actual (later) inception dates. 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 equal to that of the S&P 500 Stock Index. Starting in 2002, workers age 50 and older were allowed somewhat higher IRA contribution limits, so we assumed corresponding higher 401(k) contributions in 2002 (when our sample worker was 54) through 2013. Rather than try to quantify the tax advantages of retirement plan contributions, we simply point out that these tax advantages made it easier to contribute to retirement accounts.

Discussion continued

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
Employee Contribution:	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	2,000	2,000
Employee Contrib. w/ Match:	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	3,000	3,000
Cum. Employee Contributions:	1,500	3,000	4,500	6,000	7,500	9,000	10,500	12,000	14,000	16,000
Annual S&P 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 Contribution:										
1973	2,098	1,543	2,118	2,623	2,434	2,594	3,073	4,069	3,869	4,698
1974		1,972	2,706	3,351	3,111	3,315	3,926	5,199	4,944	6,003
1975			2,382	2,951	2,739	2,919	3,457	4,578	4,353	5,285
1976				2,397	2,225	2,371	2,808	3,719	3,536	4,293
1977					2,248	2,396	2,837	3,757	3,573	4,337
1978						2,329	2,759	3,653	3,474	4,218
1979							2,414	3,196	3,039	3,690
1980								2,638	2,509	3,046
1981									2,954	3,587
1982										3,628
Year-end Value:	2,098	3,515	7,206	11,322	12,757	15,925	21,274	30,810	32,251	42,784

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

Table continued



*J. V. Bruni and Company*  
1528 North Tejon Street  
Colorado Springs, CO 80907

(719) 575-9880 • [www.jvbruni.com](http://www.jvbruni.com) • (800) 748-3409

Year End:	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Worker's Age:	35	36	37	38	39	40	41	42	43	44	45
Employee Contribution:	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Employee Contrib. w/ Match:	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Cum. Employee Contributions:	18,000	20,000	22,000	24,000	26,000	28,000	30,000	32,000	34,000	36,000	38,000
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%	10.08%
Year of Initial Contribution											
1973	5,755	6,116	8,083	9,576	10,077	11,770	15,477	14,986	19,564	21,065	23,169
1974	7,354	7,815	10,328	12,236	12,876	15,040	19,776	19,149	24,998	26,916	29,605
1975	6,475	6,880	9,093	10,773	11,336	13,242	17,412	16,859	22,009	23,698	26,065
1976	5,260	5,590	7,387	8,752	9,209	10,757	14,145	13,696	17,880	19,252	21,175
1977	5,314	5,647	7,463	8,841	9,304	10,868	14,290	13,837	18,064	19,449	21,392
1978	5,167	5,491	7,257	8,597	9,047	10,568	13,895	13,455	17,565	18,912	20,802
1979	4,521	4,804	6,349	7,522	7,915	9,246	12,157	11,772	15,368	16,547	18,200
1980	3,731	3,965	5,240	6,208	6,533	7,631	10,034	9,716	12,684	13,657	15,022
1981	4,394	4,669	6,171	7,311	7,693	8,986	11,816	11,441	14,937	16,082	17,689
1982	4,445	4,723	6,242	7,395	7,782	9,090	11,953	11,573	15,109	16,268	17,893
1983	3,149	3,346	4,422	5,239	5,513	6,439	8,467	8,198	10,703	11,524	12,675
1984		3,202	4,232	5,013	5,275	6,162	8,103	7,845	10,242	11,028	12,129
1985			3,432	4,066	4,278	4,997	6,571	6,363	8,307	8,944	9,837
1986				3,094	3,256	3,803	5,001	4,842	6,322	6,807	7,486
1987					2,657	3,104	4,081	3,951	5,159	5,554	6,109
1988						3,167	4,165	4,033	5,265	5,669	6,235
1989							3,319	3,213	4,195	4,517	4,968
1990								3,036	3,964	4,268	4,694
1991									3,337	3,593	3,952
1992										3,182	3,499
1993											3,129
1994											
1995											
1996											
1997											
1998											
1999											
2000											
2001											
2002											
2003											
2004											
Year-end Value	55,565	62,249	85,698	104,621	112,751	134,871	180,662	177,966	235,671	256,929	285,725

↑  
It took 14 years to exceed \$100,000.

↑  
It took just five more years to double.

