



DIRTY DEEDS DONE DIRT CHEAP

BERKSHIRE HATHAWAY: THE FLAG AT HALF-STAFF;
HOW TO MAKE MONEY IN STOCKS (AND NOT LOSE IT);
AND THE CHINA SYNDROME

2023 LETTER TO CLIENTS

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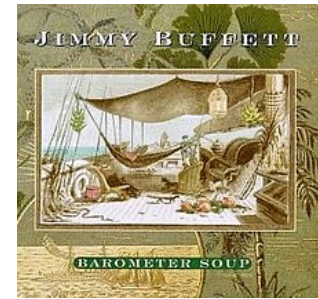
BERKSHIRE HATHAWAY: THE FLAG AT HALF-STAFF; HOW TO MAKE MONEY IN STOCKS (AND NOT LOSE IT); AND THE CHINA SYNDROME

DIRTY DEEDS DONE DIRT CHEAP

If you're havin' trouble with your deficit
Rate's givin' you the blues
You want to roll your debt, but can't sell to the Fed
Here's what you gotta do
Pick up the phone, Jay's always home
Call him anytime
Just ring, 3-6-2-4-3-6, hey, he leads a life of crime
Dirty deeds (done dirt cheap); Interest rates (done dirt cheap); Dirty deeds (done dirt cheap)
Dirty deeds and they're done dirt cheap; Interest rates and they're done dirt cheap
You got problems in your EBITDA
Your stock's an ugly chart
Jay's double dealin' with Janet Yellen
That's when the teardrops start, fella
Pick up the phone, Jay's there alone
He'll make a social call
Come right in, it won't be so grim
You'll have ourselves a ball, hey
Dirty deeds (done dirt cheap); Interest rates (done dirt cheap)' Dirty deeds (done dirt cheap)
Dirty deeds and they're done dirt cheap (oh) Interest rates and they're done dirt cheap - Oh yeah
If you got a payment and you want it gone
But your cash ain't so flush
Bankers naggin' at you night and day
Enough to drive you bust
Pick up the phone, leave it alone
It's time you made a stand
For a fee, Jay's happy to be, your back door man, woo
Dirty deeds (done dirt cheap); Interest rates (done dirt cheap); Dirty deeds (done dirt cheap)
Dirty deeds and they're done dirt cheap (yeah) Interest rates and they're done dirt cheap
Maiden Lane, quant easing, printing presses (Done dirt cheap)
Fed funds, inflation, debasement (Done dirt cheap)
Do anything you want Jay to (Done dirt cheap) (Dirty deeds)
Dirty deeds, dirty deeds (Done dirt cheap)
Yaah

INTRODUCTION

Several years ago, in an exchange of letters with Warren Buffett, I mentioned having calculated a startling truth that Berkshire Hathaway could lose 99.3% of its market value and still have outperformed the S&P 500 from when he took over in 1964 to that point. Warren responded, “I’m sure Ben (Graham) would be proud and call it a margin of safety, but let’s not put it to the test.” Later in the same year, in a conversation with Charlie Munger at a Wesco meeting, I mentioned the same remarkable statistic. Charlie’s instant reply, following a glare into my soul, and then a harrumph, “*Well of course, Chris, that’s just simple compound interest.*”



Life is precious. It gives us family and friends. It gives us heroes and mentors. Life happens, and then it moves forward. In 2023 I lost all of the above. Death of our family, friends, heroes and mentors sure puts life in perspective. I wrote last year that I was losing my mom. She passed in June and I can’t thank so many of you enough for all of the well-wishes and condolences.

Charlie

Charles T. Munger often remarked, “All I want to know is where I’m going to die, so I’ll never go there.”

All I know is so many of us believed Charlie *would* live forever. He was the standard bearer for culture at Berkshire Hathaway. Always to Warren’s left, whether at the annual meeting or in California, he became part of the fabric of so many of our lives. Charlie is now among his eminent dead that he learned so much from. He’s now our eminent dead, a teacher to our great grandchildren and beyond. His wisdom will escape time, as will Berkshire’s culture.

I’ll never forget where I was and what I was doing when learning that President Reagan had been shot or watching the second plane flying into the south tower and then both collapsing. In like vein, the news of Charlie’s passing on November 28 hit me hard. I had been recording a podcast with my phone on do not disturb when the news of his passing was announced. What a coincidence that we were discussing Charlie and just how sharp he was at 99 and how much we looked forward to seeing him at the next annual meeting. Just weeks before his New Year’s Day 100th birthday, Charlie was living past the expiration date but was as sharp and witty as ever. The news was a blow. You knew the day would come anytime, for any of us really, but at 99 every additional day is a gift. Charlie was a gift to so many of us. Mr. Smith, our first client, and whom I wrote about two years ago, nearly made 100 as well. Losing both, one a mentor with whom I spent lots of precious time, and the other whom I only knew on occasion in person, were equally important to my evolution as an investor and human being. Charlie’s character, moral compass, intellect, wit, commanding presence, rational outlook, optimism and complete inability to beat around the bush made him a guide star for me, and I know for so many of you as well.

While the news of Charlie’s passing was tough to get, it also was also cause for reflection. What a run. What an impact on the lives and behavior of so many. What a contribution to Berkshire. The company would not be Berkshire without Charlie’s direct involvement since 1978 and relationship with Warren years prior. Always a subject of concern to many is Berkshire’s succession and continuity past its two giants. Charlie always noted Berkshire would be just fine without them due to its culture. No doubt, and that very culture, and the DNA of the place, can be as much attributed to Charlie as to Warren. Living their lives trying to always do the right thing was how they did it, and it’s in the hardwiring of Berkshire because of them. Berkshire is so unique that it’s the only business that I’d say with certainty will be operating in similar fashion 45 years from now as it did during the 45 on Charlie’s watch. He was, is, and will be so integral to the morality and rationality of Berkshire that the company could call itself simply

Hathaway and the world will always know it as Berkshire for Charlie's contribution. I look forward to celebrating the remarkable life of Charlie Munger with everyone making the pilgrimage to Omaha this first weekend in May. We'll raise a glass to the gift that was Charlie Munger. RIP. Charlie often responded to Warren, "I have nothing to add." No sir, you will always have something to add.

Coach

Later in the year, we lost our high school football coach, Brian McGregor. I've talked about the influence of a series of coaches over the years that combined to help mold me into who I am. Great coaches do that, and I was blessed to be coached by the best. Coach McGregor, simply, "Coach," to all who knew him, was unique. The toughest, most disciplined, demanding and principled human being I've known. He was also among the kindest, most compassionate and witty of any among us. He was certainly the most selfless. Of the moments in my life where I had genuine need for support, one man was *always* there. When Coach lost his son and my good friend, Keli, at age 47 in 2010, a sudden tragedy, and then his wonderful wife two years later nearly to the day, I had the opportunity to be there for him, bringing him to St. Louis on the premise I needed his help with my youth football team. His family knew he needed the time away from home and with me. He was with us for a week on both occasions, coaching, but more so sharing stories into the wee hours each morning and crying together. It was perhaps the greatest honor of my life to deliver Coach's eulogy in Denver the Tuesday before Thanksgiving. I believe Coach had more of his players over the years play college football than any other over all time. More than 200. He arranged scholarships for guys that didn't think they could play or weren't even sure they wanted to. Of his eight All-Americans (I'm beyond proud to be his eighth and final), playing in college was going to happen regardless of his effort. But many of the others, however, owe so much to an extraordinary man. He made *us* men.

I spent hours in Coach's basement after he retired, listening to stories about his players over the years as he went through his memorabilia. He kept everything. There were some binders I never saw. His youngest daughter told a story at Coach's funeral about finding those binders that neither she nor her siblings likewise ever saw. These scrapbooks that tell you everything you need to know about the man, who he was, and whom I hope to be. Coach wrote hundreds, probably thousands, of letters of college recommendation for students over his decades in the high schools. In addition to coaching, he was also one of the school counselors. Over the years, Coach kept copies of every one of those letters in a series of red, three-ring binders. Every one of the letters he sent was diligently handwritten. As for the copies of each letter that Coach kept as a memory of each student helped. Every single one was also handwritten. RIP, dear Coach. You were not just a hero, mentor and great friend. You were my family. Coach often said, "Get a lap." What a lap it was.

Jimmy

It must be the age, but it hits you when your heroes leave us. Jimmy Buffett left the stage for the last time on September 1, a day after his "cousin" Warren's 93rd birthday. Jimmy was only 76. I can't tell you how many concerts I saw with best friends. My kids *can* tell you how much they heard Jimmy on the house speakers. Every. Day. All. Summer. Long. Every. Year. Jimmy's Greatest Hits album was titled, *Songs You Know by Heart*. My kids know every Jimmy song by heart, only for my affection. He was of course more than a singer. He created a lifestyle for people, the Parrot Heads. Jimmy was a businessman, a writer, a poet, a philanthropist and all-around hero to millions. He was a golden example of how to create a fulfilling life through passion, curiosity, imagination and hard work. If you aren't familiar with the body of his music, the best are not the greatest hits. One of the wittiest and funniest storytellers, take the time and listen through the archive. If the music doesn't bring joy to your life, at least you will appreciate the humor, emotion and passion that was Jimmy Buffett. Fins up, Jimmy. Some of it's magic, some of it's tragic, but I had a good life all the way. RIP.

In the Letter

Dirty deeds, done dirt cheap. While Charlie likely ruminated over the superiority of Adam Smith or Galileo, I am highly confident he never debated whether Bon Scott or Brian Johnson was a better front man. The 1976 classic serving as title to this year's letter is from AC/DC's third studio album of the same name. It fits the catalyst for the recent reemergence of animal spirits in security prices. 2022 was a bloodbath for global investors in nearly all asset classes. We managed a small gain. Many asset prices continued downward through fall 2023 until belief spread that Jay Powell and the Federal Reserve would cut interest rates multiple times in 2024. From there, it's been off to the races. Our markets are conditioned on easy money, but too much of a good thing causes hangovers and way too much of a good thing can be lethal. While this year's letter is not about central bank policy, the market is again back to extremes which in the past led to quite bad outcomes. Should things go south, pick up the phone. Jay's there alone.

Intrinsic Value Update contrasts the likelihood of bad outcomes with advantages embedded in the Semper portfolio and our investment process. Semper celebrated its 25th anniversary stewarding client capital. We navigated the past quarter century which began at a secular peak in stocks quite well. Here we find ourselves in the wake of another secular peak and armed with many of the same advantages that have served us so well. We look forward to the next 25. As with the letter each year, we update portfolio intrinsic value and contrast valuation and expectations for the future in the first two sections of the letter.

How to Make Money in Stocks and *The Fabulous and the Magnificent* delve into the five factors that determine investment return. We apply these to expectations over the next decade for the S&P 500 and also to what have become fashionably known as the *Magnificent Seven*. Past returns have indeed been magnificent. On the heels of rapid growth and expanding valuations, prospects for repeat performance become extremely unlikely. The math is the math. Those invested broadly in the S&P or with a concentration in any mix of the seven are encouraged to read and consider the reality of where we are.

Debt at every corner of the industrial world is at levels that can only work out badly. Overlay excessive leverage in a country with more people in the world that will see its population cut in half over the coming decades and China is one of the greatest risk factors the investing world and society at large faces. *The China Syndrome* walks through the "miracle" of China's extraordinary growth over the past four decades and makes the case that the next four will walk back much of what was gained. That China was the largest importer of nearly every industrial commodity and largest outsourced manufacturer of nearly everything the world imports and is now in decline poses risks, threats, and also opportunities for investors seeking value and keen on avoiding risk.

Instead of book recommendations on things we've read this year, don't miss *Worldly Wisdom*. I've compiled a series of resources that those not already deeply familiar with Charlie Munger should explore.

Finally, an ongoing analysis of Berkshire Hathaway resumes in its customary back half of the letter. Berkshire will report a 2023 gain this Saturday making it the first U.S. company to earn more than \$100 billion. Berkshire's shares rose 15.8% in 2023 and per-share intrinsic value as we measure, it advanced 12.8% and to more than \$1 trillion for the first time in dollar terms. The stock closed 2023 at 75 cents on the dollar of intrinsic value, giving us upside in addition to the durable growth of its economic earning power. Critically, Charlie's imprint on the culture at Berkshire will compound for decades to come.

If 2023 taught me anything, it's to embrace the ones we have and love with everything we've got. Take the lessons from our mentors and heroes and pass them on. Life happens, so make yours count. May all of us make a mark on humanity as did Charlie, Coach, Jimmy. Here's to a successful, prosperous and healthy 2024.

INTRINSIC VALUE UPDATE – I HAVE NOTHING TO ADD

“Most people are too fretful; they worry too much. Success means being very patient, but aggressive when it’s time.” – Charlie Munger

“It’s amazing how intelligent it is just to spend some time sitting. A lot of people are way too active.” – Charlie Munger

“I think the record shows the advantage of a peculiar mindset - not seeking action for its own sake, but instead combining extreme patience with extreme decisiveness.” – Charlie Munger



They say patience is a virtue, a proverbial phrase they purportedly originally attributed to the famous English poet William Langland (never heard of him) in his classic 1360 poem, *Piers Plowman* (heard of it, never read it). The great Langland likely borrowed the phrase from his study of Latin poetry, where *maxima enim, patientia virtus* naturally translates to “patience is the greatest virtue” and derives from the seven heavenly virtues dating to Latin poet Prudentius’ fifth century *Psychomachia*. But I digress already. This is an investment letter.

The Efficient Market Hypothesis – what would Charlie say?

Eugene Fama of Chicago’s Booth school was awarded a Nobel Prize for his work developing and championing a theory positing that the market is so efficient at all times that stock picking is a fool’s game. The research concluded that *all* available information is already incorporated in security and market prices at *all* times, so why bother doing investment research? In other words, even well-informed critical investors and analysts can’t outperform the market. This wackadoo body of work was christened the Efficient Market Hypothesis (EMH) in 1970 and became gospel in finance academia for decades. It pollutes business schools to this day. The only good thing we can say about it is that it reduces the amount of assets competing against us and the rest of the active management community. The EMH crowd, prices being all knowing and all that, has little appreciation for a patient investing approach waiting around for fat pitches. As Warren Buffett said, “In any sort of a contest - financial, mental, or physical - it’s an enormous advantage to have opponents who have been taught that it’s useless to even try.”

While the efficiency theory was presented as hard and unwavering, it came to evolve to three forms: strong, weak and semi-strong, the latter two allowing for the remote possibility that with hard work and rigor, perhaps some folks could outperform over time. The weak form suggested that all past data is incorporated in today’s stock prices and therefore no form of technical analysis can be of utility. It allowed that fundamental analysis might increase the odds to somewhere above zero in helping make investment decisions. The semi-strong form of the theory suggests that all *publicly available* information is baked into stock prices but that one armed with information *not* publicly available to the public (the kind that Martha Stewart was alleged to possess and which landed her in the pokey) may have an advantage.

The strong form concludes, no dice. Even the track record of Charlie Munger (and eventually his sidekick Warren) can only be ascribed to luck. If 1.4 billion Chinese each flip 30 coins in a row, one is sure to hit 30 heads.

Charlie Munger, not one to suffer fools over his nearly 100 years, will be quoted at length in this year’s letter. Three of Charlie’s comments on the virtue of patience appear atop the page. Charlie had plenty of

opinions about financial academia. Disdain would be an understatement. He had this to say about the Efficient Market Hypothesis:

Academia failed. The professors at our greatest universities have perfectly asinine ideas - first, about efficient market theory. One of those people influenced McKinsey [& Company] so much that McKinsey came to the Washington Post at the time it was selling at one-fifth of what it was plainly worth as a share of the total enterprise, and said, "You can't buy the stock in because, under efficient market theory, it can't be worth a fifth of what people would pay for the whole company." Of course, the kind of mind that would keep a stupid idea like this when they have a fact that would clearly refute it - it clearly violates traditions of science and mental decency. They taught this drivel to our children for decades and, by God, a lot of people are still doing it. It was in the major textbooks in economics and people as smart as Paul Samuelson believed it - and that is a significantly smart man.

How do smart people get such dumb ideas and hold them so long? Then these ideas from economics drifted into corporate finance, and they got the capital asset pricing model - also pure drivel. They taught it to all of our children and the law schools picked it up. They didn't understand it, but they could repeat it like a mantra from Buddhism, and people would learn it and regurgitate it on the examinations and they get A's and so forth. Of course, they got out into the real world and they were menaces to decency and sound thinking. That didn't bother the people at Harvard University or any of the people that were doing it. And you say, how can smart people do such immensely dumb things?

Warren & Charlie – truth positive

The archive of history does not lie. I'd bet a lot of money that Charlie hadn't heard of Fama or EMH during the years he was running his partnership. Charlie didn't join Berkshire until 1978. He met his eventual partner Warren Buffett at a 1959 dinner in Omaha at the encouragement of mutual friend, Dr. Edwin Davis. Warren launched his Buffett Partnership in 1956 with Davis as an early investor. Charlie was working as an attorney in Los Angeles. The two hit it off immediately and became fast friends, talking regularly. Charlie quickly realized he had the temperament for investing, and at Warren's encouragement, launched his own partnership three years later in 1962. Charlie was "moonlighting" as he remained a named partner at his law firm that still bears his name on the shingle. Can you imagine? Investors trusting a lawyer with little experience investing in public companies (he was an active real estate investor)? When Dr. Davis introduced the idea of getting Warren and Charlie together, he told Warren he trusted him with his money because Warren reminded him of Charlie Munger. Warren remarked that he didn't know Charlie Munger but that he liked him already! Had only Gene Fama hatched his elegant theory eleven years earlier and been on hand to warn Charlie about cavorting with a stock picker and eventually warn Charlie's early investors in 1962 of their folly in hiring him.

Mr. Buffett gave a speech at Columbia University in 1984 commemorating the 50th anniversary of the first publication of Benjamin Graham and David Dodd's *Security Analysis*, the bible to value investors. I own 16 copies of the various editions, the most prized a sixth impression of 1940's second edition. If anybody has a 1934 first edition just lying around collecting dust, feel free to send it my way. In any event, Warren studied under Ben at Columbia and eventually joined him at Ben's investment firm, Graham-Newman, before launching his own partnerships. An edited transcript of Warren's speech, *The Superinvestors of Graham and Doddsville*, appears in several later editions of Graham's other famous book, *The Intelligent Investor*. If you read no other book on investing, read this one. In the speech and later in the appendix, Buffett highlights the investment track records of several prominent value investors. At this point he was acutely aware of Fama's EMH, which by 1984 was dogma among the entirety of finance departments and even in too many corners of Wall Street. Charlie's track record (see two rightmost columns) from the appendix to *The Intelligent Investor*.

Charles Munger Partnership Returns 1962-1975

Year	Mass. Inv. Trust (%)	Investors Stock (%)	Lehman (%)	Tri-Cont. (%)	Dow (%)	Overall Partnership (%)	Limited Partners (%)
Yearly Results (1)							
1962	-9.8	-13.4	-14.4	-12.2	-7.6	30.1	20.1
1963	20.0	16.5	23.8	20.3	20.6	71.7	47.8
1964	15.9	14.3	13.6	13.3	18.7	49.7	33.1
1965	10.2	9.8	19.0	10.7	14.2	8.4	6.0
1966	-7.7	-9.9	-2.6	-6.9	-15.7	12.4	8.3
1967	20.0	22.8	28.0	25.4	19.0	56.2	37.5
1968	10.3	8.1	6.7	6.8	7.7	40.4	27.0
1969	-4.8	-7.9	-1.9	0.1	-11.6	28.3	21.3
1970	0.6	-4.1	-7.2	-1.0	8.7	-0.1	-0.1
1971	9.0	16.8	26.6	22.4	9.8	25.4	20.6
1972	11.0	15.2	23.7	21.4	18.2	8.3	7.3
1973	-12.5	-17.6	-14.3	-21.3	-23.1	-31.9	-31.9
1974	-25.5	-25.6	-30.3	-27.6	-13.1	-31.5	-31.5
1975	32.9	33.3	30.8	35.4	44.4	73.2	73.2
Compound Results (2)							
1962	-9.8	-13.4	-14.4	-12.2	-7.6	30.1	20.1
1962-3	8.2	0.9	6.0	5.6	11.5	123.4	77.5
1962-4	25.4	15.3	20.4	19.6	32.4	234.4	136.3
1962-5	38.2	26.6	43.3	32.4	51.2	262.5	150.5
1962-6	27.5	14.1	39.5	23.2	27.5	307.5	171.3
1962-7	53.0	40.1	78.5	54.5	51.8	536.5	273.0
1962-8	68.8	51.4	90.5	65.0	63.5	793.6	373.7
1962-9	60.7	39.4	86.9	65.2	44.5	1046.5	474.6
1962-70	61.7	33.7	73.4	63.5	57.1	1045.4	474.0
1962-71	76.3	56.2	119.5	100.1	72.5	1336.3	592.2
1962-72	95.7	79.9	171.5	142.9	103.9	1455.5	642.7
1962-73	71.2	48.2	132.7	91.2	77.2	959.3	405.8
1962-74	27.5	40.3	62.2	38.4	36.3	625.6	246.5
1962-75	69.4	47.0	112.2	87.4	96.8	1156.7	500.1
Average Annual Compounded Rate	3.8	2.8	5.5	4.6	5.0	19.8	13.7

Remember, Fama descended Mount Efficient Market with his tablets in 1970. Charlie was nine years underway and had earned 1,045% gross and 474% net at that point while the Dow Jones Industrial Average, the S&P 500 of the day, had earned 57%. Perhaps sensing what an idiot he was for trying to invest with no advantage, Buffett closed his partnership the year before Gene came down the hill. From launch in May 1956 to 1969, the Buffett Partnership earned 29.5% gross and 23.8% net. That's per year. The Dow Jones did 7.4% annually. Maybe Gene was right. Why try with these mediocre results...

You can be certain that we at Semper are of Charlie's mindset and most certainly ascribe no credence to the EMH or other academic insanities such as Modern Portfolio Theory or its Capital Asset Pricing Model cousin. I hope after what we've managed to accomplish here over our 25 years or my third of a century practicing fundamental value investing that we're not simply the random coin flipper.