On one hand, the results are straightforward. We made no heroic assumptions. 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, (3) taking advantage of the employer match—essentially free money, and (4) achieving S&P 500 returns. Indeed, significantly improved results could have been achieved by starting to save at an earlier age and/or saving more. (Imagine starting in 1973 with 2013's contribution limit of \$5,500, rather than \$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 nest eggs of almost \$2 million. (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:	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Worker's Age:	46	47	48	49	50	51	52	53	54	55	56
Employee Contribution:	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	3,500	3,500	3,500
Employee Contrib. w/ Match:	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	5,250	5,250	5,250
Cum. Employee Contributions:	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 500 Return:	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	23,472	32,257	39,700	52,947	68,078	82,397	74,902	66,002	51,411	66,162	73,355
1974	29,992	41,217	50,728	67,654	86,989	105,285	95,708	84,336	65,692	84,540	93,732
1975	26,406	36,289	44,663	59,565	76,588	92,697	84,265	74,252	57,838	74,432	82,525
1976	21,452	29,481	36,283	48,390	62,219	75,306	68,456	60,321	46,987	60,467	67,042
1977	21,672	29,783	36,656	48,886	62,857	76,078	69,158	60,940	47,469	61,088	67,730
1978	21,073	28,961	35,644	47,537	61,122	73,978	67,249	59,258	46,158	59,401	65,860
1979	18,438	25,339	31,185	41,591	53,477	64,725	58,837	51,846	40,385	51,971	57,622
1980	15,218	20,914	25,740	34,328	44,139	53,422	48,563	42,792	33,333	42,896	47,560
1981	17,920	24,628	30,310	40,424	51,976	62,908	57,186	50,391	39,251	50,513	56,005
1982	18,127	24,912	30,660	40,890	52,576	63,634	57,846	50,972	39,704	51,096	56,651
1983	12,841	17,647	21,719	28,965	37,243	45,077	40,976	36,107	28,125	36,195	40,130
1984	12,288	16,887	20,784	27,719	35,641	43,137	39,213	34,554	26,915	34,637	38,403
1985	9,966	13,696	16,856	22,480	28,905	34,984	31,802	28,023	21,828	28,091	31,145
1986	7,584	10,423	12,828	17,108	21,998	26,625	24,203	21,327	16,612	21,379	23,703
1987	6,189	8,506	10,468	13,961	17,951	21,726	19,750	17,403	13,556	17,445	19,342
1988	6,316	8,681	10,684	14,248	18,320	22,174	20,157	17,761	13,835	17,804	19,740
1989	5,033	6,917	8,513	11,353	14,598	17,668	16,061	14,153	11,024	14,187	15,730
1990	4,756	6,536	8,044	10,728	13,794	16,695	15,177	13,373	10,417	13,406	14,863
1991	4,004	5,502	6,772	9,031	11,612	14,055	12,776	11,258	8,770	11,286	12,513
1992	3,545	4,872	5,996	7,997	10,283	12,445	11,313	9,969	7,765	9,993	11,080
1993	3,170	4,356	5,361	7,150	9,194	11,127	10,115	8,913	6,943	8,935	9,906
1994	3,034	4,169	5,131	6,844	8,800	10,650	9,682	8,531	6,645	8,552	9,482
1995		3,441	4,235	5,649	7,263	8,790	7,991	7,041	5,485	7,058	7,826
1996			3,339	4,453	5,726	6,930	6,300	5,551	4,324	5,565	6,170
1997				3,377	4,343	5,256	4,778	4,210	3,279	4,220	4,679
1998					3,430	4,151	3,774	3,325	2,590	3,333	3,696
1999						3,339	3,035	2,674	2,083	2,681	2,972
2000							2,810	2,476	1,928	2,482	2,752
2001								2,938	2,289	2,946	3,266
2002									4,765	6,132	6,799
2003										6,131	6,798
2004											5,661
Year-end Value	292,494	405,414	502,300	673,275	869,122	1,055,261	962,082	850,699	667,408	865,023	964,736

↑  
It took five more years to double again.

↑  
Another bear market. Another 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 in spite of frequent short-term market volatility, long-term investment performance has been remarkable. In fact, short-term market volatility 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.