Weighing & Voting – Mr. Market & Mr. Graham, partners

Had the Nobel laureates moonlighted, themselves, and actually invested capital alongside publishing Greek-letter-filled papers for each other, they may have concluded that the market is indeed efficient in three forms, but far from EMH's strong, weak and semi-strong. Ben Graham, who in addition to teaching investing at Columbia and writing books, was also a practitioner of the dark art of active investing. Ben famously remarked, "In the short run, the market is a voting machine but in the long run it is a weighing machine." Charlie's sidekick and Ben's mentee had this to say about market efficiency in Berkshire Hathaway's 1987 Chairman's letter to the shareholders:

Ben Graham, my friend and teacher long ago described the mental attitude toward market fluctuations that I believe to be most conducive to investment success. He said that you should imagine market quotations as coming from a remarkably accommodating fellow named Mr. Market who is your partner in a private business. Without fail, Mr. Market appears daily and names a price at which he will either buy your interest or sell you his.

Even though the business that the two of you own may have economic characteristics that are stable, Mr. Market's quotations will be anything but. For, sad to say, the poor fellow has incurable emotional problems. At times he feels euphoric and can see only the favorable factors affecting the business. When in that mood, he names a very high buy-sell price because he fears that you will snap up his interest and rob him of imminent gains. At other times he is depressed and can see nothing but trouble ahead for both the business and the world. On these occasions, he will name a very low price, since he is terrified that you will unload your interest on him.

Mr. Market has another endearing characteristic: He doesn't mind being ignored. If his quotation is uninteresting to you today, he will be back with a new one tomorrow. Transactions are strictly at your option. Under these conditions, the more manic-depressive his behavior, the better for you.

But, like Cinderella at the ball, you must heed one warning or everything will turn into pumpkins and mice: Mr. Market is there to serve you, not to guide you. It is his pocketbook, not his wisdom, that you will find useful. If he shows up some day in a particularly foolish mood, you are free to either ignore him or to take advantage of him, but it will be disastrous if you fall under his influence. Indeed, if you aren't certain that you understand and can value your business far better than Mr. Market, you don't belong in the game. As they say in poker, "If you've been in the game 30 minutes and you don't know who the patsy is, you're the patsy."

Ben's Mr. Market allegory may seem out-of-date in today's investment world, in which most professionals and academicians talk of efficient markets, dynamic hedging and betas. Their interest in such matters is understandable, since techniques shrouded in mystery clearly have value to the purveyor of investment advice. After all, what witch doctor has ever achieved fame and fortune by simply advising "Take two aspirins?"

The value of market esoterica to the consumer of investment advice is a different story. In my opinion, investment success will not be produced by arcane formulae, computer programs or signals flashed by the price behavior of stocks and markets. Rather an investor will succeed by coupling good business judgment with an ability to insulate his thoughts and behavior from the super-contagious emotions that swirl about the marketplace. In my own efforts to stay insulated, I have found it highly useful to keep Ben's Mr. Market concept firmly in mind.

Following Ben's teachings, Charlie and I let our marketable equities tell us by their operating results – not by their daily, or even yearly, price quotations – whether our investments are successful. The market may ignore business success for a while, but eventually will confirm it. As

Ben said: “In the short run, the market is a voting machine but in the long run it is a weighing machine.” The speed at which a business’s success is recognized, furthermore, is not that important as long as the company’s intrinsic value is increasing at a satisfactory rate. In fact, delayed recognition can be an advantage: It may give us the chance to buy more of a good thing at a bargain price.

Semper View – time as the arbiter

We’ve come to appreciate the parable of Mr. Market as our own hypothesis in three parts. Unlike the finance professors, our theory is far from academic, and lacks elegant formulas and Greeks. Like the academics, however, we do concur that the market is efficient in three forms. Ours simply boils down to time. In decades of experience it seems obvious that security prices and overall market prices can be wildly inefficient in the short term, more efficient in the intermediate term and that the market usually gets it spot on over sufficiently long periods of time.

If virtue can be measured by trading activity, then 2023 was a year of patience. Charlie famously quipped, “Investing is where you find a few great companies and then sit on your ass.” Commemorating Semper’s 25th anniversary, we took Charlie to heart – 2023 marks the only calendar year where zero new positions were added to the portfolio. At Berkshire’s annual meetings, upon Warren answering a question (or not answering it but talking about whatever he damn well pleases), he often asked Charlie, “Charlie, you have anything on the subject?” Perhaps Charlie’s most famous reply over the years was quite frequently, “I have nothing to add.” Well, as far as new investments last year, I had nothing to add!

We did take some breaks from ass sitting by eliminating one holding completely for valuation reasons but also to raise cash to add to two longstanding holdings. No new positions however, though with several on the horizon here we sit waiting for “The Price is Right.” RIP, Bob Barker, who like Charlie nearly cracked 100. Thanks for the great memories during the ass sitting days of my idle youth in the 1970s and 1980s. Speaking of memories, how about that Janice Pennington?

Over the years our portfolio turnover averaged 15% annually. Some years are far more active than others. It is only with sufficiently long holding periods that the underlying economics of a business will translate to investment return. This is Ben Graham’s weighing machine. But in short and intermediate terms, volatility in share prices in excess of underlying changes in business value affords tremendous opportunity to trim or sell the dear and purchase the cheap, whether a new position entirely or adding to the undervalued opportunistically.

A quarter century of yearly intervals is sufficiently statistically significant to allow a look under the hood at the repeatability of our investment process. In a typical year we’ll bring two to four new companies into the fold with no requirement to eliminate a like number. Our core holdings have consistently numbered 25 or so positions. Given initial position sizing, approximately a third of our annual activity is used in adding new or selling entire positions. Twice as much, or two-thirds of turnover on average, involves trading around our positions.

Despite the onboarding of no new positions and the complete sale of just one during 2023, the year’s turnover happened to be mathematically typical. Atypical is the fact that nearly all of our buying was dedicated to *materially* increasing the concentration of only two positions, which combined now account for nearly 20% of invested capital. Both positions had been trimmed significantly in prior years when their prices more fully reflected intrinsic value, or our appraisal of what we think the businesses are worth. Both declined more than 50% from prices at which we were selling shares and to levels where we think we were buying dollar bills for no more than fifty cents. If each position were to immediately trade up to our appraisals and holding the prices of all other portfolio positions constant, we’d see the two

positions combined rise to perhaps 40% of invested capital. It doesn't work this way overnight, but in our general experience it's how the process works for us. Ben Graham's weighing machine horizon.

A note here on the nuances of portfolio management. Investors come in two varieties when it comes to portfolio implementation, each with different wants and needs. Some (institutions largely) prefer to be fully invested on day one, both at the outset of a new investment relationship or with ongoing deposits. To the extent they have cash, it's held among their allocations among multiple investment managers. At our portfolio level we don't have it and frankly don't want it. We are typically managing only a portion of their equity investments. Other clients prefer a more methodical cadence for deploying capital, only buying individual positions when fundamentally undervalued. Here we can be fully invested very quickly or more methodically. I've come to equate the process to one of my favorite literary lines of all time, borrowing from Hemingway's *The Sun Also Rises*:

"How did you go bankrupt?" Bill asked. "Two ways," Mike said. "Gradually and then suddenly."

Typically best to not introduce the concept of bankruptcy in an investment letter, but the point here is a corollary. Mr. Market will spend long periods offering not much in the way of opportunity, and then appear all of a sudden with bargain after bargain. It's times of duress and falling prices that present terrific opportunity. You don't know when they're coming, but when they do you take advantage. That said, once we are more fully invested, we prefer to remain so. Once invested, when we are buying a position or adding to a position, we are also selling what we believe to be more fully valued to raise the needed cash. It's the cycle of buy low, sell high that's largely treated us well over the years.

Semper and the Market – time again

A glance at cumulative investment returns across markets and many stocks over the last two years might lead to the conclusion that the stock market is a quiet place. 2022 must seem for many a distant memory, any unpleasantness now long forgotten. Exiting 2021, likely one of but a small handful of secular peaks in the stock market and economy over the past century, many were bludgeoned over the next twelve months.

Semper mercifully managed a very modest 1% gain in 2022 followed by a more typical (in a long-term weighing machine sense) 11% net return last year. Most fared worse over the two years and certainly in 2022, with most stocks, stock indices and asset classes bleeding in the streets. While indices such as the S&P 500 shed 18.1% that year, the Nasdaq's largest 100 relinquished a third of their value. Many high-flying individual companies were throttled by far more.

What a difference a year makes. Among the largest of new-economy tech darlings it was off to the races in 2023. Rewarded for business success and later in the year by the conventional belief that the Federal Reserve and its central bank cousins would lean in with a number of reductions in policy interest rates come 2024, the inflation genie quickly retreating back into the bottle. Recouping lost ground, the S&P gained 26.3% in 2023 while the Nasdaq and Nasdaq 100 shot up by 45.7% and a whopping 54.9% respectively.

Those with the misfortune of not owning the seven tech goliaths atop the market in 2023 know it was far from a sprint for the vast majority of companies. As recently as late October 2023, the Russell 2000, a proxy for companies smaller than the 1000 largest, was in the red by 17.6% including dividends to that point in the year, which followed a 20.4% beating the prior year. The Russell 2000 managed a huge uplift over the year's closing weeks and ended in the black by 16.9% in 2023. Link the two years and small caps remain down 7% cumulatively for the two years. The majority of stocks declined in 2022 and were down more throughout most of 2023. It was only in 2023's final two months that investors (speculators more appropriately) were emboldened by what they believe will be easy money to come courtesy

accommodative central bankers. Is there any other kind? Dirty deeds (done dirt cheap). That's when the teardrops start, fella.

*In the table below, the parentheses represent a negative. This mathematical truth learned by very young schoolchildren is an inside joke for those who amuse themselves by following me on X as I amuse myself on the social platform formerly known as Twitter.

2022, 2023 and Two-Year Index and Magnificent Seven Returns

	2022 Total Return	2023 Total Return	Cumulative 2022-2023
Semper Augustus Net	1.0%	10.8%	11.9%
S&P 500	(18.1%)	26.3%	3.4%
S&P 500 Equal Weighted	(11.5%)	13.9%	0.8%
S&P 100	(21.2%)	32.9%	4.6%
Nasdaq Composite	(32.5%)	44.6%	(2.4%)
Nasdaq 100	(32.4%)	55.1%	4.9%
Russell 2000	(20.4%)	16.9%	(7.0%)
Russell 3000 Value	(8.0%)	11.7%	2.7%
Russell 3000 Growth	(29.0%)	41.2%	0.3%
Apple	(26.4%)	49.0%	9.7%
Microsoft	(28.0%)	58.2%	13.9%
Alphabet/Google	(39.1%)	58.3%	(3.6%)
Amazon	(49.6%)	80.9%	(8.9%)
NVIDIA	(50.3%)	239.0%	68.6%
Meta Platforms/Facebook	(64.2%)	194.1%	5.2%
Tesla	(65.0%)	101.7%	(29.5%)

Total return calculates dividends reinvested in security or index. Cumulative returns are two-year compounded.

The two manic depressive years check Ben Graham's voting machine box. Take short-term returns with a grain of salt as short-term price moves are often not indicative of underlying business economics. There are, however, some interesting numbers that leap out of the chart.

For those paying attention to the whims of the market, the Magnificent Seven have become the topic du jour. These seven stocks have driven market indices of late, both for their sheer size by market capitalization but also for their outsized volatilities over the last two years, or ten. Entering 2023 there was no Magnificent Seven outside of the 1960 classic with Charles Bronson, Steve McQueen, Yul Brynner and other greats (skip the 2016 remake). NVIDIA, sawed in half in 2022, sported a \$368 billion market cap entering 2023 and was on nobody's radar for inclusion in the acronym derby defining the biggest and baddest tech goliaths. Not only did NVIDIA double in value during 2023 to recover its halving but the stock shot up by 239%, sending the market cap to \$1.25 trillion by year's close. Step aside FANG, FAAMG, MAMMA, and Fab 5 (my contribution). When you explode from a pedestrian three-hundred-something billion to north of a cool trillion in a heartbeat, you join the acronym club, though past five-letter acronyms become tongue twisters so we resort to silver screen classics. Perhaps a money-losing gem from the ARKK portfolio will rise up and give us Eight is Enough. Again, speaking of memories, how about that Diane Kay? Speaking of ARKK, it reminds me of a great line from *The Magnificent Seven*:

If God didn't want them sheared, he would not have made them sheep. – Calvera (Eli Wallach)

Take the S&P indices. While the popular and widely indexed S&P 500 is weighted by market capitalization, the equal weighted version is just as its name implies. When the largest components lead or lag in outsized fashion, they will drive cap-weighted returns. The big tech and communications stocks saw far steeper declines in 2022 and similarly outsized gains in 2023, hence the far lower and then higher

returns of the S&P 500 versus the equal weighted index in each of the two years in sequence, as seen in the table. I'd wager that few investors passively snuggled into their index funds realize the seven large stocks in the index listed in the table grew from 21% to 30% of the overall index representation during 2023 and even higher here in late January. NVIDIA is now \$1.5 trillion, half of Apple and Microsoft and larger than once mighty Tesla at its zenith on being included in the S&P 500.

The point regarding capitalization versus equal weighting is similarly illustrated by comparing the S&P 500 to the S&P 100, both capitalization weighted but the 100 only including the big boys. Fat Bottom Girls works here but only if I were Freddie Mercury. The large techs drove the 100-stock index to lower lows in 2022 and higher highs the following year. Get on your bikes and ride!

The identical point can be made by observing the Nasdaq Composite against its own 100 largest component index. The same can be seen with a comparison of the Russell 3000 Value and Growth indices. The Russell 3000 is capitalization weighted and includes all of the components in the S&P 500, hence returns for the 3000 track the S&P 500 as the S&P 500 makes up roughly two-thirds of the value of the entire global stock market, so the vast majority of the Russell 3000. [Fun fact: We have so few publicly traded companies remaining in the U.S. that the Russell 3000 is darn near the same as the Wilshire 5000, the capitalization-weighted index of all U.S. actively traded stocks, all 3,427 of them, a wee bit shy of 5,000. At its peak the Wilshire 5000 contained over 7,500 stocks. Nomenclature of this index is like trying to keep track of how many schools there are in the Big Ten or the Big 12 conferences. How about the numerically accurate conference that actually changed its name from the Pac 10 to the Pac 12? Unfortunately it would now be called the Pac 2, making it Pac-Man and Ms. Pac-Man.] The Russell 3000 Growth and Value indices are dissected into their respective growthy and value-oriented factors that I'm not going to look up because I don't care, nor I hope do most of you. Know, though, that investors identifying as value have lagged since the depths of the financial crisis. The seven big Magnificents in the table drove the wagon, the buggy and the bus. For their growth and business performance they rightly are valued atop the market in size. As to whether they deserve today's valuations, read on. For the purpose of the last two years, value trounced growth in 2022 (by declining by far less) but was trounced by growth in 2023. The cumulative result for the two years was meh.

I'm happy to report that the Semper portfolio exited 2023 nearly fundamentally as undervalued as it was going in. Growth in earnings power across portfolio companies, redeploying capital from the dear to the undervalued, and price declines in some positions combined to maintain valuations among the lowest in Semper's quarter century (and my 33 years) investing money. Portfolio returns were roughly in line with our very long-run expectation and in line with expectations from our process. The factors mentioned have our investments valued at levels rivaling the pandemic low in 2020 and the depths of the Global Financial Crisis in 2008 and 2009.

In recent years, the portfolio closed 2019 at 13.5x earnings, 12.5x in 2020, 10.7x in 2021, a Semper record low 9.5x a year ago and a still-low 10.3x here at year-end 2023. Despite equity-only gains of 23.6% in 2019, 11.9% in 2020, 27.3% in 2021, 2.1% in 2022 and 12.1% in the year just closed, portfolio valuations *declined across most of this period*, meaning fundamentals compounded faster than returns. Lower valuations suggest higher expected long-term returns. Today's 10.3x multiple to earnings gives us a 9.7% earnings yield. Today's 1.0x multiple to sales matches last year's. Our 1.7% dividend yield exceeds the S&P 500's 1.5% despite a *very* low dividend payout as a proportion of portfolio earnings in the case of the Semper portfolio.

Our active approach to capital management regularly brings opportunities to trim and sell the dear; and likewise, to boost and initiate positions on the cheap. We own quality businesses and apply a disciplined approach to measuring intrinsic value versus price paid. Ultimately, it's the underlying economics of the businesses owned, combined with buying assets for less than fair value, that drives investment return. We

are far less active than many investors but firmly believe that speculators leasing positions for a few days or minutes *may* make money but *not* because the economics of the businesses determine returns. The lad fortunate enough to accompany his best girl to the prom should have the good sense to dance with her.

Semper and the S&P – it’s fundamental

A funny thing happened on the way to the Forum. Draw your attention in the table below to the deviation between per share growth in sales and earnings for the S&P 500 from 2021 to 2023. While sales grew 11.9% and 6.8% over the two years, 19.4% cumulatively, earnings declined 5.4% in 2022 and recovered by 8.6% last year. That’s an underwhelming 2.7% combined growth in earnings per share across the period. The funny thing? Well, inflation happened, which is no laughing matter to most, except for the heavily indebted. Lots of those around. If sales grow rapidly and profits barely budge, you get margin compression, and in a big way. The last time high sales growth collided with declining margins was the inflationary 1970s, which was not a great time for stocks but turned out to be a great time for stock pickers, at least the good ones. Yes, the stocks and the pickers. This letter posited two years ago that 2021’s 13.3% record profit margin (a record by a landslide), would mark a secular peak and a level perhaps never to be attained again. Never is a heavy word, but 13.3% was a heady margin. We could be wrong for sure. Certainly if the whole world will run on AI, software and robotaxis, then perhaps the margin might approach 100%. Kidding of course, but wouldn’t a world without costs be marvelous? In the meantime, a recovery to 13.3% and beyond is a long way off.

Year	Sales Per Share	Growth	Earnings Per Share	Growth	Profit Margin	Total Return
2017	1,231.57	7.0%	124.51	17.2%	10.1%	21.8%
2018	1,343.00	9.0%	151.60	21.8%	11.3%	-4.4%
2019	1,415.01	5.4%	157.12	3.6%	11.1%	31.5%
2020	1,362.39	-3.7%	122.37	-22.1%	9.0%	18.4%
2021	1,566.80	15.0%	208.21	70.1%	13.3%	28.7%
2022	1,752.90	11.9%	196.95	-5.4%	11.2%	-18.1%
2023^	1,871.19	6.8%	213.84	8.6%	11.4%	26.3%

^estimated for 2023

The annual letter regularly covers our analytical method aggregating Semper’s portfolio holdings as though they are a single business, consolidated using common-size balance sheet and income statement figures, leverage and profitability ratios, and finally some valuation measures. Our aggregated “company” then stacks up against the S&P 500, similarly grouped as though all 500 businesses were likewise their own very large single business. The common-size method references all measures against a unitized \$100 in sales, allowing for ease of margin, leverage and profitability analysis. In other words, sales for the Semper portfolio and for the index are both set and held constant across time at \$100.

All income statement and balance sheet figures in the blue section of the table below are in proportion to \$100 in constant sales while valuation figures in the lower, purple-shaded portion are multiples and yields. Comparison of several year-end common-size periods illustrates the impact of stock prices on valuation and allows for ease of margin analysis by eliminating annual volatility in sales.

Key Common-Size Figures for the Semper Portfolio and S&P 500

	2023		2022		2021		2020		2019	
Income Statement Figures	S&P 500	Semper	S&P 500	Semper	S&P 500	Semper	S&P 500	Semper	S&P 500	Semper
Sales	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
Earnings Before Interest and Taxes	16.5	12.8	16.1	14.4	17.7	16.3	12.7	15.5	15.9	17.5
Interest Paid	2.1	1.0	2.1	0.9	1.6	0.8	1.7	1.6	2.4	1.3
Pre-Tax Profit	14.4	11.8	14.0	13.5	16.1	15.5	11.0	13.9	13.5	16.1
Tax Rate	20.5%	20.8%	19.7%	21.0%	17.5%	22.8%	18.5%	21.6%	17.5%	20.0%
After-Tax Profit (operating income)	11.4	9.3	11.2	10.6	13.3	12.0	9.0	10.9	11.1	12.9
Dividends	3.8	1.7	3.9	1.8	4.0	2.2	4.4	2.4	4.2	2.4
Retained Earnings	7.7	7.6	7.3	8.8	9.3	9.8	4.6	8.5	6.9	10.5
Balance Sheet Figures										
Equity (Book Value)	\$57.0	\$57.5	\$58.4	\$63.1	\$64.7	\$75.7	\$66.9	\$82.4	\$64.1	\$101.2
Debt	70.4	32.5	71.4	31.0	78.1	38.8	86.4	47.6	79.0	43.7
Cash	23.1	24.3	18.3	25.9	25.3	31.3	29.2	51.3	19.1	28.5
Net Debt	47.3	8.2	53.2	5.1	52.8	7.5	57.1	-3.7	59.8	15.3
Total Capital (Equity + Net Debt)	104.3	65.7	111.6	68.2	117.5	83.3	124.1	78.7	123.9	116.4
Leverage Ratios										
Debt / Equity	123.5%	56.6%	122.3%	49.1%	120.7%	51.2%	129.1%	57.7%	123.2%	43.3%
Net Debt / Equity	83.0%	14.3%	91.1%	8.1%	81.6%	9.9%	85.4%	-4.5%	93.4%	15.1%
Net Debt / Total Capital	45.4%	12.5%	47.7%	7.5%	44.9%	9.0%	46.1%	-4.7%	48.3%	13.1%
Profitability Ratios										
EBIT / Total Capital	15.8%	19.4%	14.5%	21.1%	15.1%	19.6%	10.2%	19.6%	12.7%	15.0%
Return on Equity	20.0%	16.2%	19.2%	16.9%	20.6%	15.9%	13.5%	13.2%	17.3%	12.8%
Return on Total Capital	12.5%	15.5%	11.6%	16.7%	12.4%	15.1%	8.3%	15.4%	10.5%	12.0%
Key Valuation Figures										
Price (Market Value)	\$255	\$96	\$219	\$101	\$304	\$128	\$279	\$136	\$232	\$174
Price / Sales	2.6	1.0	2.2	1.0	3.0	1.3	2.8	1.4	2.3	1.7
Price / Book Value	4.5	1.7	3.8	1.6	4.7	1.7	4.2	1.7	3.6	1.7
Price / Earnings	22.3	10.3	19.5	9.5	22.9	10.7	31.0	12.5	20.9	13.5
Earnings Yield (Earnings / Price)	4.5%	9.7%	5.1%	10.6%	4.4%	9.3%	3.2%	8.0%	4.8%	7.4%
Dividend Yield	1.5%	1.7%	1.8%	1.8%	1.3%	1.7%	1.6%	1.8%	1.8%	1.4%
Retained Earnings Yield	3.0%	8.0%	3.3%	8.8%	3.1%	7.6%	1.6%	6.3%	3.0%	6.0%
Dividend Payout Ratio	33.3%	17.5%	34.8%	17.0%	30.2%	18.3%	48.9%	21.9%	37.9%	18.6%
Enterprise Value / EBIT	18.3	8.2	16.9	7.4	20.2	8.3	26.5	8.5	18.4	10.9

*Figures are rounded and may not sum precisely; Index data are estimates for 2023 and updated for 2022 FINAL.
Sources: Semper Augustus; Standard & Poor's; Bloomberg*

The table importantly dates to 2019. Year-end 2019 immediately preceded the pandemic, which sent much of the global economy into a never-before-seen lockdown. There were vast decided losers. Think air travel or theme parks or cruise lines. Or children. There were also clear beneficiaries. Think retailers of essentials such as Costco, Dollar General and certainly Amazon. A crazed conspiracy theorist might suspect not China but Jeff Bezos for launching the virus on the world. Industries experienced a boomerang effect, where profound weakness (or strength) was in short order followed by the opposite. You see this regularly in recessions. It therefore becomes essential to industry and company analysis to look back to the period prior to any material distortion. Comparing 2020 against 2019 or 2021 against 2020 can be meaningless depending on the subject of review. Now a sufficient period removed from the extremes allows for a comparison of 2023 against the prior couple years a more “normal” 2019.

The duration of this letter could focus on just some of the nuances in the figures. The Semper portfolio is extremely cheap (our bias) both absolutely and relatively. At the same time, the index is equally expensive. We’ll delve shortly into why year-end 2021 likely marked one of the great secular peaks for

the stock market. Last year's sizable S&P 500 recovery rally from a miserable 2022 catapulted prices back to a high perch.

The index price-to-earnings multiple at 22.3x is nearly back to 2021's 22.9x, albeit with a catch. Just as with the temperature of porridge to a bear, the investor should *always* consider whether margins are depressed, elevated, or just right.

Scan up to the figures for after-tax profit and you will see profit margins declined from a too-hot 13.3% in 2021 to 11.4% most recently, a full 1.9 points, or 14% lower [the margin is simply the \$11.43 of after-tax unitized profit as a percentage of \$100 in sales]. Are margins too cold? For numerous reasons I don't think so and don't believe we'll return to those seen two years ago. I'm wrong if information technology and communications continue to grow disproportionately, comprising a larger share of economic output.

Should this collection of companies maintain and grow margins further then a reversion to and even above the prior margin peak is perhaps in the cards. But if the industrial world remains plagued by stagnant growth and rolling and high inflation, working against big tech as happened in 2021, then margins can compress further.



Energy and the Index – it's cyclical

The energy sector is a huge swing factor on aggregate profit margins for the index and for the overall economy. You can always spot cyclical investors at the beach. They are invariably badly scarred from battling rising and disappearing profits (and classically from poor returns on massive capital investments over time). The energy patch is a classic case in point. Demand for energy disappeared at the margin in the pandemic, which was very bad timing for energy producers that had spent like drunken sailors in the four or five years up to 2015 and hadn't fully repaired to health by the time the coronavirus hit. Who can forget the price of a barrel of oil (the near-futures contract at least) trading for a moment at a deeply negative price? 2020 was an extremely bad year for the energy industry. Operating profits for the S&P 500 fell 22.1% in 2020 from \$157.12 to \$122.37. In the wake of early-decade overspending, the energy sector was barely making money in 2019 and then contributed roughly *negative* 10% to overall 2020 index profits, exacerbating what was already a bad year on the earnings front. [As the year progressed and energy sector stock prices tanked, it proved a great time for the opportunistic value investor (those allowed to invest in energy) to unearth some gems, as many assets were being auctioned at prices approaching free]. The sector posted a negative 37.3% return for all of 2020, easily the worst sector during a miserable year unless you bought the autumn lows...

By 2021, energy recovered to about 4% of overall index profits. S&P 500 profits surged to \$208.21, 70.1% above the prior depressed year but also 32.5% above 2019's more normal level. Even though energy only accounted for about 4% of index profits in 2021, the swing from massive losses in 2020 accounted for a good chunk of the spike in index profits to their record profit margin.

2022 was remarkable on the energy front when sector profits ballooned from about 4% of total index earnings in 2021 to nearly 13% of overall earnings. Index earnings fell 5.4%, which sent the index to its 18.1% total return loss. Energy stocks and profits advanced even though the S&P shed 18.1% and the surge in energy profits muted margin declines in other sectors.

2023 was a different story and a mean-reverting one at that. The index logged a 26.3% return with dividends while index earnings improved to an estimated \$213.84, a record, but not a record profit margin by a wide berth. Energy earnings' share of index profits dropped roughly 40% during the year, from 13%

of the index's total to probably 8%. 2022 was by far the most profitable year for energy on record, masking a pounding of profit margins elsewhere. 2023's subsequent decline in energy profits sent per-share sector earnings back to 2008, which many recall being a financial crisis, but not one in energy. 2008 marked the highest sector earnings and margins until 2023. That's why they call them cyclical, folks.

Determining that 2023's energy profits are at "normal" or mid-cycle levels is likely a reasonable conclusion with profits back to 2008 levels. The good news for energy investors is that since 2015 the oil and gas sectors have been underinvesting in replacing reserves. Genuine scarcities may exist and may do so for a considerable period. The *Brown Sugar* section of Semper's 2021 annual letter by the same name delved much deeper into the subject, including the improbable race to carbon-neutral by 2050. Semper has sizable investments in corners of the energy patch. We will trade around our positions opportunistically and look to increase our holdings as chance presents. In the meantime, know that energy has been a very poor long-term place to invest and its cyclicity contributes mightily to overall index margins on the low and high side. Declining index margins in 2020 and 2022 were harmed by energy losses in the former and helped by record energy profits in the latter. 2023's only nominal improvement in the index profit margin from 11.2% to 11.4% would have been better had it not been for energy's roughly 30% decline back to more normal levels. Energy, as the most cyclical among the S&P 500's 11 sectors, merits analysis in any period-to-period comparison, especially when calling a secular peak.

Semper and the S&P – it's fundamental, part deux

By historical measures and stacked against what was likely a secular peak two years ago, metrics such as high price-to-sales, price-to-book-value and enterprise-value-to-EBIT ratios and a low dividend yield suggest the index is again breathing rarified air. On top of nose-bleed valuation measures, leverage *must* be an ongoing concern for index investors, particularly considering that most bellwethers atop the index (think seven companies and a handful more) use very little of it. Debt for the average company relative to total capital (think much of the 493 that aren't the seven) is very elevated.

Balance sheet financial leverage for the aggregate index remains at record levels only manageable in a world of extremely low interest rates. Net debt to total capital, seen in the Leverage Ratios section of the table, consistently hovered at the mid-forty percent level in recent years, ending 2023 at 45.4%. Rising rates over the past two years pushed the interest burden higher for companies employing large amounts of short-term debt, those refinancing maturing debt and those raising new debt capital. You can bet an abundance of CFOs are cheering the hoped-for prospect of materially lower interest rates. Debt remained at just under half of total capital for several years, meaning debt and equity are equally employed in the capital structure when including cash in the mix. "Higher for longer" interest rates, if that's the path, will hammer broad corporate profits. Over the past couple decades, lower interest rates contributed to roughly half of the doubling in the index profit margin to 2021's 13.3% peak despite record levels of debt relative to total capital, revenues and cash flow.

The Semper portfolio remains undervalued relative to the index and absolutely when measured against most of our now more than 25 years. The common size analysis is a phenomenal tool, yes because it reveals both valuation and business quality advantages against the broad stock market, but more so because it helps demonstrate the advantages of active management when performed fundamentally. It's the trimming of more fully valued positions to finance the addition to more undervalued or new positions entirely that goes to the heart of an investment process revolving around our dual margins of safety – those of price and business quality.

The uninitiated to our common size presentation might glance at the steady decline in price from \$174 in 2019 to \$96 in 2023 and conclude that's an ugly 45% price decline over four years. Far from it. As it is, our stocks returned 62.9% over the four-years or 13.0% per year. Our stocks earned (with dividends)

11.9% in 2020, 27.4% in 2021, a small 2.1% gain in 2022 (when the index lost 18.1%) and then 12.1% last year. How in the world does the price fall 45% yet returns are up 62.9%? Remember, this is a common-size analysis, and we are *active* investors.

Portfolio activity works across time in maintaining a low portfolio price and thus a high earnings yield. Portfolio turnover is *typically* low, averaging 15% annually over 25 years. Modest activity over time added considerably to returns. Time is generally required for business fundamentals to be reflected in share prices. The weighing machine. There are scores of “strategies” for trying to make money in stocks. Some try to predict earnings misses or beats and some trade positions every few days. Or hours. Or minutes. Some study charts of prices overlaid with lines and triangles. Some look to the heavens and pray. Others consult witch doctors. All good. Modest turnover suits the process here well.

To illustrate active management, observe what appears as a steady decline in Semper’s aggregate profit margin. The profit margin appears as “After-Tax Profit (operating income)” near the top of the table. In our common size analysis, a decline from \$12.90 to \$9.30 in earnings per \$100 of sales means a 28% decline in the profit margin ($9.30/12.90$). Are profits in the portfolio dropping? Why yes, they are – as a percentage of sales. This could be a bad thing, particularly if examining a single company or an industry. But this is an *actively managed* portfolio of companies lumped together and the composition of companies dictates the margin structure. You’ve likely heard us say a million times that profitability is properly measured against the capital of the business, not against sales. Declining margins may be bad—think Tesla of late, slashing prices to move cars and in doing so sacrificing profits.

We irregularly trim positions to add to others across the portfolio. Occasionally we’ll sell an entire position outright. For example, we eliminated a position in Hexcel, a manufacturer of intermodulus carbon fiber – reinforcement products and engineered products for the defense, aerospace, energy and electronics industries. The proceeds financed a growing position in Dollar General, our rural retailer that we trimmed in 2020 and more recently materially added to, as the stock declined lower and lower, growing in our opinion cheaper and cheaper. Hexcel’s profit margin is double Dollar General’s.

We’ve increased Dollar General’s position size from 1% of invested capital to over 10% recently. We made a downward adjustment to our estimate of Dollar General’s normalized profit margin nowhere near the company’s 30% earnings shortfall in 2023 that we deem *mostly* temporary. Per the earlier point on understanding margin levels, the company massively over earned in the pandemic. Regardless, making Dollar General our second-largest holding creates a big impact on our *portfolio* profit margin. Our estimate for the retailer’s normalized profit margin is a bit over half of the overall portfolio’s but less than half of where the portfolio overall margin was a few years ago. If we were to go wild today and pay over 45x earnings for Costco, one of our favorite companies, we’d see a further reduction in the portfolio margin as Costco earns about half the margin of Dollar General. We’d likely have a poor experience with the new Costco shares when the multiple contracted but not for its low margin. It’s not the margin on sales that counts but the margin on invested capital.

The side-by-side comparison of fundamental measures demonstrates the degree of undervaluation and strong capitalization in the portfolio against the index. The 9.7% earnings yield is more than double the index’s yield. Of our 9.7% earnings yield, 1.7% is paid to us as dividends. The 8% balance is retained by our portfolio companies and invested for what we work to ensure is for our benefit. The businesses are reinvesting today at an aggregate 16.2% return on equity. With only 12.5% of net debt employed as a proportion of total capital (versus 45.4% for the index), our businesses earn 15.5% on total capital – nearly as much as they do on equity. By contrast, the *much* lower 4.5% S&P 500 index earnings yield actually produces a lower 1.5% dividend yield with only 3.0% left for company reinvestment compared to our 8%. It’s a startling differential that works to our advantage over time. The right price matters.

Timeout for a quick math and logic break. Far too frequently you will read the following in an article or report, “Such and such a company pays an x percent dividend to the shareholders.” Or better, “This or that company pays a certain y dividend yield.” Your reflexive and correct response should be, “NO! THEY DON’T!” The dividend yield and its earnings yield cousin are simply a function of the amount of dividends or earnings relative to the price of the security or company. It’s the same whether in per-share terms or in dollar terms. To illustrate, presume a stock trades for \$100 per share. The company earns \$10 per share in profit and pays half of that as a dividend. The earnings yield is the profit as a percentage of the share price ($\$10 / \100) or 10%. The earnings yield is merely the inverse of the price-to-earnings multiple, or the P/E. Dividing the \$100 stock price by \$10 in earnings gets you a 10x P/E multiple. Ditto for the dividend yield. Of the \$10 in earnings per share, \$5 of that is paid as a dividend, making the dividend yield 5%. The company has *elected* to pay a \$5 dividend, which happens to be half of earnings, making the dividend payout ratio 50%. Companies can *target* a payout ratio as a proportion of earnings, but they can’t control the share price (despite monster share repurchases – another story for later).

Suppose now the stock drops immediately from \$100 per share to \$50 per share (ouch) but the company still earns \$10 and pays the same \$5 dividend. The company still *elects* to pay a \$5 dividend, which is an election in its control. It didn’t control the stock price decline, but both the earnings yield and dividend yield have now *doubled* thanks simply to the stock price falling by half – to 20% for the earnings yield and 10% for the dividend yield. If instead the stock price had doubled to \$200 per share, the earnings yield would now be 5% with a 2.5% dividend yield. The company is not *paying a yield*. The company doesn’t *choose* a dividend yield. It chooses the *dividend amount paid* and the stock price on any given day dictates the yield. Mr. Market changes earnings yields and dividends every trading day, every trading minute. Now unlike me, if you weren’t already shaking your head at Bubblevision when some guru explains some company is “paying a dividend yield,” you can now feel free to join me. It’s cathartic.

The portfolio receives a mere 17.5% of profits earned by our companies as dividends. Are we being cheated? In the case of the Semper portfolio, generally not. The balance of profits are reliably being reinvested at the portfolio’s 16.2% return on equity. A critical element of our analytical work is determining how well company managements reinvest profits. The fact that portfolio businesses use so little debt means a substantial proportion of our 16.2% return on equity is on a *nearly net unleveraged* basis. Compare again the difference here with the index. **The S&P 500’s 33.3% dividend payout as a proportion of profits is nearly double Semper’s but produces a lower 1.5% dividend yield versus our 1.7%.**

From the table, the index does have a higher return on equity than Semper’s 16.2%. However, index companies in aggregate employ substantially more debt than ours to achieve a higher return. It takes nearly as much net debt (debt minus cash) as equity in the index companies’ capital structure to produce only a 3.8% higher return on equity. But given far less debt employed, Semper’s companies earn 15.5% on capital whereas the index companies only earn 12.5%. Our businesses earn 24% more profit on each dollar of *capital* employed. Perhaps understated in a world awash in leverage, but returns on capital are far more important than returns on equity, particularly when large amounts of debt are used. Few are the companies that have gone bankrupt that avoided debt.

While on the subject of returns on equity, the price paid for each dollar of Semper equity is 1.7x, up from 1.6x a year ago. The index investor is paying 4.5x for each dollar of equity, or book value, against 3.8x a year ago and nearly matching 2021’s record 4.7x. Paying more than 2 ½ times as much for each dollar of book value to earn 20% instead of 16.2% on equity, but to also earn only 12.5% on capital versus our 15.5%? That’s a big, levered premium. Way more leverage. Not much more return on equity and less return on total capital. Much more risk.

Math being math and earnings yields being earnings yields, the return on equity as a multiple of the price-to-book ratio yields the earnings yield. A 20% index return on equity divided by its 4.5x multiple to book yields 4.44%, which happens to be the index earnings yield, which happens to be the inverse of its 22.4x P/E multiple. Semper's 16.2% return on equity is on a lower 1.7x multiple to book, which gets us to our 9.7% earnings yield, which is the inverse of our 10.3x multiple to earnings. It all gets us to the same place. **We think we are getting far more for far less with far less debt.** At least that's what the math says.

Also, know that massive share repurchases at large premiums to book value have driven stated book values lower and lower. Throw in massive write-offs of assets and equity over time and book values are further understated against pesky things like replacement cost and the cost of capital.

After a third or more of profits are sent to S&P 500 index shareholders as dividends, in many years *more than 100%* of the retained balance is used repurchasing shares to merely offset the dilution that results from giving 2% of the average company to insiders each year as options and restricted shares. Share reduction of the index companies was a modest 0.7% per annum for the past decade. Said differently, index companies spent roughly two-thirds of profits purchasing 2.7% of their market capitalization each year, yet only reduced the share count by 0.7% annually. Retained earnings for the index are NOT reinvested at the return on equity. All retained earnings are spent repurchasing expensive shares. Repurchases made at high prices destroy capital. Shares bought at today's 22.4x P/E earn 4.5% for shareholders, not the index's 20% return on equity that one might expect. If no profits are left after paying dividends and repurchasing shares, what funds growth capital expenditures and growth research and development? Bueller? Bueller?

S&P 500 component members spent \$923 billion in 2022 on share repurchases, easily breaking 2021's \$882 billion record, yet profits declined. A quarterly record was set in 2022's first quarter when firms spent \$281 billion buying shares totaling 69% of operating profits (before write-offs). Despite recovering profits this year, I'm estimating that repurchases fell over 17% to below \$800 billion in 2023 (the first two quarters are in the books and I'm estimating on the second half cadence). Repurchases are in steady decline since that early 2022 quarterly record.

\$213.84 in expected earnings per share for the index equates to \$1.79 trillion in 2023 profits, making repurchases about 44.7% of earnings. That's a low proportion of income spent buying shares over the last couple decades, except in times of trouble. What's happening? Repurchases decline in recessions when profits fall. They plummet during crises. They fell off a cliff during the pandemic and in the 2008-2009 Global Financial Crisis (which happened to be the moments when shares were in the tank and fundamentally attractive). Are we in a recession already? The index share count (measured by its divisor as reported by S&P Dow Jones) rose a meaningful 1.5% in the second half of 2023. The share count goes up when firms raise net new equity or don't offset dilution, both of which happen when things are bad. Are things bad? We think so. Why otherwise are managements practicing their longstanding gambit of buying high and selling low?

Forward Expectations – price is what you pay, value is what you get

The Semper investment process centers on evaluating ongoing competitive positions of companies we own and the durability of their profitability. Provided assessments of *economic* profitability prove durable, we should earn at minimum the earnings yield on the portfolio, today at 9.7%. From a core base of the earnings yield, additional returns are expected and can be articulated two ways. First, to the extent that process and discipline allow us to occasionally purchase businesses for less than they are worth (during Mr. Market's depressive phase), then any accretion to fair value is added to the earnings yield over some period of time. Paying 75 cents on the dollar of intrinsic value, an additional 33% ($100/75=1.33$ or 33% increase) is expected. From two-thirds of value we'd expect an accretion of 50% ($100/66.67$). Buying an asset at half off yields a double ($100/50$). Easier said than done, naturally, but a disciplined process tends to produce the expected return over time. For much of our quarter-century history, the portfolio traded at a low-double-digit multiple to earnings, often at a 7% to 9% earnings yield. At a typical purchase discount of a third to a quarter of value, we've seen a "bonus" 2% to 4% additional return over time on top of the earnings yield, so a 9% to 13% return on the stock portfolio before any drag from cash (or addition from cash when equity returns are below cash yields) in client portfolios and before management fees.

Long-term return expectations begin with the current 9.7% earnings yield. The higher-than-normal yield, again the inverse partner to a lower-than-typical P/E multiple, suggests the portfolio discount to intrinsic value is wider today than at most times. Indeed, at 61% of intrinsic, we'd add 2% to 4% upside earned over a period of years to the 9.7% earnings yield. This may sound outlandish but adding 2% to 4% to today's 9.7% earnings yield seems reasonable over time and would produce returns somewhat higher than the portfolio earned on average over the past quarter century. Periods of decline, sometimes substantial, will certainly accompany Semper's returns, but armed with a historically low absolute and relative valuation seems an advantage looking forward.

Perhaps a better way to describe expected return is to again begin with the earnings yield as a base and add the return generated on earnings not paid to us as dividends, but at the rate at which our companies produce returns on retained earnings. Expected earnings begin with the earnings yield and trend to the underlying return on equity over time, particularly if investments in companies are held over long time periods.

This example will likely be repeated in ongoing annual letters. We are durable earning power investors. The profits generated by our portfolio companies are absolutely the base from where returns are derived. A lot of work goes into assessing current and future profitability. Understanding how profits inure for our benefit as shareholders is critical. The earnings yield consists of two components – the dividend yield and what I like to call the retained earnings yield. Think about it in this simplistic fashion:

$$D + RE = E$$

$$DY + REY = EY$$

Where:

D = Dividends
DY = Dividend Yield

RE = Retained Earnings
REY = Retained Earnings Yield

E = Earnings or Net Income
EY = Earnings Yield

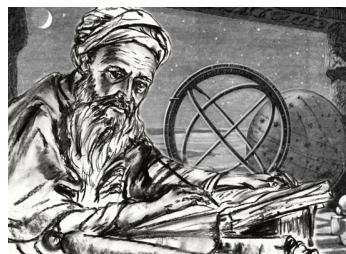
Basic math. Charlie had this to say about fluency with numbers:

... (this) helpful notion mimics Galileo's conclusion that scientific reality is often revealed only by math, as if math was the language of God. Galileo's attitude also works well in messy practical life. Without numerical fluency, in the part of life most of us inhabit, you are like a one-legged man in an ass-kicking contest.

Charlie had as many uses for the word “ass” as George Carlin had with his favorite word.

Applying our simple formulas and some algebra to the portfolio, begin with our calculated aggregate 10.3x P/E multiple. The inverse of the P/E multiple is the earnings yield, so E/P is 9.7%. It is the earnings produced by a dollar of current market value (or price). Equate it to a \$1 million asset producing \$97,000 in profit. That's a 9.7% earnings yield. We know the proportion of profits paid as dividends and at year-end, prices resulted in a 1.7% dividend yield. The remainder of profits not paid as dividends, 8%, are retained. It's what happens with that 8.0% retained earnings yield, or \$8.00 for every \$100 of market value, that drives incremental return. Closing the circle on the math, the dividend payout ratio can be calculated as the dividend yield divided by the earnings yield, so $(1.7/9.7) = 17.5\%$.