Year End:	2005	2006	2007	2008	2009	2010	2011	2012	2013
Worker's Age:	57	58	59	60	61	62	63	64	65
Employee Contribution:	4,500	5,000	5,000	6,000	6,000	6,000	6,000	6,000	6,500
Employee Contrib. w/ Match:	6,750	7,500	7,500	9,000	9,000	9,000	9,000	9,000	9,750
Cum. Employee Contributions:	69,000	74,000	79,000	85,000	91,000	97,000	103,000	109,000	115,500
Annual S&P 500 Return:	4.91%	15.79%	5.49%	-37.00%	26.46%	15.06%	2.11%	16.00%	32.39%
Year of Initial Contribution									
1973	76,943	89,096	93,993	59,220	74,883	86,154	87,978	102,038	135,107
1974	98,316	113,844	120,102	75,671	95,684	110,085	112,417	130,382	172,637
1975	86,561	100,233	105,742	66,623	84,243	96,923	98,976	114,793	151,996
1976	70,321	81,428	85,904	54,124	68,438	78,739	80,407	93,256	123,479
1977	71,042	82,263	86,785	54,679	69,140	79,547	81,231	94,213	124,746
1978	69,081	79,992	84,389	53,170	67,231	77,351	78,989	91,612	121,302
1979	60,441	69,986	73,833	46,519	58,822	67,676	69,109	80,153	106,129
1980	49,886	57,765	60,940	38,396	48,550	55,858	57,041	66,157	87,597
1981	58,744	68,023	71,762	45,214	57,171	65,777	67,170	77,904	103,151
1982	59,422	68,807	72,589	45,735	57,831	66,535	67,944	78,803	104,341
1983	42,093	48,741	51,420	32,397	40,966	47,132	48,130	55,822	73,912
1984	40,282	46,644	49,208	31,003	39,203	45,104	46,059	53,420	70,732
1985	32,669	37,828	39,908	25,144	31,794	36,579	37,354	43,324	57,364
1986	24,862	28,789	30,372	19,136	24,197	27,839	28,428	32,971	43,657
1987	20,288	23,493	24,784	15,615	19,745	22,717	23,198	26,905	35,625
1988	20,706	23,976	25,294	15,937	20,151	23,184	23,675	27,459	36,358
1989	16,499	19,105	20,155	12,699	16,057	18,474	18,865	21,880	28,971
1990	15,590	18,052	19,045	11,999	15,173	17,456	17,826	20,675	27,375
1991	13,125	15,198	16,033	10,102	12,773	14,696	15,007	17,405	23,046
1992	11,622	13,457	14,197	8,945	11,310	13,013	13,288	15,412	20,407
1993	10,391	12,032	12,693	7,997	10,113	11,635	11,881	13,780	18,246
1994	9,945	11,516	12,149	7,655	9,679	11,136	11,372	13,189	17,463
1995	8,209	9,505	10,027	6,318	7,989	9,191	9,386	10,886	14,414
1996	6,472	7,494	7,906	4,981	6,298	7,246	7,400	8,582	11,364
1997	4,908	5,683	5,996	3,777	4,777	5,495	5,612	6,509	8,618
1998	3,876	4,489	4,735	2,984	3,773	4,340	4,432	5,141	6,807
1999	3,118	3,610	3,809	2,400	3,034	3,491	3,565	4,135	5,474
2000	2,886	3,342	3,526	2,221	2,809	3,232	3,300	3,828	5,068
2001	3,426	3,967	4,185	2,637	3,334	3,836	3,917	4,543	6,015
2002	7,132	8,258	8,712	5,489	6,941	7,985	8,154	9,458	12,523
2003	7,130	8,257	8,710	5,488	6,939	7,984	8,153	9,456	12,521
2004	5,938	6,876	7,254	4,570	5,779	6,649	6,790	7,875	10,427
2005	7,041	8,153	8,601	5,419	6,853	7,884	8,051	9,338	12,364
2006		8,154	8,602	5,420	6,853	7,885	8,052	9,339	12,365
2007			7,525	4,741	5,995	6,897	7,043	8,169	10,817
2008				6,940	8,776	10,097	10,311	11,959	15,834
2009					10,873	12,510	12,775	14,817	19,618
2010						10,138	10,353	12,007	15,899
2011							8,949	10,379	13,742
2012								9,368	12,404
2013									11,064
Year-end Value	1,018,966	1,188,054	1,260,884	801,364	1,024,177	1,188,470	1,222,587	1,427,338	1,900,976

Total employee contribution.

The \$1,500 saved plus the match in 1974's bear market grew dramatically.

Investing during optimistic times (the late 1990s) led to modest returns.

Investing during gloomy times (the financial crisis) led to much better returns.

Not bad, with only \$115,500 of employee contributions.

A big bear market, and a big buying opportunity.

**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.