The subject of numerical fluency reminds me of Ms. Gianfrancisco, my 7th and 8th grade Catholic school math teacher, who proudly convinced us the Italian mathematician, Paolo Ruffini, invented algebra, which turned out not to be true. Ruffini may have permuted groups, but he was no inventor. Turns out no one individual can be credited for ruining a daily hour for billions of middle schoolers worldwide but the “father of algebra” is considered to be Muhammad Ibn Musa al-Khwarizmi, a ninth-century Persian astronomer and mathematician who rounded up a bunch of earlier unnamed algebraic works by ancient Indians, Mesopotamians and Egyptians and downloaded them into his new page-turner that he titled *al-Kitāb al-Mukhtaṣar fī Ḥisāb al-Jabr wal-Muqābalah* which translates as *The Compendious Book on Calculation by Completion and Balancing*. The genius of Al-Khwarizmi was the perspicacious use of the Arabic “al-Jabr” which means “the reunion of broken parts” and which translates as “algebra.” Che figo! Rumor has it Ben Graham's inspiration in naming *Security Analysis* came from his study of his prized first-edition signed copy of Al's book where he foresaw that with a killer title, he would eventually become the Father of Value Investing. Later, Ms. G., as our math teacher was also known, also taught PE (not P/E multiples) and tried convincing us that the NBA played exclusively zone defense. Our point guard's uncle was an NBA ref, so we weren't buying it, and thus skepticism about Paolo, and Ms. G., grew. Now that anybody *still* reading feels like so many helpless souls in algebra class staring at the clock, let's turn the page to the task at hand.



Profitability properly measured is not so much at the margin level but instead against how much equity capital and total capital it requires to produce said profit. To begin, we must determine profitability as measured against equity and total capital. Then, we must estimate the rate at which a company can durably retain that portion of profits not paid as dividends and do something intelligent with it. Some companies have abundant opportunities for reinvestment while others do not. One of the most important things we do is figure out those opportunities, or lack of them, and then measure what companies actually do with any retained money.

The aggregate collection of our businesses earns 16.2% on equity capital and 15.5% on total capital. The return on capital is not far below the return on equity, given the lack of net debt on the collective balance sheet. Many holdings use no net debt or have more cash on the balance sheet than debt. Expected returns begin with today's 9.7% earnings yield and trend toward the 16.2% return on equity over time.

Any new or incremental Semper investments deploying proceeds from dividends, new capital (deposits) and proceeds from portfolio sales and trims generally suffer the fate of a drag against returns if the earnings yield at purchase is lower than the return on equity of new shares acquired. In our experience this is typically the case. I've attempted explaining this in past letters and don't think it's been well described. Perhaps the best example is with the return experienced by a fixed-income investor. Presume the purchase of a 30-year bond at par paying a 5% annual coupon. The investor that happens to reinvest all annual coupon payments at the like 5% initial yield will earn 5% over the life of the bond. However, if interest rates permanently fall below 5%, then all reinvested coupons necessarily mean the investor's total return is less than 5%. Something similar would be true if higher subsequent rates prevail and the investor will earn more than 5%.

In the world of stocks (at least as we approach it), we frequently purchase shares with high-single-digit earnings yields (low teens P/Es). If the initial earnings yield averages 8% *AND* our companies earn 8% on current equity and future retained earnings, then we are likely to earn about 8% over time. You can have interim changes in multiples to earnings and to equity but the investor in stocks is generally going to earn the return on equity over very long periods of time. You can find a section on this subject in our 2018 annual letter in a section titled, "*The ROE You Will Not See.*" The gist of the section discusses the payment of premiums at the outset of purchase concept and delves into why long-term equity investors have not earned the very long-term 13% or so return on equity. Think write-offs, write-downs, bankruptcies, recapitalizations, overpaying in share repurchases... Just know that it's only the long-term investor in businesses (not stocks as trading vehicles) that can expect to see an initial earnings yield drift toward the return on equity of the business over time. Why are banks typically horrible investments over decades? They earn a crappy long-term return on equity because they have to recapitalize at every crisis. Why have Chinese stocks performed terribly over decades? Well, lots of reasons, but Chinese companies rarely run their operations with a return-on-capital motivation. Many are state-controlled and invest not for profit but for growth, or for graft...

Portfolio activity must add enough value to overcome the drag of always having to pay the multiple to earnings with the proceeds from any portfolio sales (and that's without considering taxation). I think we do this well, but it's very difficult for most active investors to do so. In my experience, few investors even contemplate or understand this hurdle when selling a position. Opportunity cost, remember? There exists the alternative to not sell. It's this understanding that contributes to Semper's generally low but opportunistic portfolio turnover.

Most of our portfolio businesses genuinely have opportunities to invest retained earnings at or above the return on equity of our portfolio. Some, like Berkshire Hathaway, can retain all profit and deploy it well. Others have the ability to reinvest some but not all profit and distribute the balance to shareholders as dividends. Companies like Costco and Dollar General fit the bill here. A few have little to no opportunity set, which is where capital allocation skill and awareness of circle of competence and opportunity cost comes into play. In these cases, paying large portions of all profits as dividends may make the most sense. When share prices are sufficiently cheap, then share repurchases with most or all profits may make the most sense.

Contrast Semper's companies on one hand, either reinvesting in profitable growth or paying much of profit as dividends when growth makes no sense, or repurchasing shares when they trade at material discounts to intrinsic value with, on the other hand, what's gone on more broadly in the stock market and specifically with the aggregate of the S&P 500.

S&P Expectations – history repeats, again?

Expected returns for the S&P 500 index can be similarly approximated. Despite 2023's 26.3% total return, we find the index extremely overvalued. Let's presume an investor expects to earn the current 4.5% earnings yield plus (or minus) any accretion to intrinsic value over some period, just as with our portfolio.

Our estimate of intrinsic value for the S&P 500 is well below 2023's closing price of 4,770 (which nearly matches 2021's 4,766 close). Fifteen times \$213.84, the present Wall Street analysts' operating earnings estimate for 2023, produces a 3,207 price, or 33% lower than at yearend. Without calculating the answer, if you start with a 4.5% earnings yield and the price declines 33% over some period of time, that ain't good. The critical question is where does the operating profit margin wind up over time? If economic and profit growth prove lower than expectations and lower than historical experience, the valuation is likely to be lower. If growth sprints ahead and margins recover upward to 2021's peak levels and beyond, then today's price may be a discount. Our guess is lower growth and difficult margins prevail.

Just as two years ago at 2021's valuations, we believed in March 2000 that stocks were at a secular peak, at least in the capitalization-weighted S&P 500 that grew to be dominated by a number of incredibly overvalued technology, media, telecommunications and internet companies. We were correct. The index spent much of the next 15 years underwater and to this day its returns are way below the long-run return from stocks and way, way below expectations of the day.

We also believed in March 2000 that despite the S&P being at a secular peak, there were a growing number of incredible bargains and that a properly invested portfolio would outperform the index over the coming decades. We were also correct.

The problem was, in March 2000 few believed what we believed. The S&P 500 compounded with dividends at nearly 20% from its prior secular low in August 1982. The price alone of the index rose nearly 15x, from 102 to 1,527. During the final blow-off top, the aforementioned tech stocks displaced the more pedestrian blue chips, and the world clamored for everything tech and internet. The Nasdaq 100 exploded, surging 102% in 1999 alone. We managed a 29% return that year, our first as a firm, but we bears on tech were no fun on the cocktail circuit. Warren Buffett and Charlie Munger were lambasted at their own Berkshire annual meeting for being out of touch. Using the rear-view mirror as a guide, both the everyday armchair individual investor and sophisticated institutional investors expected 16% annual long-term returns when polled in 1999 and early 2000. They got 7%.

If only we had a tool to help demonstrate the degree to which the S&P 500 was dangerously overvalued and our ragtag portfolio of single-digit P/E small and midcap companies, unloved Japanese firms and a most recently acquired, previously cut-in-half Berkshire Hathaway, by contrast, was conservatively undervalued. Hence, the first Semper Augustus Intrinsic Value Report was hatched on March 31, 2000, demonstrating the portfolio valued at 15.6x earnings and thus a 6.4% earnings yield. Across the aisle, the S&P traded at 40x and a miniscule 2.5% earnings yield. The report measured the portfolio at 84% of intrinsic value, giving it 19% upside over some period. The intrinsic value of the index was approximated at 590, stunningly 61% below the index's 1,499 price.

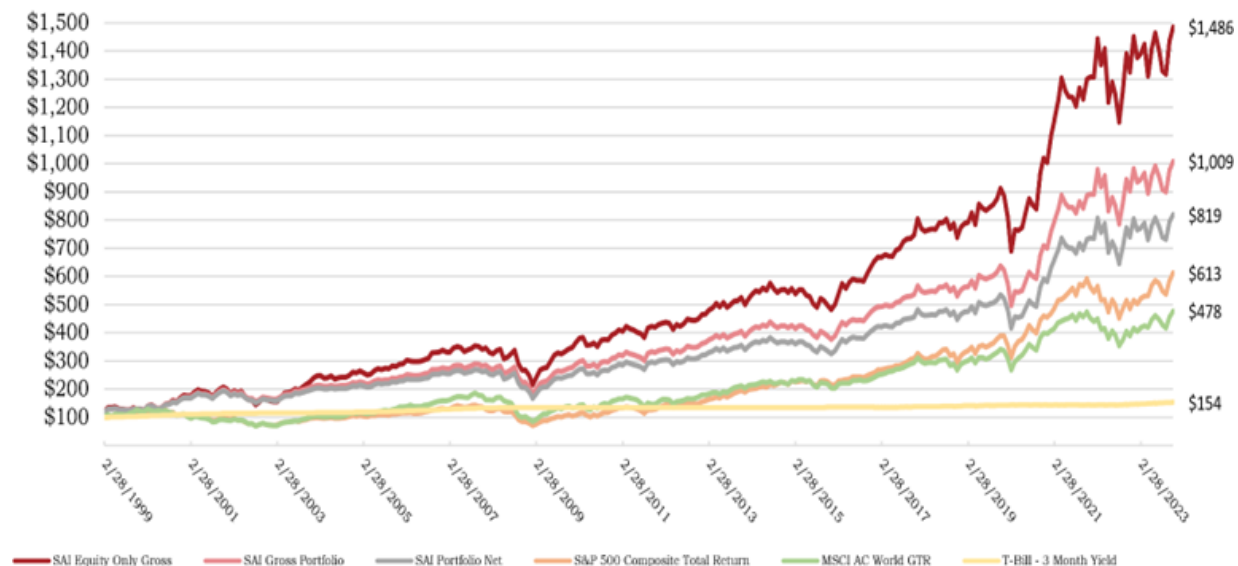
The Intrinsic Value Report suggested three possible outcomes: (1) a quick, painful decline to fair value; (2) painfully, not making any money for a long, long time; or (3) some painful combination of the first two. The report became a tool that helped make the case to not chase the tech bubble and to avoid owning index funds. The index investor was rewarded with all three outcomes. Over the next 2 ½ years the S&P dropped in price by half, to 777. In the words of the epic Homer, "D'oh!" Then Ben Bernanke came riding in, put a put under it, and sent the index upward to its previous secular peak by 2007 (bubbling up

residential real estate at the same time). Unfortunately, our three outcomes were still in play when the Financial Crisis sent the S&P to the depths of hell, touching Satan's 666 in March 2009. Nine years had passed since we calculated the S&P's value at 590 in March 2000. Nine years of economic growth and growth in profits meant the intrinsic value was higher and the demonic 666 was that much lower relative to value. Double d'oh! It took nearly a decade and a half from March 2000 for the S&P to finally recover and hold above its prior 1,527 price peak. From March 31, 2000, when we first ran the Intrinsic Value Report, the S&P produced a 7.0% annual return by year-end 2023. That's almost 24 years earning 3.5% per year below Ibbotson's famous 10.5% long-term return earned over more than a century, on average. Treble d'oh!

Semper and the S&P – patience and decisiveness

It doesn't sound like a 7.0% index return since March 31, 2000 (or 7.6% for the index from the time Semper set sail in early 1999) through 2023 is such a bad thing, does it? For those that didn't cement losses by pulling the plug in 2000-2002's death spiral or during the 2008-2009 bloodbath, the Hold On for Dear Life (HODL) index investor made roughly six times their money (with dividends) since our start in early 1999 and about five times from the end of 1999.

Making five or six times your money over 24 or 25 years sounds good, especially as bond investors only grew to about \$3 million while anyone hiding out in U.S. T-bills safely grew each \$1 million to \$1.5 million (sadly, thanks to inflation above bill rates for much of the period, cash investors can now barely afford a pack of 7 Tootsie Pops at the Dollar Tree, which used to be 20 Pops before the tech bubble popped). The power of compounding over very long periods of time and the impact of only modest differences in returns is extraordinary. Our "Climb the Mountain Chart" from our inception is telling. Note that we launched the firm just over a year prior to 2000's secular peak. Bad timing? Hardly. It was a great time to be a value investor. Prospectively, that was, as many value investors would like to forget the last four or five years of the great 1990s bull market. Ring a bell?



Despite our belief in 2000 that the market was perched at a major secular peak, we owned a portfolio of undervalued gems that compounded at 11.5% over our 25-year history, 3.9% above the S&P, 1% above Ibbotson's long-term, 5% above MSCI's All-Country World Index (which increasingly looks more like

the S&P thanks to the non-U.S. part sucking wind for the past quarter century, at least). Our stocks compounded to not the S&P's \$6.1 million but to nearly \$15.0 million. A not insignificant proportion of cash across some of our client portfolios (a Tootsie Pop reserve) shaves the overall return by 1.7% to 9.8% which doesn't sound like much of a drag, but over 25 years only grows the original \$1 million to \$10 million, not to \$15.0 million with no cash. Incidentally, the penalty for holding a similar portion in cash and the balance in the S&P 500 wasn't as severe. Why? The drag on earning only 1.8% in T-bills while the index earned 7.6% is way less of a drag when earning the bill return against Semper's 11.5% return in our stocks. There is a **HUGE** lesson here about the demerits of owning cash as a long-term allocation in an investment portfolio. Naturally, having just written that, we are probably cursed. The investor sitting it out in cash (or longer treasuries, or gilts, or railroad bonds) in 1929, and who then put it to work in 1932, pulled off one of the great feats in investment history. But nobody did that, right? Actually, we know that guy. He was Semper's anchor investor, client number one. You can read about him in the *Benign Neglect* section of our 2021 letter, *Brown Sugar*. Not only did he bypass the carnage of the Great Depression but pivoted to Semper from a portfolio that would have *underperformed* the underperforming S&P 500 from 1999 forward (due to a concentration in a number of blue chips that we sold, rightly reasoning they would become red chips). Like Charlie, we lost Mr. Smith just days shy of his 100th birthday. It was one of my life's great honors and privileges to share our time together during his waning years. If you didn't already see the section in the 2021 letter, please take a look. I referred to Mr. Smith as the Godfather of Value Investing to Ben Graham's Father of Value Investing. He was one of the greatest unknown investors and among the greatest human beings.

Expected returns couple the earnings yield with the purchase of stocks at a discount to intrinsic value. Accretion of the discount over some period plus the earnings yield equals the expected return. The process seems to stand the test of time. Since running the Intrinsic Value Report for the first time in 2000, the portfolio earnings yield averaged 7.7%, or 13.0x earnings. At an average 75 cents on the dollar of intrinsic value over the years, the presumed 33% accretion to value earned over a period of years should add perhaps 2% to 3% to the earnings yield. A 9.6% to 10.6% expected return range compared to an 11.5% average actual return over 25 years has us playing in the infield. We presume the fact that our long-term returns were 1% to 2% higher than expected can be chalked up to our active management approach (offset by the inevitable mistakes) and long holding periods where returns trend to the portfolio return on equity. Expectations against results are within the ballpark of reason. As for expecting history to repeat and actual results to trump expectations, modest premium returns realized over the full period may simply reflect much stronger than expected returns on average in recent years.

The purpose of the table below is to compare the beginning earnings yield every year over the past 25 years against the subsequent long-term return realized from that point.. A higher initial earnings yield should forecast a higher subsequent compound return. The hypothesis tends to bear out. For example, a 10% initial earnings yield at the outset of 2009 (deep in the Financial Crisis) resulted in a 12.1% return from that point through the end of 2023. Periods beginning with lower earnings yields generally corresponded with lower subsequent cumulative returns. At the outset of 2007 a low (by our history) 7% earnings yield resulted in only a 9.2% compound annual return. The shorter time series toward the lower portion of the table are impacted by near-term returns, which can be all over the map. In other words, don't expect a return over the next year to match expectation. The voting machine wins in the short term. 2023 was most certainly aberrational in that the 10.6% earnings yield produced a one-year 12.1% equity portfolio return. Walks down Wall Street are typically random. Marathons, not so much. At almost any moment during 2023 until the closing bell on December 29, the return was deviant from the final result. Returns were basically flat at September 30, but given the 12% charge in the final stretch the portfolio had a "normal" year. Portfolio fundamentals were even cheaper on September 30. Is that why prices rose over the next three months? That's not how it works. Don't overthink the short term.

Year	SAI Equities Only	CAGR from 2023	CAGR from 1999	Beginning Earnings Yield	Beginning P/E Ratio
1999	29.1%	11.5%	29.1%	7.7%	13.0
2000	30.7%	10.7%	33.1%	6.4%	15.6
2001	23.1%	9.9%	29.4%	6.6%	15.2
2002	-22.0%	9.4%	13.4%	7.4%	13.5
2003	38.2%	11.1%	18.2%	7.9%	12.7
2004	16.3%	9.9%	17.9%	7.7%	13.0
2005	7.4%	9.6%	16.3%	8.2%	12.2
2006	18.4%	9.7%	16.5%	7.3%	13.7
2007	3.1%	9.2%	14.9%	7.0%	14.3
2008	-21.6%	9.6%	10.5%	7.5%	13.3
2009	27.9%	12.1%	12.0%	10.0%	10.0
2010	14.4%	11.0%	12.2%	8.4%	11.9
2011	7.1%	10.8%	11.8%	8.3%	12.0
2012	6.8%	11.1%	11.5%	8.7%	11.5
2013	17.3%	11.5%	11.8%	8.9%	11.2
2014	5.2%	10.9%	11.4%	8.0%	12.5
2015	-10.3%	11.6%	10.0%	7.7%	13.0
2016	27.7%	14.7%	10.9%	8.1%	12.3
2017	18.0%	12.9%	11.3%	7.6%	13.2
2018	-1.4%	12.1%	10.6%	7.2%	13.9
2019	23.6%	15.0%	11.2%	8.2%	12.2
2020	11.9%	13.0%	11.2%	7.4%	13.5
2021	27.3%	13.3%	11.9%	8.0%	12.5
2022	2.1%	6.9%	11.5%	9.3%	10.7
2023	12.1%	12.1%	11.5%	10.5%	9.5

Inception Date 2/28/1999

At the outset of 2024, the portfolio's 10.3x P/E is lower than at the outset of all but two years over our history. The multiple suggests we earn our 9.7% earnings yield and some bonus level of accretion as the undervalued portfolio holdings migrate upward to their respective intrinsic values. With a historically high initial earnings yield, and most of our profits retained by companies that are largely capable of reinvesting in their businesses at the portfolio 16.2% return on equity, we really like how the table is set. We'll make mistakes for sure, but as we scroll through the roster of our companies and the folks running them, we like what we own. It's a good thing because we and our companies will face extraordinarily difficult, gale-force headwinds in the years to come.

Among the issues facing investors, industry, governments and hence society, front and center are dangerously high debt levels among governments and corporations (not ours) fostered by central banks too willingly accommodative and too unaware of the threat posed by their folly (think China). Overbuilding is pervasive among numerous asset classes and in many places (think China). Demographics are in worse shape since the world began industrializing around 1870 and are extremely poor in certain geographies (think China). Combining our thoughts, the economic landscape is far worse

than it was decades ago. We are “thinking China” only to set the stage for an upcoming section later in the letter. Leverage in the industrial world is colliding with demographics virtually everywhere. China is the world’s problem, but the world is awash in the same problems making China the problem to the world. The U.S. is in better shape than most, but nasty detours like depressions, inflations and even hyperinflations may severely skew even the long-term expectations. Even with inflation seemingly in decline from high levels seen over the last two years, more and more conversations about returns going forward are likely to focus on the real and not the nominal. As strong and undervalued as our businesses are, you never know when a side-panel on your aircraft’s fuselage just blows off midflight. The economy is a midair collision waiting to happen.

HOW TO MAKE MONEY IN STOCKS (AND NOT LOSE IT)

“There is no better teacher than history in determining the future. There are answers worth billions of dollars in a history book.” – Charlie Munger

“It’s waiting that helps you as an investor and a lot of people just can’t stand to wait. If you didn’t get the deferred-gratification gene, you’ve got to work very hard to overcome that.” – Charlie Munger



“I think that one should recognize reality even when one doesn’t like it; indeed, especially when one doesn’t like it.” – Charlie Munger

One of the greatest investors known to the world, Charlie was a greater philosopher, realist and optimist. He recognized the importance of knowing history. Too few investors appreciate or even care to know the lessons of financial history. Charlie lived the entirety of the secular peaks and troughs below. He was raised in the Great Depression and for it, developed immense rationality. Quick to spot fads, schemes and manias, he had a keen recognition of reality. Leaning on Charlie’s wisdom will be critical to navigating the backside of what was most likely a recent secular peak in the stock market and the economy.

A Century of Secular Peaks and Troughs – far from the next bottom

	9/29 Peak	7/32 Low	3/37 Peak	4/42 Low	2/66 Peak	8/82 Low	3/00 Peak	10/02 Low	10/07 Peak	3/09 Low	12/21 Peak	12/22 No Low	12/23 No Peak
S&P 500	34	4	20	7	94	102*	1527	777	1565	666	4793	3840	4770
After-Tax Profit Margin	8.9%	-3.2%	6.4%	6.6%	6.7%	4.0%	7.4%	5.8%	9.4%	-0.1%	13.3%	11.5%	11.4%
Price to Op Earnings (TTM)	26x	NMF	8x	7x	18x	8x	33x	19x	22x	NMF	23x	20x	22x
Price to Earnings (CAPE)	30x	4x	23x	9x	25x	7x	44x	23x	28x	15x	38x	29x	32x
Price to Sales	2.31x	0.48x	0.51x	0.46x	1.20x	0.32x	2.13x	1.11x	1.57x	.666	3.04x	2.19x	2.55x
Price to Book Value	3.0x	0.3x	2.2x	0.8x	2.4x	0.9x	5.2x	2.3x	3.0x	1.5x	4.7x	3.8x	4.5x
Dividend Yield	3.0%	17.5%	3.7%	8.7%	2.9%	6.1%	1.0%	2.0%	1.7%	4.0%	1.3%	1.8%	1.5%
Market Cap All Stocks	93.3B	15.3B	66.2B	32.4B	624B	1.1T	14.0T	7.0T	15.9T	7.0T	48.8T	38.9T	48.3T
GDP	103.7B	58.8B	91.9B	162B	789B	3.3T	9.9T	11.0T	14.6T	14.4T	24.7T	26.4T	27.9T
Market Cap to GDP	90%	26%	72%	20%	79%	33%	141%	64%	109%	49%	198%	147%	173%
Exports / GDP	5.7%	3.3%	4.3%	2.6%	5.0%	8.5%	10.7%	9.1%	11.5%	10.9%	10.8%	11.6%	11.1%
Imports / GDP	5.3%	3.2%	4.3%	2.8%	4.6%	9.1%	14.4%	13.2%	16.5%	13.8%	14.4%	15.4%	14.0%
Net Exports / GDP	0.4%	0.1%	0.0%	-0.2%	0.4%	-0.6%	-3.7%	-4.1%	-5.0%	-2.9%	-3.6%	-3.8%	-2.9%
Total Credit Market Debt	175B	150B	159B	227B	1.12T	5.2T	26.7T	32.2T	51.2T	54.6T	89.2T	94.2T	98.0T
Total Credit Mkt Debt / GDP	169%	255%	173%	140%	142%	158%	270%	293%	352%	380%	362%	357%	351%
U.S. Government Bond Yield	3.4%	3.5%	2.6%	1.9%	4.6%	14.6%	5.9%	4.7%	4.9%	3.5%	1.9%	4.0%	4.0%
U.S. Discount Rate	6.0%	2.5%	1.5%	1.0%	4.5%	10.75%	5.5%	1.25%	5.0%	0.75%	0.25%	4.5%	5.5%
Inflation (CPI)	0.6%	-9.9%	3.6%	10.9%	3.7%	11.0%	3.4%	1.6%	2.9%	-0.4%	7.0%	6.5%	3.4%
Unemployment Rate	2.3%	24.9%	11.7%	4.9%	4.2%	10.8%	3.9%	6.0%	5.0%	9.9%	3.9%	3.5%	3.7%

*A peak price can approximate the subsequent trough price following 17 years, especially when marked by high inflation.

Source: Semper Augustus, Federal Reserve Bank of St. Louis, Bureau of Economic Analysis, Bureau of Labor Statistics, Standard & Poor’s, U.S. Treasury

Heading into 2023's final stretch, financial media was all atwitter (it's a word, look it up) over the S&P 500 flirting with a new all-time high. To their clear disappointment, no dice. Despite the Nasdaq 100's Magnificent Seven pushing the tech-heavy index to a new standard on December 27, finally surpassing its November 2021 mark and fully recovering from 2022's 33% shellacking, the S&P couldn't claw to the tape. Worry not, as I pen this late evening on Friday January 19, the S&P joined the party and likewise set its own new record this afternoon. Hooray! Time to shade the two rightmost columns in our now familiar Secular Peaks and Troughs table to green and red? Think again.

The Secular Peaks and Troughs table has appeared in several Semper annual letters over the past two decades. History being prone to either repeat or rhyme, it would be foolish to lack perspective on when the situation is very good or very bad, meaning it's always the coldest before the dawn. Some might say it's always darkest before the dawn. Steve Martin said something like, "You know, you have to laugh at least once a day, because a day without sunshine is like...night." The meaning of these geological truths and proverbs is that the time to buy is when there's blood in the street. Or is it don't shoot until you see the whites of their eyes? Fred Sanford said, "Don't shoot until you see the whites." That wouldn't pass on network TV these days. Regardless, the economy and capital markets often exhibit similar traits at secular extremes.

Year-end 2021 will likely go down as one of the great secular peaks, making it only the sixth such episode over the past century. Just as day follows night and night follows day, secular peaks must be followed by a secular low, otherwise the peak wasn't a peak. In hindsight, identifying these moments is easy; even still, not all agree on whether each moment was actually a peak or a trough (1937 comes to mind). We've selected these in the table over the years, and remarkably, Semper has been on hand for half of the century-spanning peaks and so far two of the five troughs.

If the S&P 500 just closed at a new record high, shouldn't either this be the peak rather than 2021, or should 2022 be a low and today a new peak? Glance at the top row of the table depicting the S&P 500 price at each successive peak and trough. If at 94 in 1966, how can a higher price in the next column be a trough? It's a higher price. The obvious answer is time happened, 16 ½ years of time. The index investor collected merely dividends and all of 8 price points over the brutally inflationary stretch of time. Similarly, over the last two years the index price essentially went sideways, albeit with a harrowing plunge and spectacular rise from the ashes. Between here and there, sales rose rapidly, profits not so much. High inflation accompanied the hit to margins. Our credit markets added \$9 trillion in debt, which financed \$3.5 trillion of GDP growth. That's nominal GDP. Unfortunately, inflation eroded 10.1% of the 13.3 cumulative two-year growth in nominal output, leaving inflation-adjusted GDP growing an underwhelming 1.6% per year. The new debt, and the old debt, will now be paid in depreciated dollars. The good news is we know where the printing press is. Call Jay anytime. He's always home.

Despite a full price recovery and new price high, valuations are below 2021's, which in most cases were records. Multiples to earnings, to book value and to sales are all lower than at year-end 2021. The capitalization of the entire U.S. stock market as a percentage of GDP, a Warren Buffett favorite proxy, stands at "only" 173% versus 198% two years ago. The market's price-to-earnings multiple is down to 22x from 23x, a veritable bargain if earnings are in the tank. Scrolling across the past century of peak and trough fundamental measures, outside of 2021's insanity you generally won't find higher figures. Against prior *peaks*, prices are high. Against prior troughs, if one believes a trough eventually follows a peak, then however many years into the future we arrive at said nadir, we have a long way to fall. Rest assured, upon arrival at the next secular trough, however long it takes to get there, lots of blood will have been shed. We're counting on not much of it being ours.

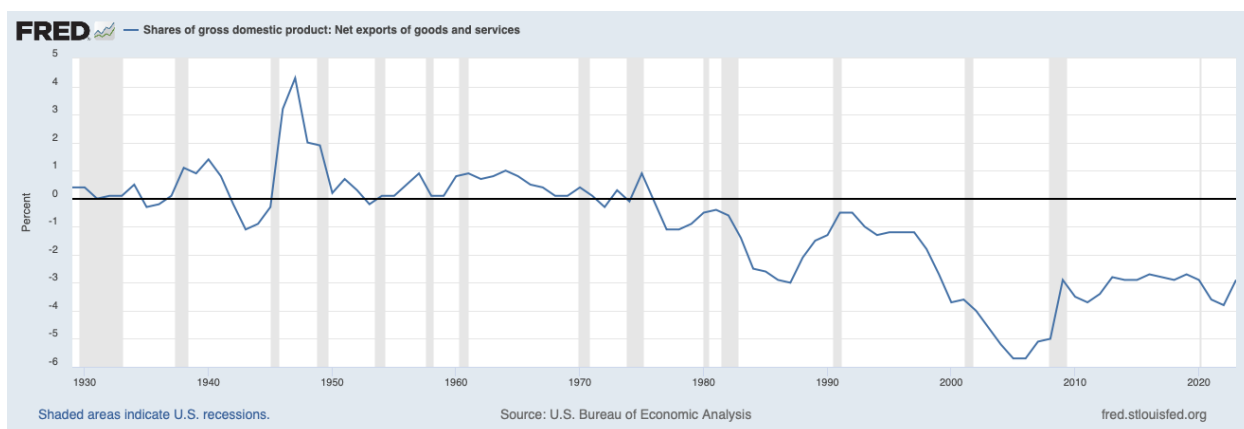
The 18% and 33% losses in 2022 in the S&P 500 and Nasdaq, respectively, painful as they were for those suffering declines, did not send valuations to secular trough levels. The S&P ended 2022 at 20x operating

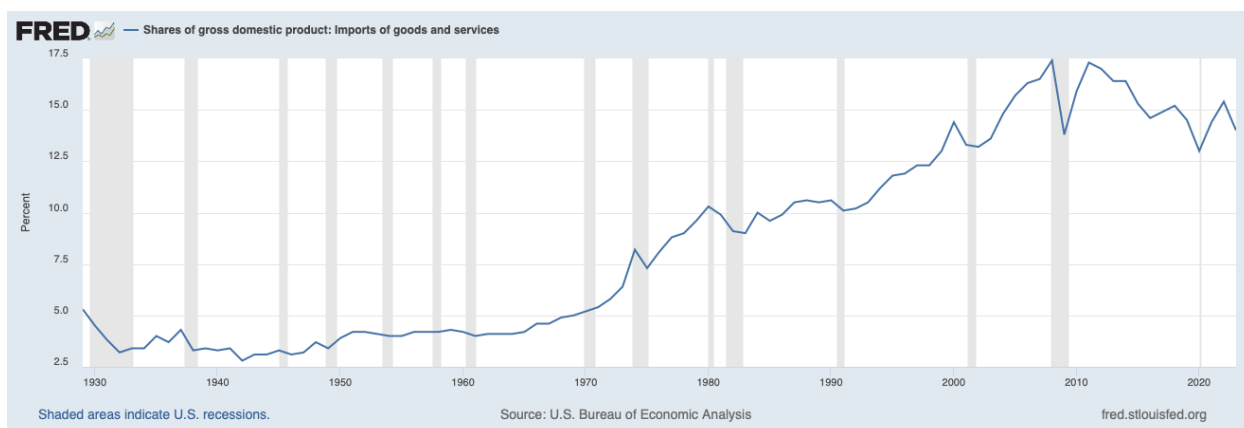
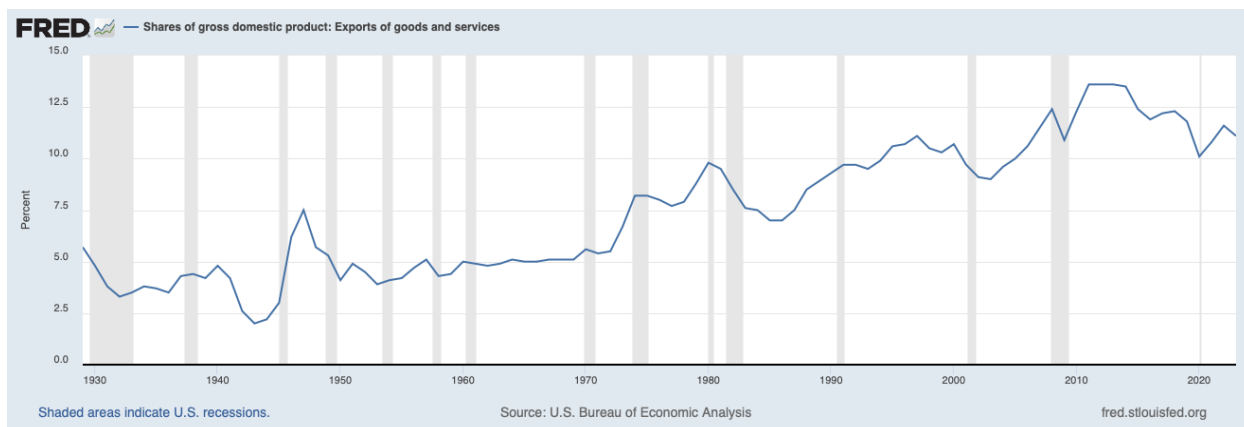
earnings, 2.2 times sales, 3.8 times book, a 1.8% dividend yield and with a 147% market capitalization to GDP. This is not the stuff of secular bottoms. Historically, these were measures of unsurvivable summits without the supply of an oxygen cannister. And a sherpa. And then, no sure thing.

The table's figures across the past century must be assessed in context. We've discussed the impact of higher profit margins, if they prove durable (which should remain above what had been considered a predictable range). Higher margins necessarily mean a higher price-to-sales ratio when holding multiples to earnings constant. Write-offs and write-downs of assets and equity translate to a higher price to book value and also to higher returns on equity, again holding multiples to earnings constant for the latter.

Market cap to GDP requires adjusting upward from the earlier years for the amount of trade as measured by business done abroad as well as the proportion of business conducted by publicly held companies versus private. On trade, the U.S. was a net exporter in the late 1920s. to the tune of a *net* 0.4% of GDP in 1929. However, it is the *absolute* level of trade relative to GDP that bears on the market cap to GDP relationship. The U.S. imported an absolute 5.3% of GDP in 1929 and exported 5.7%. Despite then being a much lower proportion relative to today's global economy, trade (both exports and imports) collapsed in the Great Depression through World War II. Under the Marshall Plan (your author being a proud great nephew of Uncle George), the U.S. helped finance the rebuilding of Europe and parts of Asia and became the policeman to global trade, its navy projecting power and protecting shipping lanes. Largely because of the role the U.S. played, global trade boomed, allowing industrialization broadly in places where it hadn't already taken place or begun. The U.S. has been a perpetual net importer since 1975, exports peaking from 2011-2013 at 13.6% of GDP and imports peaking in 2008 at 17.4%. Net exports peaked at 4.3% of GDP in 1947 while net imports peaked at 5.7% in 2005 and 2006. The absolute growth of trade after World War II pushed market capitalizations higher as business saw its share of sales and profits earned abroad likewise grow upward. The massive increase in trade was a huge tailwind for global GDP and industrial output. Has it peaked? Don't miss the upcoming China narrative.

This growth in global trade and its positive influence on GDP and business is so important to understand that our Secular Peaks and Troughs table now includes figures for exports and imports as a share of GDP as well as net exports as a share of GDP at each secular interval. Charts for these three trade relationships as a share of the economy are below for the years 1929 to 2022. The investor with a constructive idea of where each of these economic contributors are headed globally is armed with an advantage.





A refresher from Macro Economics 101 since we are discussing trade: If net trade results in an economy exporting more than it imports, the difference is additive to GDP. For nations importing more than exporting, the difference reduces national income, or GDP. Nations importing more than exporting run trade deficits. Trade surpluses are run by nations exporting more. In aggregate, global GDP has no net trade since all imports should match exports. Formulas always add gravitas to any paper. Greek letters a bonus. This is a 101-level annual letter so no Greeks. GDP is defined as:

$$Y = C + I + G + (X - M)$$

Where:

Y = Gross Domestic Product (GDP) or National Income

C = Consumer Spending or Personal Consumption Expenditures

I = Investment which is business spending on fixed assets, inventory and home purchases

G* = Government Spending by federal, state and local governments

X = Exports

M = Imports

(X - M) = Net Exports

* If the cats to the right knew what G would become, they *never* would have founded this place.



Debt levels relative to GDP climbed higher over the past century, kicking into overdrive after interest rates peaked in 1981. Declining rates from very high levels allowed for a larger debt burden. The relationship of total credit market debt reached and then surpassed 250% at

2000's secular peak, marking a major inflection point not only for the U.S. economy but for much of the industrial world. Industrialization and free trade (free only if financing the U.S. Navy comes at no cost) allowed U.S. real GDP per capita to grow by 2.5% annually on average for the six decades following the Great Depression. If debt reaches a point where the next dollar of it has a deleterious impact on economic growth when adjusted for inflation and population growth, then our GDP had its Aubrey McClendon moment in 2000. While credit market debt (the total of government, corporate and household) rose from 250% to 350% by the outset of 2008's Financial Crisis, the additional leverage only pushed national income downward to a slower growth rate in real GDP per capita. This is the Law of Diminishing Returns at work. If you think it's bad news, the U.S. enjoys more population growth than most of the industrial world. Many nations face declining populations. China is Aubrey cubed, as its population is now toppling over the edge of the cliff. Not even the best cliff diver in Acapulco can survive the plunge underway.

Real GDP Per Capita by the Decade – Hitting the Wall at the Millennium?

	Nominal GDP	U.S. Population (millions)	10-Year Nominal GDP Growth	Population 10-Year Growth	Average Inflation Rate	Real GDP Per Capita Growth	Average Total Credit Market Debt to GDP**
1940s ^	\$280.8 B	157.3	7.7%	1.4%	2.1%	4.2%	160%
1950s	\$542.6 B	179.3	6.8%	1.3%	3.8%	1.7%	145%
1960s	\$1.05 T	203.3	6.8%	1.3%	2.1%	3.4%	158%
1970s	\$2.8	226.5	10.2%	1.1%	6.9%	2.2%	169%
1980s	\$5.9	248.7	7.7%	1.0%	4.5%	2.2%	216%
1990s	\$10.0	281.4	5.5%	1.2%	2.0%	2.3%	265%
2000s	\$14.7	308.3	3.9%	0.9%	2.2%	0.8%	344%
2010s	\$21.7	328.2	4.0%	0.6%	1.9%	1.3%	362%
2023 4-yr	\$28.2*	336.9*	6.7%	0.7%	4.6%	1.4%	361%

*estimated

Source: St. Louis Federal Reserve; BEA; U.S. Census Bureau; Semper Augustus

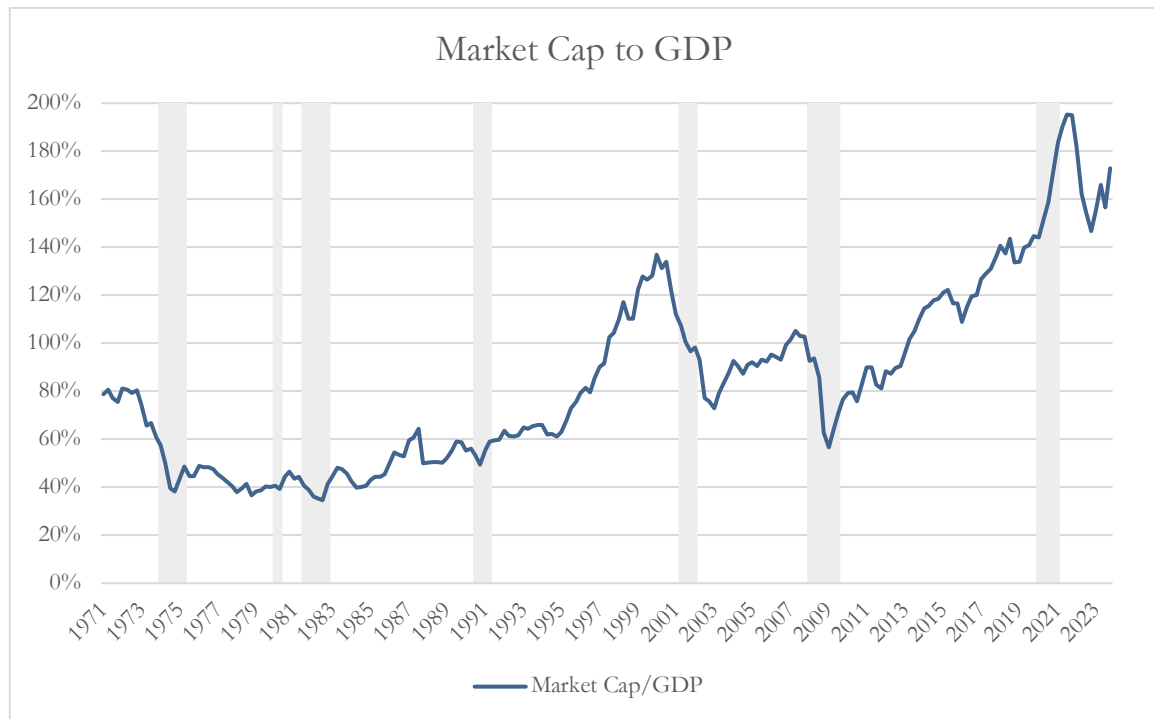
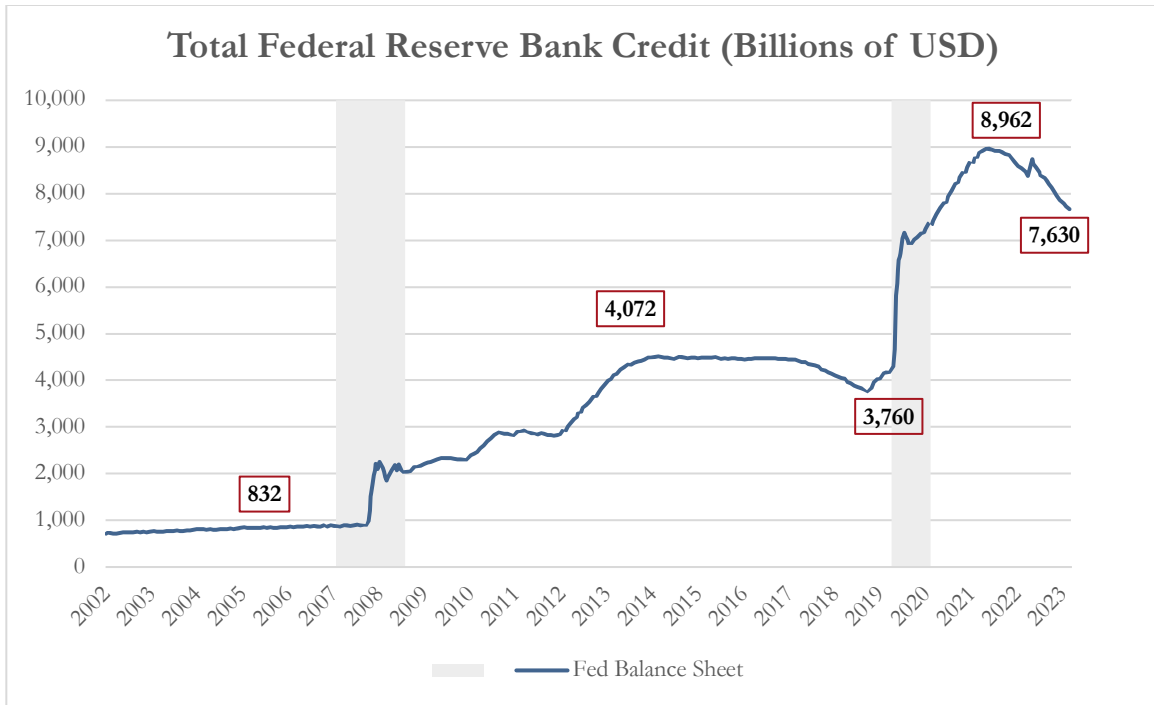
**At decade end, so 1949, 1959, 1969, 1979, 1989, 1999, 2009, 2019 and 4-year average to 2022

^4Q 1939 GDP \$92.2 billion; 12/31/1939 population 132.1 million

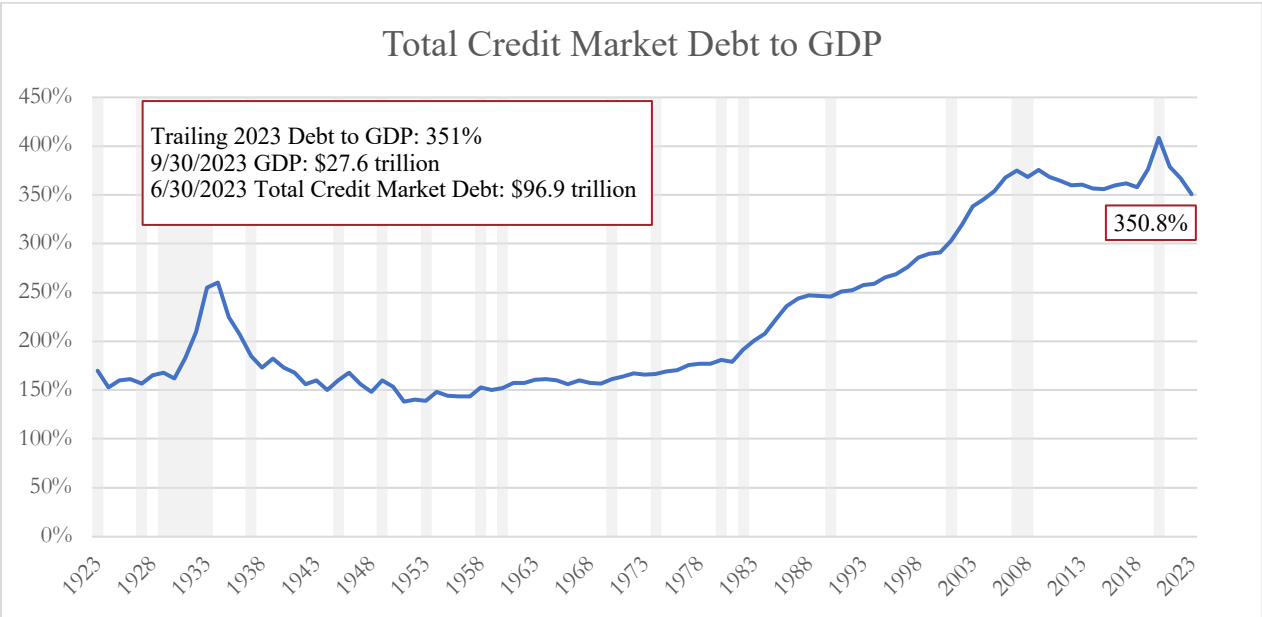
From the Industrial Revolution beginning around 1870, the U.S. enjoyed vibrant economic real growth per capita. Warren Buffett often talks about the tailwind investors enjoyed during his 93 years beginning in 1930, the front end of the Great Depression. Population growth north of 1% through the end of the 1990s contributed to significant growth in output. Since then, population growth slowed to 0.6% in the 2010s and to 0.7% for the most recent four years. Illegal immigrants in the U.S. are included in the U.S. Census Bureau population count. Likewise, nominal GDP growth was met by modest inflation with the exception of two decades – the 1970s and 1980s. Still, real GDP per capita clipped along north of 2% through the 1990s. What's happened of late? Real per capita GDP growth collapsed to around 1% as debt to GDP surged beyond 250%, leading to bubbles in both financial and real assets (think real estate).

Headwinds galore suggest we are far from the next secular trough.

Sharp-eyed readers of the red and green-shaded Secular Peaks and Troughs table may note the S&P 500's price for what we call 2021's secular peak was changed to 4,793 from what had been 4,766 as appeared in the past two letters. While a mere 0.57% higher as revised, the table now reflects the price on December 29, 2021 (the peak) and not December 31's modestly lower price. Close enough for government work, but if late 2021 proves to be a peak, prices for each prior high and low reflect the daily closing high during each year. Trying to get it precisely right here, not roughly right.



Source: 1923-1944: Annual interpolated GDP (including estimates prior to 1929) used prior to 1946. Domestic nonfinancial Debt used prior to 1946. As of December 1946, Domestic Nonfinancial Debt represented 99.4% of Total Credit Market Data
 1945 to 2022: St. Louis Federal Reserve; FRED



S&P 500 Expected Returns – speculating may be hazardous to your wealth

“I think I’m pretty good at long run expectations, but I don’t think I’m good at short-term wobbles. I don’t have the faintest idea what’s going to happen short term.” — Charlie Munger

“I didn’t get rich by buying stocks at a high price-earnings multiple in the midst of crazy speculative booms, and I’m not going to change.” — Charlie Munger



Cryptocurrency has numerous advantages over common stocks. In addition to crypto being really useful if you are a drug dealer, kidnapper or terrorist, if you want to buy some or sell some on a Saturday morning you can do so. From 1871 to 1952 stock market investors could do the same – from 10am until noon. When the weekend fun ended, Saturdays became a great time to make announcements that may otherwise move prices during a trading session. For example, Berkshire Hathaway always releases quarterly and annual financial statements on Saturday mornings to allow all investors time to review the information outside of market hours. Likewise, on a January Saturday morning 60 years ago, Luther Terry made a breathtaking announcement to a smoke-filled room of reporters that surely would hammer certain stocks: Cigarette smoking is bad for you and causes cancer and heart disease. No way. Luther was a lifelong smoker and happened to be the U.S. Surgeon General. I don’t have the record of what happened to tobacco stocks on Monday, January 13, but it couldn’t have been good. The following year 1965 saw cigarette packages forced to carry a health warning and in 1969 all cigarette advertising on radio and TV was banned.

The original cigarette package read, “Caution: Cigarette Smoking May Be Hazardous to Your Health.” Seems pretty innocuous in that Terry’s report concluded smokers have a 70% higher mortality rate, average smokers had a nine-to ten-fold risk of contracting lung cancer and heavy smokers had a twenty-fold risk. By 1984 risk warnings had appeared on four sides of each pack and warn of pesky things like lung cancer, heart disease, emphysema, pregnancy complications, fetal injury, premature birth, low birth weight and containing carbon monoxide.

The smoking rate only modestly budged. As the societal health costs ballooned over the years, the risk warning was eventually elevated in 1984 to include four distinct health warnings:

- *SURGEON GENERAL’S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy.*
- *SURGEON GENERAL’S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.*
- *SURGEON GENERAL’S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.*
- *SURGEON GENERAL’S WARNING: Cigarette Smoke Contains Carbon Monoxide.*

A shame my mother dismissed the message, but who knew in 1955 that it would be a problem. Twelve, by the way is a terrific age to take up the habit. But in 1955 everybody was doing it.

The moral of this story has nothing to do with smoking or cryptocurrencies, both potentially lethal, but that occasionally big brother gets one right. They did get ahead of smoking. The U.S. had 50 million smokers in 1965. Today there are roughly half that. Considering the population grew from 195 million to 336 million, you don’t even need Charlie’s numerical fluency to know the proportion of smokers dropped from 26% to 7.5%, a function of lifelong smokers dying early and fewer starting.

If only certain other appointed officials and “independent” government agencies could borrow a page about warnings and encourage the public to not harm itself. Perhaps one hatched in 1913? Maybe Robin Hood should affix this to customer brokerage statements:

FEDERAL RESERVE WARNING: Speculating at Secular Peaks May Be Hazardous to Your Wealth.

Few realize an arrow in the Federal Reserve’s monetary policy quiver is “moral suasion.” Beyond setting the money rate and printing as necessary, the Fed is charged with helping foster stability in the financial system. It wasn’t many years ago, 1996 to be exact, that Alan Greenspan warned of “irrational exuberance” in the stock market. While correct, he was later faulted for doing much more than uttering the words. When the tech bubble popped in earnest, the modern Fed became more interventionist. Make that interventionist when things are bad. They suggest it’s impossible to spot bubbles when you are in one, ala Ben Bernanke who suggested only in arrears did one know a housing bubble developed on his watch. Well, if the Fed won’t shoot its moral suasion arrow, we’ll take the shot...

Two years ago this letter admonished professional and individual investors alike to examine what drove stock prices to dangerously expensive levels over the prior decade. It challenged them to make assumptions about a small handful of variables impacting stock prices, whether an index or an individual stock. Specifically, the S&P 500 appeared poised to underwhelm for perhaps the next decade or more. Two years on, following an 18.1% decline in 2022 and a recovery in 2023 essentially back to where it began, earning nothing in price and only 1.7% annualized thanks to dividends, the investor is again encouraged to challenge expectations for not even high, but average long-term returns against math and logic. If 2021 was indeed a secular peak, then essentially drifting sideways for the last two years may be a small price to pay for the second chance to assess expected returns for the index owner. The Federal Reserve issued a hall pass to owners of the S&P and the behemoths sitting atop what is again a very expensive index. Thank you, Jay Powell, for telegraphing easy policy to come. Call it a get-out-of-jail-free card.

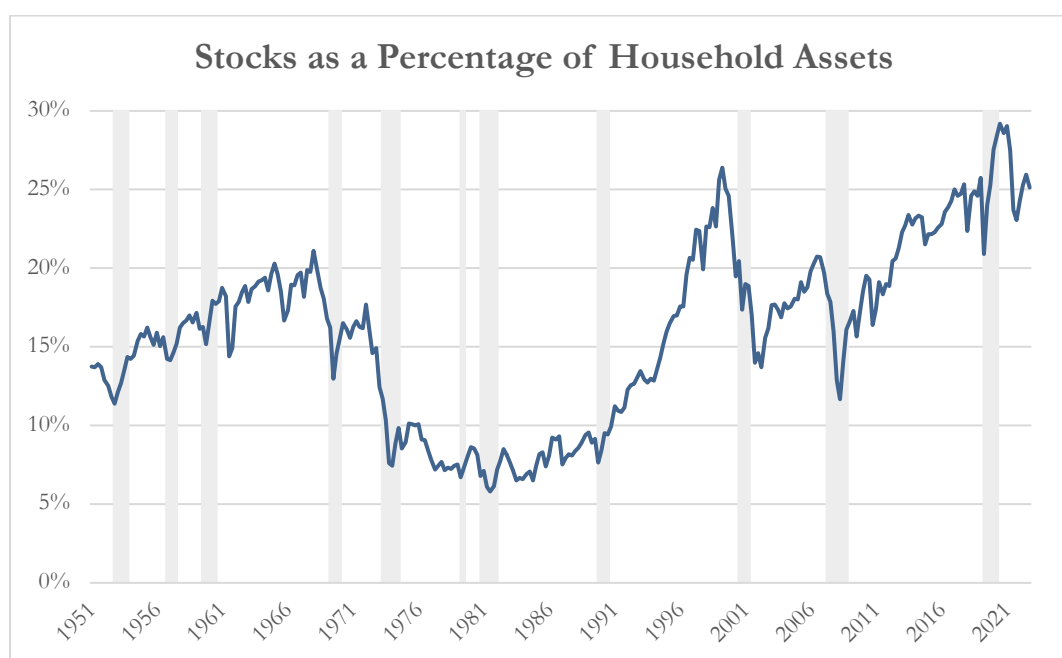
Five factors combine to determine investment total returns in common stocks. Five:

- Dollar sales growth
- Changes in profit margins
- Changes in the multiple paid to earnings
- Changes in shares outstanding
- Dividend yields

Get on the right side of the evolution of these factors and you can do very well. Find yourself on the wrong side and it gets ugly. The future direction of the five factors is critically important at secular peaks and troughs. The problem for most investors is they use past investment returns and extrapolate them as expected. Allocations to, and ownership of, stocks are highest at secular peaks and lowest at troughs. The extremes are wild. Spend too little or no time at all thinking through the factors and, well, good luck.

Our Secular Peaks and Troughs table includes numerous data points at past lows, past highs and at present. The table doesn’t include household allocations because we don’t have good data on the secular peaks in 1929 and 1937 or the troughs in 1932 and 1942. The St. Louis Fed tracks the allocation data in its Fed’s Z.1 release from the early 1950s (with a couple data points thrown in for Q4 1945 and Q1 1946). The chart if extended backward would reflect investor behavior and asset process similarly. Take note in the table of the data for market cap of all stocks and GDP in 1929 and in 1932. Households were the primary owners of stocks when the U.S. market cap peaked at \$93.3 billion. GDP in 1929 was \$103.7 billion, making the market cap-to-GDP relationship 90%, a record at that time. Over the next three years

market capitalization fell 84% to \$15.3 billion but at the same time nominal GDP imploded, falling 43%. To the point, investors are loaded up on stocks at peaks and washed out at troughs. Some of the movement is simply changing prices while many cement losses at lows and chase peaks, making the range in allocation more extreme than price movement alone. Further, the numerator is also included in the denominator, meaning prices are much more volatile than the relationship of stocks as a percentage of household assets suggests. Meaning when stock fall out of bed so do total household assets. The value of stocks doesn't all go to cash or other assets. Mr. Market simply declares a lower price. Macroeconomists would call it a supply and demand thing.



Source: Federal Reserve of St. Louis; Households and Nonprofit Organizations

Investors were loaded up at the late 1960s secular peak with ownership of stocks touching 30% of financial assets, at the end of the tech bubble and a new high of 38.4% in early 2000 and crushed that record hitting 41.6% in 2021's final quarter. At opposite extremes, following 16 ½ years of inflation that crushed margins and stock prices, households allocated only 9.5% to stocks when they hit rock bottom in mid-1982. A similar chart including all household assets, largely real estate, depicts allocations to stocks at an incredibly low 5.8% in 1982 and 29.2% at the close of 2021. The narrower range when including all assets relative to stocks can partially be attributed to more stable housing prices while the stocks portion of the numerator and denominator move in tandem in both the financial assets and household assets series.

When the 2023 final quarter's data is released, household allocations to stocks will likely be just shy of 2021's record thanks to the S&P 500's 11.7% fourth-quarter rally. Maybe allocations will march ever upward, but you must know where you've been to know where you're going. In investing, math and reason help.

The balance of this section updates work from our last two annual letters. Feedback to the section was quite positive, with many thankful for the detail on what drives stock prices. The S&P 500 was as secularly stretched in 2021 as it was in 1929 and 2000. Both of these secular peaks led to at least a decade of losses. Our 2021 letter suggested the market was perched at a secular peak and using our five investment factors made the case that the subsequent decade would prove painful for investors in the S&P 500. The work perhaps proved timely when the S&P 500 lost 18.1% in 2022. Investors were rewarded

with a stock market version of Bob Marley's *Redemption Song* last year and nearly recovered the damage. Now again at new highs early this year (not as fundamentally expensive thanks to time and a larger GDP and dollar profits), today's index investor must concoct a nearly impossible favorable mix of our five investing factors to presume a decent investment return over the coming decade or more.

The section is updated as food for thought for investors of all stripes, whether individual investors or allocators of hundreds of billions of dollars. We'll look at which of the five investing factors contributed to gains in 2023 for the S&P 500, for the group we call the Fab Five: Apple, Microsoft, Google, Amazon and Facebook, or Meta for the moment. Adding Tesla and white-hot Nvidia to the mix, we'll look at the Magnificent Seven as well for the decade to 2021 and the last two years. The impact of these five and now seven stocks on the index has been stunning. The five factors do not align very well for the index and likely some of the large tech bellwethers.

Interplay of the Five Factors – what drives returns, algebra-style

The total return from common stocks, whether the entire market, an index or an individual stock, derives from our five factors but begins by breaking return down into three base components – growth in earnings per share, change in the P/E multiple, and earnings from dividends. Total return is easily calculated by multiplying the change in EPS by multiple growth and adding the dividend yield:

$$\text{Total Return} = (\text{EPS Growth} \times \text{Change in P/E Multiple}) + \text{Dividend Yield}$$

Growth in earnings per share can be further derived from change in the net margin and change in sales per share:

$$\text{EPS Growth} = \text{Sales Per Share Growth} * \text{Margin Growth}$$

Too little thought goes into the next factor. It is imperative to understand how a change in shares outstanding impacts return. Specifically, how much sales growth in dollar terms is diluted from an accreted share count or increased thanks to a reduction in shares outstanding? In the analysis below, growth over a time period is not simply a compound figure but a measure of the rate of dilution or accretion. We've received *lots* of questions asking for clarity on how the dilution factor is calculated. The other factors besides dividend yield are simply the rate of growth from the beginning of a time period to the terminal point. With the share count, any increase in shares outstanding is dilutive and harms return. A reduction in the share count is accretive to return (we are leaving out whether the price paid for shares or received by the company are deviant from intrinsic value). For those reconciling or following the math, note for "Growth %" when measuring change in the share count, for that one figure you are really measuring annual dilution or ownership increase (a reduction in share count proportionally increases the remaining shareholders' ownership interests):

$$\text{Sales Per Share Growth} = \text{Dollar Sales Growth} / \text{Share Count Growth}$$

As a quick illustration for calculating the return from changes in share count, if a company has 100 shares outstanding and grows the count to 125, the change is obviously 25%. However, the original owners of the 100 shares no longer own 100% of the company but 80% making their dilution 20%. The 20% is a reduction of return. Conversely, if the share count drops from 100 to 75, that's a 25% shrink but an increase in ownership of 33% for continuing shareholders. The 33% is added to return over time as a compound annual return increase over whatever time period is involved in increasing ownership by 33%. Over ten years 2.919% would be the "growth rate" accounting for the 33% ownership increase due to the reduction in share count.

Calculation of annual price return (PR below or Price Return) broken down by the full set of variables is a multiplicative function of each component. Formulaically, the amount of “1” is added to the percent growth rate for each component, with the amount of “1” then subtracted after the multiplicative function to arrive at a percent return.

$$((1 + EPS) * (1 + PE)) - 1 = PR$$

$$((1 + SS) * (1 + MG) * (1 + PE)) - 1 = PR$$

$$\left(\frac{1 + DS}{1 + SC} * (1 + MG) * (1 + PE) \right) - 1 = PR$$

And, for Total Return (TR), we add the Dividend Yield (DY) to Price Return (PR):

$$\left(\frac{1 + DS}{1 + SC} * (1 + MG) * (1 + PE) \right) - 1 + DY = TR$$

For the above formulas, the variables are:

SS = Sales per Share Growth

PE = PE Multiple Growth

DY = % Dividend Yield

DS = Dollar Sales Growth

SC = Share Count Growth

PR = % Price Return

MG = Margin Growth

EPS = Earnings Per Share Growth

TR = % Total Return

The last two annual letters present cumulative and annual growth for each factor. The growth rates *approximate* to proportion or return attributed to each factor but are not precisely mathematically correct. A proper attribution of return from the factors would allow for an *additive* function of each variable to reconcile to the multiplicative derivation applied to each growth factor. Attribution numbers presented in the 2021 letter were largely correct.

The answer in getting the math to work lies in absolute values from an equal starting base for each factor. A logarithmic distribution will solve the issue, but I lacked time and spreadsheeting resources to figure out how to run the math. In the meantime, the growth factor for each variable (the bottom row in each table) correlates closely to total return.

Five Factors at Work – Past, Present and Future S&P 500 Scenarios

For the ten years through 2021, the S&P 500 earned a 16.6% annual return. Repeating this over the subsequent decade would be nearly *impossible* (barring a hyperinflation). We are on record suggesting the decade following 2021 would earn far less than its very long-run 10.5%, interspersed with drawdowns like 2022’s, and that decade has met our forecast so far. Here’s the return distribution through 2021 with final reported figures for sales and earnings at the end of that year.

10 Years	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	96.44	29.12	1,052.83	9,531.2	9,052.93	9.2%	13.0	2.3%	1,257.60	
12/31/2021	208.21	63.12	1,566.80	13,266.5	8,467.26	13.3%	22.9	1.3%	4,766.18	
Growth %	115.9%	116.8%	48.8%	39.2%	6.9%	45.1%	75.5%	-42.8%	279.0%	362.6%
Annual Avg	8.0%	8.0%	4.1%	3.4%	0.7%	3.8%	5.8%	2.3%	14.3%	16.6%

The two largest return drivers over the decade were expansion in the P/E multiple from 13.0x to 22.9x and in the profit margin from 9.2% to 13.3%. These two factors contributed the majority of the return earned by the index. Dollar sales compounded by 3.4%, dividends added 2.3% and a net reduction in the share count added 0.7% to return. Remember, the derivation of return is a multiplicative function of the table's first four factors with the dividend yield additive. Simply totaling the percent change in each component will get close to the total return but will not be correct.

The investor at year-end 2021 expecting anything near the prior decade's returns required continued expansion in multiples and margins or outsized growth in sales despite sales growth for the past two decades averaging less than 4% annually in dollars.

Through 2023, the index investor actually enjoyed the highest rate of three-year growth in sales per share on which I can find data. Per share sales did decline 3.7% in 2020's pandemic slowdown but the snapback over these past three years has been dramatic, climbing 15.0% in 2021, 11.9% in 2022 and my expectation of 6.8% in 2023 once the final numbers are in. While dollar sales and sales per share only grew 3.4% and 4.1% respectively for the decade ended 2021, dollar sales over 2022-2023 grew at 18.4% cumulatively over the two years thanks to inflation. Adjusting for a 0.9% cumulative reduction in the share count, sales per share rose a whopping 19.4% over the two years, or 9.3% per year.

It would be hard to fault anybody for seeing rapidly growing sales and expecting higher stock prices. Had profit margins and multiples simply held at 2021's closing level, the investor would have earned the 9.3% growth in sales per share plus a 1.3% dividend yield for a 10.6% total return.

Compressing margins and multiples over two years resulted in a 3.4% two-year cumulative total return or 1.7% per year. 2021's 13.3% record profit margin deflated to 11.2% in 2022 and a not-much-higher 11.4% last year. That's a 14% haircut in the profit margin factor. Likewise, instead of rising from an already lofty 22.9 P/E multiple, the multiple contracted to 19.5x in 2022 and recovered to 22.3x, still 2.6% lower. Dividends contributed only 1.3% from a low initial yield but saw a very high 9.7% growth per share over two years. Rising interest rates either directly or indirectly pushed on the multiple while inflation did what inflation does, inflicting higher costs on many companies lacking the ability to fully pass those costs along. 18.4% two-year cumulative dollar sales growth not translating to higher stock prices is a head-scratcher for numerous investors. Oh, for the lessons of the 1970s.

2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	208.21	63.12	1,566.80	13,266.5	8,467.26	13.3%	22.9	1.3%	4,766.18	
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.13	11.4%	22.3	1.5%	4,769.83	
Growth %	2.7%	9.8%	19.4%	18.4%	0.9%	-14.0%	-2.6%	9.7%	0.1%	3.4%
Annual Avg	1.3%	4.8%	9.3%	8.8%	0.4%	-7.3%	-1.3%	1.7%	0.0%	1.7%

*Estimate

Multiplying across positive benefit from dollar sales growth and a reduction in share count, and then a contracting margin and multiple, yields an almost flat change in the index price, which rose three points. Virtually all of the two-year total return came from dividends. Sharp-eyed readers may wonder how a 1.3% beginning yield and 1.45% terminal yield can produce an average 1.66% dividend yield. We can't forget 2022 and its 19.4% price decline, which resulted in a 1.8% dividend yield at year-end 2022. The index price at both 2021 and now 2023 are near all-time highs, which generally means very low dividend yields at the point in time. Almost all time spent over two years was in the red, meaning a higher dividend yield (a stable or rising dividend divided by a reduced price).

Investors were most likely surprised by a barely-noticeable gain in per share profits despite rapid top-line growth. Earnings and earnings per share are a headline for investors while few think about the overall profit margin. We discussed earlier in the letter reasons why margins are unlikely to return to the 13.3% record 2021 profit margin. First, the U.S. shifted to a service and less-capital-intensive economy over decades. This aspect may foster stronger profit margins among these businesses. However, despite record corporate debt relative to assets and equity, near-zero interest rates contributed 3% of that 13.3% during the profit margin expansion during the 22 years of this century through 2021. Also, 2017's Tax Code and Jobs Act (TCJA) contributed 1% to the profit margin, largely via the reduction in the marginal corporate tax rate from 35% to 21% on U.S.-derived profit (earning 79% versus 65% of pre-tax income is a 21.5% increase in profit (79/65) on the roughly half of income earned domestically).

For those thinking that the market will catch back up to trend and recover from earning only 1.7% on average over the last two years, let's not forget the experience of the decade following the 1982 to 2000 bull market, culminating in the tech bubble and its subsequent popping. If we are correct about 2021 being a secular peak, the experience of the last two years will ultimately be the start of a 10-year period resembling something like the decade post-1999.

The decade ending 1999 resembles the one that ended 2021. Monster 6.9% annual expansion in the P/E multiple doubled the multiple from 14.5x to 28.4x. The margin grew 49% or 4.1% per year while dollar sales clipped ahead by 6.0% annually. Dividends kicked in 2.9% on average. The only negative factor was 25% growth in shares outstanding, diluting non-insider owners by 20%, a harmful 2.2% net annual dilution. In total, the index investor earned 18.2% annually through 1999. Household and professional investors alike expected high-teens annual returns over the coming decade. Instead of continuing the party like it was 1999, the inevitable hangover ensued, and boy was it a doozy. Far from expectations, the owner of the S&P 500 instead forfeited 9.1% cumulative and 0.9% per year. The two decades in sequence. The good became the bad and the ugly:

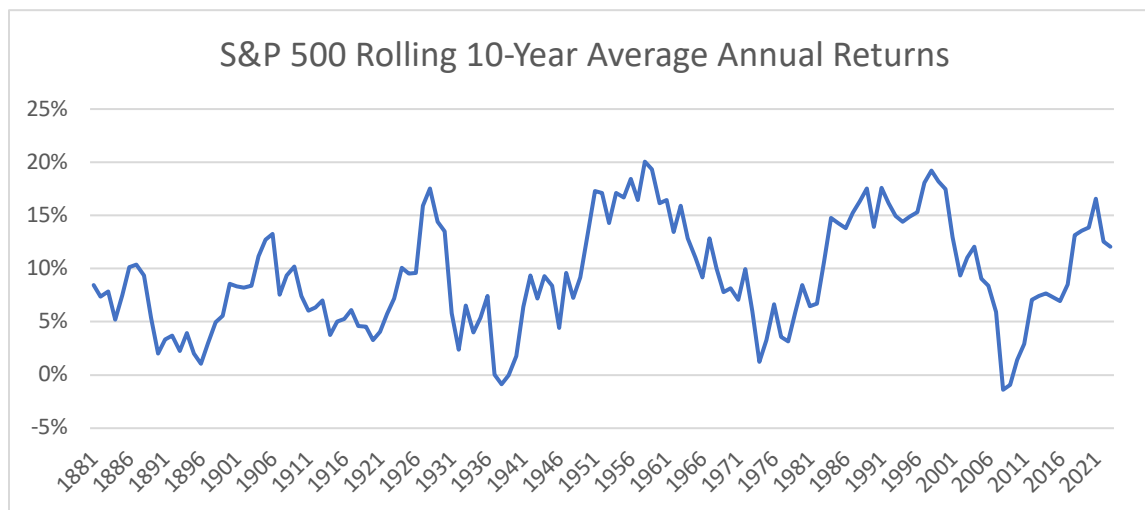
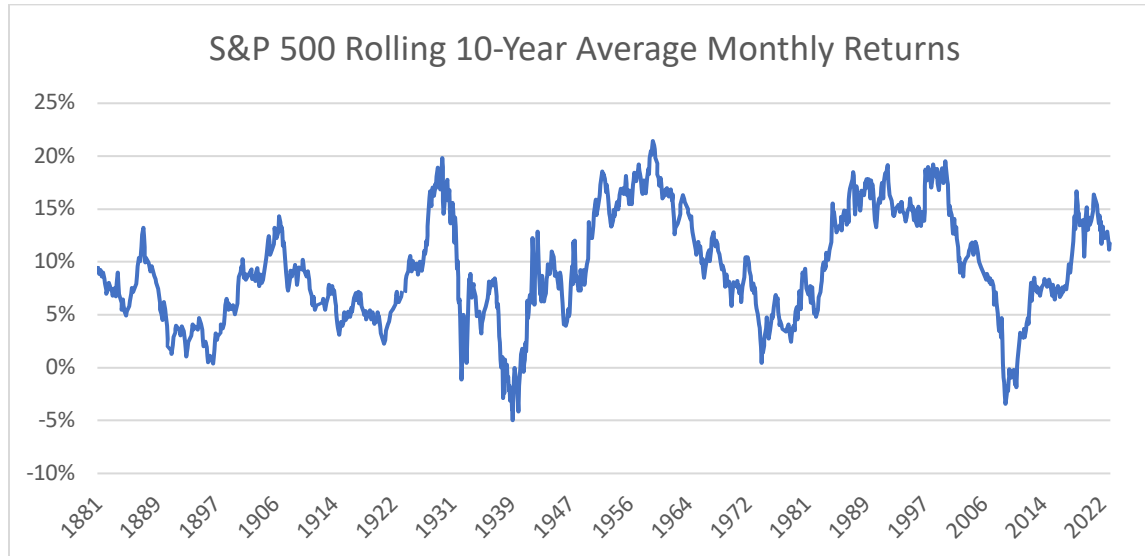
10 Years	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/1989	24.32	11.45	452.90	3,033.4	6,697.81	5.4%	14.5	3.2%	353.40	
12/31/1999	51.68	16.20	646.95	5,422.6	8,381.82	8.0%	28.4	1.1%	1,469.25	
Growth %	112.5%	41.5%	42.8%	78.8%	-20.1%	48.8%	95.6%	-66.0%	315.7%	432.9%
Annual Avg	7.8%	3.5%	3.6%	6.0%	-2.2%	4.1%	6.9%	2.9%	15.3%	18.2%

*Estimate

10 Years	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/1999	51.68	16.20	646.95	5,422.6	8,381.82	8.0%	28.4	1.1%	1,469.25	
12/31/2009	56.86	22.64	908.40	8,087.3	8,902.83	6.3%	19.6	2.0%	1,115.10	
Growth %	10.0%	39.8%	40.4%	49.1%	-5.9%	-21.6%	-31.0%	84.1%	-24.1%	-9.1%
Annual Avg	1.0%	3.4%	3.5%	4.1%	-0.6%	-2.4%	-3.6%	1.8%	-2.7%	-0.9%

Stocks ended the subsequent decade ending 2009 trading at 19.6x earnings on a 6.3% profit margin. Sales dollars grew a respectable 4.1% on average per year while dividends kicked in 1.8%. Little about these metrics sounds poor. In fact, several were historically on the high side. The cause of bloodletting in the index was the ledge from which the market entered 2000. Price matters for sure. However, the investor failing to contemplate all five investing factors collectively becomes Charlie's one-legged man in the ass-kicking contest.

Market efficiency over very long periods rests on market prices eventually reflecting underlying business economics. They do, although the periods may be so long in duration that valuation tools may seem broken. Invariably prices get so far ahead of, or so far behind, reality that something must give. This is how one arrives at secular peaks and troughs. Measuring returns over rolling ten-year periods is a useful exercise revealing mean reverting characteristics. I'm not so sure it's necessarily mean reversion but the pulling of valuation excesses, high and low, back to matching fundamentals. Ten-year periods of returns well in excess of business fundamentals are followed by much weaker ten-year intervals and vice versa. If we call Ibbotson's 10.5% long-term return reasonable, the pull from extremes is obvious:



On the high side, returns have only averaged north of 15% but a handful of times. The late 1920s and late 1990s are examples. Washouts are equally telling. There are precisely five yearly intervals when trailing ten-year returns were zero or negative. When? 1937 (0.0%), 1938 (-0.9%) and 1939 (-0.1%), which followed 1929's stock market bubble and the Great Depression when stocks declined 89% peak to trough and only again in 2008 (-1.4%) and 2009 (-1.0%), the Great Recession which followed the tech bubble

ten years prior. The S&P 500 troughed 57% below its 2000 peak eight years later. That's despite eight years of economic growth in the interim.

A bit more for data geeks: The highest ten-year annual return was recorded in 1958 at 20.1%. The year was no secular peak but followed a meandering quarter century where stocks remained far below their late 1920's bubble peak while fundamentals grew in advance of stock prices.

And finally for my favorite data geeks, while our Secular Peaks and Troughs begins with 1929's peak, there is no doubt that 1906 marked a similar secular top. Stocks had returned 13.0% for the prior ten years (and following the Panic of 1893). The secular peak in 1906 was followed by 1907's Panic and Depression, which led to the subsequent decade of stocks averaging 4.5% per year. By 1921 the index rolling ten-year was 2.3%, setting up the Roaring 1920s and subsequent 1929 secular peak.

It doesn't take a Chartered Market Technician, of which I count several good friends, to conclude that extremes of rolling ten-year return intervals both above and below the long-run 10.5% average will ultimately and invariably be followed by opposite extremes. Perched today a whisker from 2021 and with a still-high trailing ten-year return, know that the next secular trough is coming. Investors in the index choose hiding behind the chain saws, not in the running car. Take fifteen minutes and save yourself 15% or more, or more likely 50% and a lost decade or more.



The S&P 500's 1.7% annual return from 2021 puts us 20% of the way through the subsequent decade from 2021's secular peak. The likelihood of the rolling 10-year average grinding ever downward is high. The 1.7% two-year annual return to 2023 combines the 18.1% loss in 2021 and last year's 26.3% gain. Now gone from the rolling ten-year return are 16.0% and 32.4% gains in 2012 and 2013, respectively. The ten-year return through 2023 is no longer the 16.6% two years ago but now 12.0%. The ten-year return a year from now will fall below 12.0% if the 2024 index returns less than 2014's 13.7% gain, which will then drop from the calculation. Other than returning 1.4% in 2015 and losing 4.4% in 2018, the remaining yearly returns falling from subsequent rolling 10s are generally monsters. All yearly periods other than these two for 2015 and 2018 are north of the long-run average 10.5% return. Popcorn, anyone?

Steady as She Goes – same ol', same ol' for tomorrow & tomorrow & tomorrow

Let's walk through a number of scenarios that may unfold over the next decade, a reasonable case bracketed by a very bullish, a bearish and an extremely bearish scenario over an even longer duration.

Start with a decade from 2023 holding the current 22.3x multiple to earnings where it sits now, a historically nosebleed level unless measured against diminished margins. To that point, let's hold the 11.4% profit margin where it sits today, historically high but 190 basis points below 2021's record. Presume dollar sales grow 3.4%, matching the decade ended 2021 and the same 0.7% "benefit" from a declining share count. The last two years saw only 0.4% of shares bought back annually and the share count has grown over the most recent two quarters. By holding margins and multiples constant, the index investor gets 4.1% sales growth per share and 1.5% from dividends. That's 5.6% per year. Roll over, Ibbotson.

Levels	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.13	11.4%	22.3	1.5%	4,769.83	
12/31/2033	319.55	103.57	2,796.18	21,943.1	7,847.55	11.4%	22.3	1.5%	7,125.92	
Growth %	49.4%	49.4%	49.4%	39.7%	7.0%	0.0%	0.0%	3.2%	49.4%	72.0%
Annual Avg	4.1%	4.1%	4.1%	3.4%	0.7%	0.0%	0.0%	1.5%	4.1%	5.6%

A more bullish scenario, holding the margin and multiple constant, would rest on more rapid growth in per-share sales, requiring faster dollar sales growth or more benefit from a larger reduction in the share count or some of both. The years 2021 through 2023 *did* see more rapid sales per share growth, a whopping 15.0% in 2021, 11.9% in 2022 and an estimated 6.8% in 2023. Sales growth was elevated not only thanks to recovering from snapping back from a decline in revenues in 2020 but also thanks to high inflation, where many companies passed through higher cost of goods sold and higher labor expense. Offsetting the “benefit” from high sales growth was the dirty secret about inflation, which is the crushing of profit margins. With sales growth fading fast over the past two quarters as inflation rates come down, the analyst can feel free to plug in any sales growth figure higher than ours in this scenario. The caution to revenue bulls is high sales growth is likely to come with weak profits.

Raging Bull – fitter than DeNiro circa 1980

Earning 5.6% per year for a decade does sound pretty bad. How about a less stingy case where we assume the profit margin fully recovers to 2021’s record and the P/E likewise expands back up to 22.9x from today’s 22.3x (and 19.5x a year ago at year-end 2022). As with the prior scenario, running sales growth and repurchases at matching rates for the decade ended 2021 and the bull case sends the 10-year return to 7.4% per year. Using these same variables last year produced a 9.3% expected return, again starting from the “more reasonable” 19.5x P/E at year-end 2022. Earning 26.3% in 2023 naturally overbanks nearly 2% of a decade-long expectation.

10 Years at 2021 Margin/Multiple	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.13	11.4%	22.3	1.5%	4,769.83	
12/31/2033	371.89	120.54	2,796.18	21,943.1	7,847.55	13.3%	22.9	1.4%	8,516.33	
Growth %	73.9%	73.9%	49.4%	39.7%	7.0%	16.4%	2.7%	-2.6%	78.5%	104.2%
Annual Avg	5.7%	5.7%	4.1%	3.4%	0.7%	1.5%	0.3%	1.4%	6.0%	7.4%

*Estimate

I’d bet heavily against the margin recovering to a peak 13.3% and I don’t find multiples at all logical unless applied against depressed earnings, which a 13.3% margin most definitely is not. If a full recovery in margins and the multiple gets you 7.4% for the coming decade, to get to 10% will require some combination of a new record profit margin, a multiple north of 22.9x on a 13.3% margin, and/or more sales growth per share than seen over the past two decades. As we’ll soon see in the upcoming analysis of the Magnificent Seven, this group of businesses is generally wickedly profitable, both in margins and returns on capital, of which some little is required. If the big tech companies continue growing at premium rates and can maintain and even grow their multiples, then one can get to a margin above 13.3%. Ultimately, the law of large numbers, competition and regulation enter the arena, so I’m skeptical and for now rest on calling 13.3% peak profit. I will be stunned if annual index returns exceed 7.4% over the coming decade from 2023, again barring hyperinflation, which is not an impossible outcome.

Saved by Zero – avoiding losing ≠ winning

Now we'll conjure up a little rain on parade day and examine a somewhat bearish scenario (using "bearish" here because it contemplates a contracting margin and multiple). Call this series of factors a walk down memory lane. Suppose the margin declines from 11.4% to 8.0%, a level considered very high by historical standards, and the P/E multiple collapses all the way back to 15x, its average over the last century or so. The most compelling argument for a lower margin would be inflation higher than the Fed's 2% target. Grow dollar sales at 6%, matching the decade ended 1999, and with the exception of the last three inflationary years coming out of the pandemic, roughly 2.5% per year *higher* than the experience since the turn of the century. Should inflation average 4% over the coming decade, 6% growth in dollar sales per year seems reasonable. Margins are most assured to decline in a higher inflationary period – it's tough to pass along higher costs and the corporate world has an awful lot of debt coming due that requires retiring or refinancing at what will be higher interest rates. Lower margins leave less for share repurchases (see the last two quarters of a rising share count), so hold share count flat. Contracting margins back to their prior 1999 peak at 8.0% and a return to the very long-run P/E combines to produce literally nothing. The investor sees the S&P 500 fall 15.7% over ten years from 4,770 to 4,021, offset with 1.8% per year from dividends to generate a 1.1% cumulative return, which gets you 0.1% per year. Ok, fair. It's not nothing. As Mr. Buffett was quoted in a late-1999 *Fortune* article, referring to the miniscule 17-year Dow Jones Industrial Average return through year-end 1981, "Now I'm known as a long-term investor and a patient guy, but that is not my idea of a big move."

8% Margin and 15x Multiple	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84*	69.31	1,871.19*	15,707.0*	8,394.1	11.4%	22.3	1.5%	4,769.83	
12/31/2033	268.08	86.89	3,351.02	28,128.9	8,394.1	8.0%	15.0	2.2%	4,021.22	
Growth %	25.4%	25.4%	79.1%	79.1%	0.0%	-30.0%	-32.8%	48.7%	-15.7%	1.1%
Annual Avg	2.3%	2.3%	6.0%	6.0%	0.0%	-3.5%	-3.9%	1.8%	-1.7%	0.1%

*Estimate

The Bear Dance – no fun and the predator always wins

Surely the Fixx is in (Damn it, Jim!) for investors to make next to nothing for a decade. It can get worse. Suppose index investors or those owning its components stumble into a cave of dancing bears who dislike declining profit margins. Who doesn't? As before, taking the margin back to 1999's former peak at 8% but now obliterating the P/E multiple down to 10x produces a 30% cumulative loss in the margin and a more than halving of the multiple. These two factors combine to cost investors roughly 11% per year over the coming decade, offset by whatever sales growth per share and dividends produce. In our example we'll assume the same 6% annual growth in dollar sales and a modestly *rising* share count to reflect corporate need for equity capital. The really good news in a scenario like this is losing 47% to price means a much higher dividend yield (that is if companies continue paying them in the same proportion to profits). Here you get a 2.3% average annual dividend yield with the terminal yield at 3.2%. The even better really good news is that a decade of losing 3.8% per year (total return) should tee up quite nicely for the *subsequent* decade! Prospective returns would be even better if sales growth falls short of the 6% we are suggesting. The glass is always half full around here.

8% Margin and 10x Multiple	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.1	11.4%	22.3	1.5%	4,769.83	
12/31/2033	252.51	81.85	3,156.43	28,128.9	8,911.6	8.0%	10.0	3.2%	2,525.15	
Growth %	18.1%	18.1%	68.7%	79.1%	-5.8%	-30.0%	-55.2%	123.1%	-47.1%	-32.2%
Annual Avg	1.7%	1.7%	5.4%	6.0%	-0.6%	-3.5%	-7.7%	2.3%	-6.2%	-3.8%
*Estimate										

So a summary of the foregoing scenarios looks something like the following table. Readers can probability-weight the scenarios as they see fit, but a simple average approach indicates expectations should be no higher than 2.3% per year for the next decade (with the Semper bias on the downside of that). And, with the (theoretical) “risk free” 10-year U.S. Treasury rate at about double the level, one might even query the purpose of investing in a broad index. Selection matters. And don’t forget, these are compounded returns below, making the potential mediocrity or wealth destruction that much more painful.

Raging Bull 7.4%	Steady as She Goes 5.6%	Saved by Zero 0.1%	The Bear Dance (3.8%)	Simple Avg 2.3%
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Make it Stop – *Back to the Future, 1982 that is*

The few intrepid investors who bought stocks at 1982’s secular low had 16 ½ years of bad road in the rearview mirror from 1966’s secular peak. During these inflationary years, investors that didn’t sell during many nasty declines essentially earned their dividends. The S&P 500 rose 0.5% per year from 94 to 102 by price while the Dow Jones Industrials fell from 1,000 to 777 (interesting that the S&P hit a much later low at 666). Presuming that earning the S&P’s dividend yield and no price gain for the past two years through 2023 qualifies as being two years into a secular bear market, let’s have some fun with a scenario that returns the index to fundamentals matching 1982’s trough. During the 1966 to 1982 torture, margins fell 40% from 6.7% to 4.0% while the P/E multiple was punched in the mouth by 56% from 18x to 8x.

Revert back to our household ownership of stocks chart. The slow hammering of margins and multiples combined to repeatedly burn individual and institutional owners of stocks. Hot stoves being what they are, investors threw in the towel. Inflation during this stretch was high and sales followed suit, growing 8.9% per year. The dividend yield began at 2.9% and ended at 6.1%, reflective of a low multiple to earnings.

Crediting the index with the past two years, here’s a look at how things will shake out over the next 14 ½ years should the margin and multiple fall to 4% and 8x, respectively, with sales growing by the same 8.9% rate matching the 1966 to 1982 episode. The index loses 2.9% annually, a worse experience than what transpired in the 1970s, though we are starting from more expensive levels than at 1966’s secular peak.

14.5 Year Case From 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.1	11.4%	22.3	1.5%	4,769.83	
6/30/2038	257.68	83.52	6,442.02	54,075.2	8,394.1	4.0%	8.0	4.1%	2,061.45	
Growth %	20.5%	20.5%	244.3%	244.3%	0.0%	-65.0%	-64.1%	178.8%	-56.8%	-34.4%
Annual Avg	1.3%	1.3%	8.9%	8.9%	0.0%	-7.0%	-6.8%	2.8%	-5.6%	-2.9%

An 8x8 to the Head – heavy lumber hits to margin and multiple

Suggesting margins collapse back to 1982's 4% seems nearly impossible. Suppose we allow for what has certainly been an upward migration in margins thanks to interest rates having declined to zero, a lower corporate tax rate and a number of large tech companies requiring less capital that earn very high margins. Instead of an implausible crushing of margins to 4%, let's now stick with an 8x multiple but capitalize it against a more plausible 8% profit margin. Here the investor forfeits 1% by price but picks up 2.8% annually from dividends to produce a 1.8% annual total return. Eight is Not Enough. [Eight is Enough fittingly ran from 1977 to 1981.]

14.5 Years 8% Margin 8x Multiple	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.1	11.4%	22.3	1.5%	4,769.83	
6/30/2038	515.36	167.04	6,442.02	54,075.2	8,394.1	8.0%	8.0	4.1%	4,122.89	
Growth %	141.0%	141.0%	244.3%	244.3%	0.0%	-30.0%	-64.1%	178.8%	-13.6%	28.6%
Annual Avg	6.3%	6.3%	8.9%	8.9%	0.0%	-2.4%	-6.8%	2.8%	-1.0%	1.8%

Before moving to the monumental impact of a small group of stocks (by number) on the S&P 500 over the most recent ten to twelve years, we should update the long-term return series that kicked off this exercise in cautioning care at secular peaks. Recall the 18.2% earned by the S&P over the decade ended 1999 that was followed by a decade where index investors *lost* 0.9% per year. Now one year shy of a quarter century removed from the early 2000 secular peak, the long-run annual return is now all of 7.0% per year. That's 24 years compounding at 7%. Who knew? Investing \$1 million grows to just north of \$5 million at 7% over 24 years. It grows to \$11 million at Ibbotson's 10.5%.

24 Years	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/1999	51.68	16.20	646.95	5,422.6	8,381.8	8.0%	28.4	1.1%	1,469.25	
12/31/2023	213.84	69.31	1,871.19	15,707.0	8,394.1	11.4%	22.3	1.5%	4,769.83	
Growth %	313.8%	327.8%	189.2%	189.7%	-0.1%	43.1%	-21.5%	31.8%	224.6%	411.0%
Annual Avg	6.1%	6.2%	4.5%	4.5%	0.0%	1.5%	-1.0%	2.0%	5.0%	7.0%

Just as time wounds all heels, it heals all wounds. But even with the power of compounding, when you own stocks at a secular peak you are likely to *never* get back to an average long-term return. Where a decade from 1999 investors had lost 0.9%, with the secular bull that launched at the nadir of the Financial Crisis, from 1999 through 2023, the index earned 7.0% a year. If offered a 24-year return where the profit margin *grows* 43.1% from 8.0% to 11.4%, sales grow 189.7% or by 4.5% annually and with virtually no dilution from a rising number of shares outstanding, who wouldn't take that? Throw in 2% from dividends and a historically *very high* 22.3x terminal P/E multiple and the five factors should combine to produce lights-out returns. Ah, one little bit of additional information required. The price, or P/E multiple in this case, bears on return as a rate of change. Remembering the mantra around here at Semper that price matters, it was a decline in the P/E multiple from 28.4x to still high 22.3x that cost investors 21% of return over nearly a quarter century. Do the math on what it would take from 2023 to get the return from 1999's secular peak to a 10.5% Ibbotsonesque long-run average and then ask yourself what you are doing owning the S&P 500 at today's price? Surely better alternatives to the index exist. Read on as to why things Fabulous and Magnificent may not be the answer either.

THE FABULOUS AND THE MAGNIFICENT

- *Village Boy 1: If you get killed, we take the rifle and avenge you.*
- *Village Boy 2: And we see to it there's always fresh flowers on your grave.*
- *O'Reilly: That's a mighty big comfort.*
- *Village Boy 2: I told you he'll appreciate that!*
- *O'Reilly: Well, now don't you kids be too disappointed if your plans don't work out.*



A very small handful of companies dominated the global economy in recent years. The stock market contribution of this same small handful of companies' publicly traded stocks has been even more dominant. Staggeringly so. Never has so much wealth been capitalized in such a small universe of companies. Mr. Market rewards business performance. Mr. Market also gets wild with the prices he quotes from time to time.

Whether the fabulous quintet of Apple, Microsoft, Google, Amazon and Facebook or the now magnificent septet including the five and new additions Tesla and Nvidia, these companies and their stocks cannot be ignored. The Semper letter over the past two years extended our five-factor analysis of the S&P 500 to what we call the Fab Five.

The Decade to 2021's Secular Peak

At year-end 2011 there was no acronym or catchy name for dominant tech stocks. The investing world only first came to know four stocks by their FANG acronym two years later in 2013. These were the newest tech highfliers Facebook, Amazon, Netflix and Google. Microsoft was still in its doghouse and well below its 2000 peak and Apple's iPhone had only recently passed Research in Motion's BlackBerry as the best-selling smartphone. Berkshire Hathaway didn't start buying Apple until 2016 for roughly 12x earnings (less than 10x net of net cash) and Semper owned Microsoft for which it paid about 10x earnings in 2007.

Had the perspicacious investor owned the Fab Five or Magnificent Seven in 2011, the ride since then was incredibly prosperous. The owner of the S&P 500 essentially did own these stocks, or certainly does today. Apple and Microsoft had been in the S&P 500 since 1982 and 1994, respectively. Amazon went public in 1997 but didn't debut in the index until 2005. Google had gone public in 2004 and entered the index in 2006. Facebook was founded only 20 years ago in a dorm room, didn't go public until May 2012 and was quickly added to the index in 2013. Nvidia was founded in 1993, IPO'd in January 1999 and matriculated to the index in 2001, thus missing the tech bubble and bust (at least for index investors). Tesla was founded in 2003, not by its present CEO, but said CEO did finagle the car company into the index in late December 2020 with two consecutive quarters of profit, which at the time required the choreography and artistry of gymnastics.

The five stocks excluding Nvidia and Tesla comprised 8.5% of the market cap of the S&P 500 at the outset of 2012 (pulling Facebook back by five months to assume it was already public *and* already in the index). Had Nvidia and Tesla been included in the group making up the Magnificent Seven, they were rounding errors on December 31, 2011. Nvidia had an \$8 billion market cap while Tesla was worth \$3 billion, so their inclusion would round the seven stocks up to 8.6% of the market cap of the S&P. See the table below for clarity, but against 8.6% of market cap for the seven companies, they totaled 3.25% of index aggregate revenues but a much larger 7.6% of profits. 8.6% of market cap on 7.6% of profits doesn't sound expensive at all. How can that be for a basket of uber-growth stocks? Remember, most of the bunch were mere babes in 2011. Apple and Microsoft drove the bus by market cap of the group and thus by sales and profits as well. Apple was valued at \$377 billion but only traded for 11.6x earnings

capitalized on a 25.5% profit margin. Apple comprised 38.6% of the market value of the seven stocks combined and only 3.3% of the S&P 500 (versus 7.5% today). Microsoft was 22.3% of the market value of the group, 1.9% of the index and then traded for 9.7x earnings, down from over 80x in 2000. Their profit margin also fell from 38% in 2000 to 31.1% (eventually all the way to 21% in 2015 before recovering all the way back up to 36% today). Microsoft at 1.9% of the index was remarkable, given that it was the big dog at 5% in 2000. Today it's neck and neck with Apple at 7.5%, so 15% of today's index just between the two companies.

Google was large by 2011, with its \$210 billion market cap making up 21.5% of the seven stocks. Amazon was 8.1%, Facebook theoretically a larger 8.3% (using its IPO valuation) while Nvidia and Tesla were only 0.8% and 0.3% respectively. Few deemed the pair magnificent yet. Tesla ramped to star status in 2020 while Nvidia exploded not until 2023 (continuing at this writing in early February).

What these five or seven companies and stocks did over the decade to 2021 was extraordinary. They grew from roughly 3.2% of index aggregate sales to 10.6% for the five and 11.2% for the seven. Group profit margins actually declined by about 200 basis points so their proportionate share of profits grew a bit slower but regardless exploded up from 7.6% of overall profits to 16.6% and 17.4% by 2021. Fast forwarding by two years to 2023 and the groups' share of total index sales is about the same while profits now total a mind-blowing 18.4% of total profits for the Fab 5 and fully 20.6% for the Mag 7. Folks, that's over one-fifth of \$1.8 trillion in aggregate profits being earned by seven companies. The Fab 5 tanked from 24.7% of index market cap in 2021 to 19.2% a year later only to recover to a new high of 24.9% in 2023. The Magnificents plummeted from 29.2% of the index in 2021 to 21.5% and back up to a new high of 29.9% at yearend 2023. At this writing, the seven are more than 32% of the entire index. The S&P 500 itself at yearend is now an incredible 83.2% of the value of the entire U.S. stock market and 38.2% of *global* GDP.

Magnificent Seven Share of S&P 500 2011-2023

(Dollars in Billions)

	MARKET CAP	PERCENT MARKET CAP	SALES	PERCENT OF SALES	PROFIT	PERCENT OF PROFIT	PROFIT MARGIN
2011							
S&P 500	\$ 11,385		\$ 9,053		\$ 873.07		9.6%
FAB 5	966	8.5%	290	3.2%	66.28	7.6%	22.9%
MAG 7	977	8.6%	294	3.2%	66.60	7.6%	22.7%
2021							
S&P 500	40,356		13,267		1,762.97		13.3%
FAB 5	9,961	24.7%	1,409	10.6%	292.16	16.6%	20.7%
MAG 7	11,790	29.2%	1,489	11.2%	306.88	17.4%	20.6%
2022							
S&P 500	32,133		14,670		1,648.28		11.2%
FAB 5	6,153	19.1%	1,505	10.3%	257.87	15.6%	17.1%
MAG 7	6,903	21.5%	1,613	11.0%	275.47	16.7%	17.1%
2023							
S&P 500	40,039		15,707		1,795.00		11.4%
FAB 5	9,999	25.0%	1,630	10.4%	331.03	18.4%	20.3%
MAG 7	12,012	30.0%	1,786	11.4%	369.72	20.6%	20.7%

Source: *Semper Augustus*, Company Filings

Market capitalization is not float adjusted. Undiluted shares outstanding. Year-end figures.

It's hard to fathom that seven stocks can comprise over 30% of the S&P 500 but it's similarly hard to knock why they do. They earn 20.6 cents of every dollar of profit earned by all 500 companies in the index and as a group they are still growing far faster. 2023 was a recovery year for the index but also for the five or seven stocks, which were hammered much more than the S&P in 2022. Still, while the S&P

added \$8 trillion of market value in 2023, the Magnificent Seven added \$5.1 trillion or 64% of the gain. As recently as October the seven had grown by \$4 trillion for the year while the residual 493 members of the index were negative for the year. Said differently, while the S&P 500 advanced 24.2% by price in 2023, the Mag 7 rocketed 74% while the remaining 493 deadbeats only grew 11.5%. You were smart to miss the seven stocks in 2022 when they lost 40.2% by total return but an idiot to not be around for the full bounce back last year.

What now? There is no way the five or seven stocks can be repeat performers, although Nvidia is doing its part so far. Much of their success came from expanding prices relative to fundamentals. No doubt the group will enjoy premium sales growth for the foreseeable future. Let's suppose the group of seven grows sales by a "conservative" 9.5% annually over the next decade, a rate of growth matching that of the last two years for the group. Sales would grow from just under \$1.8 trillion to just over \$4.4 trillion. Assuming that index sales grow 3.4% annually, matching the growth rate of the prior decade they grow to \$21.9 trillion. That takes group sales to 20% of the index total, up from 11.4%. If margins hold at 20.7% for the seven and 11.4% for the index, group profits grow to \$911 billion versus nearly \$2.5 trillion for the index. That's the seven companies growing profits from 20.6% of index profits to 36.5%. I simply find it nearly impossible that seven companies will earn more than a third of all index profits. The group is now trading for 32.5x earnings, down from 38.4x in 2021. If we hold multiples constant for the index and for the seven, we'd have an S&P 500 valued at \$56 trillion. The Magnificent Seven would fetch \$29.6 trillion or 53% of the total. If you think nearly a third of the index market cap in seven companies makes sense today, prepare yourself for more than half. Or not.

Somewhere between here and there, regulation becomes more of an issue for some of the constituents. Perhaps no natural competitor exists from the 493 or abroad but why not today's startup? Or a profitless member of the ARKK collection? The seven companies already compete with one another, and we'd expect this to intensify. Sales growth for the group is slowing, with the notable exception of Nvidia. Margins essentially flatlined over the past two years as a group, growing from 20.6% to 20.7%, largely thanks to rapid profit growth at Nvidia. Little room for error exists when margins and multiples are high, particularly when businesses are already huge. The law of large numbers eventually becomes an anchor. We owned Microsoft for numerous years after the stock dropped 75% from its 2000 high and regrettably sold the position before their cloud business made the company again wildly successful. Still, we are thrilled to not own the S&P 500, the Fab Five or the Magnificent Seven today, outside of a very large indirect position in Apple within Berkshire. High multiples on high margins often eventually lead to trouble.

A note for those digging into the nuances of these Magnificent Seven tables. The share count is reset to 1,000 shares outstanding at the outset of any time period under observation. Doing so makes building the data sets much easier. The result of doing so is the per-share figures for earnings, dividends, sales and price per share will not roll forward. All are reset to the initial 1,000 share outstanding at each interval's outset. The figures for growth and annual average growth are all correct. For the individual seven stocks under review, we are using the actual shares outstanding so all per-share figures do roll forward. The group is capitalization weighted at the beginning of each period, meaning there is no rebalancing. I believe editor-extraordinaire Lincoln's head exploded trying to figure out what happened with the data this year when reviewing the draft letter.

One additional note: The 1.4% dividend yield for the decade ended 2021 appears *way* too high given 0.6% and 0.3% initial and ending yields, respectively. The figure is correct. Microsoft was the only dividend payer among the seven companies at the outset in 2011 and Apple would pay their first dividend in 2012's third quarter. These two stocks combined for the preponderance of market capitalization in the first years under review. Importantly, the two were cheap, trading at low-teens multiples or below,

making their dividend yields much higher for several years compared to today when prices are sky high, shriveling yields. This alone should give index and Mag Seven investors pause about expectations.

One final note: Our work does not use float-adjusted shares but total shares outstanding, thus overstating by a bit the Magnificent Seven's concentration in the index. The folks at S&P exclude shares held by insiders in their calculation of market capitalization for index weighting purposes, seeking to match shares available to the public (the public float) for trading to each company's representation in the index. So, when Tesla's board gives 20% of the company to its non-founder CEO as motivation, his shares are not included in shares outstanding, even after he exercises options and chooses to hold those shares. Hence, companies with large insider ownership are underrepresented due to their float-adjusted capitalizations. Of course, when Tesla's CEO and his Board-of-Director brother sell a *mountain* of stock literally at the high, those shares are now owned by the public and in the float. The company's float-adjusted market capitalization now includes these formerly insider-held shares and therefore rises, forcing index managers to buy more shares. Literally at the high. What a deal.

But enough notes. The following tables present return factors for four time periods:

- The decade from 2011 to 2021
- 2022
- 2023
- 2022-2023

We'll start with the group of seven first and then present each company individually. First up is the Magnificent Seven.

Despite their being tiny in 2011 relative to the Fab 5, adding Tesla and Nvidia to the group boosted the decade total return to 2021 by 1%, from 29.8% to 30.8%. The preponderance of annualized return came from red hot 17.6%-dollar sales growth and huge expansion in price as reflected in the P/E ballooning from 14.7x to 38.4x. Margins actually declined from 22.7% to 20.6%, costing investors nearly 1% of annual return (shouldn't be upset, given the 30.8% annual gain). Apple and Microsoft were both by far the largest components at the outset and both bought back large chunks of their outstanding shares, contributing 2.6% to return.

MAG 7 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	0.07	0.01	0.29	293.8	1,000.000	22.7%	14.7	0.6%	0.98	
12/31/2021	0.40	0.04	1.92	1,489.4	775.655	20.6%	38.4	0.3%	15.20	
Growth %	494.1%	153.2%	553.6%	406.9%	28.9%	-9.1%	161.8%	-55.6%	1,214.7%	1,367.9%
Annual Avg	19.5%	9.7%	20.7%	17.6%	2.6%	-0.9%	10.1%	1.4%	29.4%	30.8%

MAG 7 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	0.31	0.03	1.49	1,489.4	1,000.000	20.6%	38.4	0.3%	11.79	
12/31/2022	0.28	0.03	1.64	1,613.5	983.712	17.1%	25.1	0.5%	7.02	
Growth %	-8.7%	0.3%	10.1%	8.3%	1.7%	-17.1%	-34.8%	81.4%	-40.4%	-40.2%
Annual Avg	-8.7%	0.3%	10.1%	8.3%	1.7%	-17.1%	-34.8%	0.3%	-40.4%	-40.2%

MAG 7 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	0.28	0.03	1.61	1,613.5	1,000.000	17.1%	25.1	0.5%	6.90	
12/31/2023	0.37	0.04	1.81	1,786.2	988.262	20.7%	32.5	0.3%	12.15	
Growth %	35.8%	0.6%	12.0%	10.7%	1.2%	21.2%	29.7%	-39.2%	75.8%	76.4%
Annual Avg	35.8%	0.6%	12.0%	10.7%	1.2%	21.2%	29.7%	0.6%	75.8%	76.4%

MAG 7 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	0.31	0.03	1.49	1,489.4	1,000.000	20.6%	38.4	0.3%	11.79	
12/31/2023	0.38	0.04	1.84	1,786.2	972.901	20.7%	32.5	0.3%	12.35	
Growth %	23.8%	0.8%	23.3%	19.9%	2.8%	0.5%	-15.4%	10.4%	4.7%	5.5%
Annual Avg	11.3%	0.4%	11.0%	9.5%	1.4%	0.2%	-8.0%	0.4%	2.3%	2.7%

After the runup to 2021 the Mag 7 market cap then roundtripped over the next two years from \$11.8 trillion to \$6.9 trillion back to \$12.0 trillion. Call it a roundtrip on a roller coaster. Might as well have just taken a Rip Van Winkle siesta and saved the drama. Noteworthy was 19.9% cumulative sales growth, 9.5% per year for the two years. It's a high number but inflation, right? Group sales growth was also not much higher than overall sales growth for the entire S&P 500. Among the seven, some are businesses growing very rapidly while others are not. The seven stocks gained all of 2.7% per year in total return, meh, half of which came via shrinking shares outstanding at Apple, Microsoft, Google, Meta and Nvidia. Amazon remains dilutive and Tesla knows no other way, what with its CEO having been granted two option packages totaling about 20% of the entire company in 2012 and 2018. You won't find that page in the Berkshire Hathaway playbook (or in any other companies' that I can recall over 33 years of researching and investing).

Let's blitz through the run-up to 2021's secular peak and the ensuing two years for each of the Magnificents.

Apple

Apple's shares earned a spectacular 30.5% compound annual return for the decade ended 2021. It was not a small enterprise at the outset of the decade, earning \$33 billion on \$128 billion in sales and valued at \$377 billion, or 11.6x earnings by Mr. Market. To produce a ten-year 30.5% annual return on what turned out to be 11.5% annual sales growth (nearly tripling), more than blistering top line growth was involved in the outcome. First, Apple began paying a dividend in 2012, which contributed 2.0% to annual return. In viewing the table for the decade, one might fairly ask how no dividend at the outset and a 0.5% dividend yield at the end can produce 2% per year. As discussed earlier, a dividend yield is at a point in time. For much of the decade Apple's shares were cheap. They sported an 11.6x P/E multiple at the end 2011 for example (and less than 10x net of net cash). The stock took off in the back half of 2019 through year-end 2021. From 2012 to 2020 Apple paid roughly a quarter of annual earnings as dividends and because the stock was trading generally for a low-teens multiple, the yield was high. By 2021 the multiple blew up to 29.4x (contributing almost 10% to annual returns) and the company also decided to hold the payout to about 15% of annual profit. Hence on a much higher P/E and lower proportionate distribution the dividend yield collapsed to 0.5%.

I'm not sure how conscious the decision was to shrink the dividend payout. Annual increases in the dividend rate rose by a nickel a share over eight of the ten years after the dividend was first paid. In two of the years the bump in rate was a few cents higher. So why shrink the payout rate, particularly since

profit margins were stable to very modestly rising? What use did and does Apple have for their retained earnings? For one thing, research and development has marched higher over the past twelve years, rising not only in dollar terms as the business grew but also as a proportion of rising sales, from roughly 3% of sales on average to 7.5% more recently. Capital expenditure needs of the business are tiny, whether for maintenance or growth. R&D and advertising drive the business. But Apple found an even larger use of surplus capital, which for years contributed mightily to shareholder return – share repurchases. A year after Apple began paying a dividend, it ramped up its share repurchase program in a very big way. Instead of buying back approximately \$2 billion a year as they did in 2011 and 2012, about 4% of cash flow from operations, in 2013 they bought back almost ten times that amount and averaged about half of cash from operations for the next five years. From 2018 through 2023 Apple has repurchased almost \$470 billion of their shares against \$560 billion in cash from operations. Nearly 85% of operating cash flow is being spent buying shares. The P/E was still only 16x in 2019. Over the decade in review from 2011 to 2021, Apple bought back 37.4% of its outstanding shares, or close to 4.8% of their shares each year (over the years with large repurchases).

The problem becomes price. What started off as a very good thing, buying shares when they were cheap after taking care of capital needs and R&D, ultimately becomes perhaps less of a good thing at high prices. Over the last two years, Apple's revenue growth ground nearly to a halt, only growing 1% per year. R&D is being taken care of at 7.5% of sales. Apple continued to repurchase mammoth amounts of stock, averaging \$84 billion a year for the last two years against an average \$111 billion in cash from operations. By paying multiples pushing 30x earnings (a 3.33% earnings yield), you don't get as much bang for the buck. Spending three-fourths of cash flow retired the share count by 2.7% a year from 2021 to 2023. The stock produced a 4.7% average annual total return over the two years but doing so required nearly all incremental firm resources. As large indirect shareholders through Berkshire's ownership of Apple shares, we'd prefer a more flexible capital policy, buying shares when they are cheap and sending special dividends to shareholders when they are not. If sales growth fails to recover to at least 7% annually, the multiple is certain to shrivel from today's 30.0x. To my mind, Apple is worth far less than its \$3 trillion valuation on \$400 billion of slow-growing sales producing profits of just over \$100 billion.

AAPL 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	1.25	0.00	4.90	127.8	26.102	25.5%	11.6	0.0%	14.46	
12/31/2021	6.04	0.87	23.15	378.3	16.341	26.1%	29.4	0.5%	177.57	
Growth %	383.2%	0.0%	372.7%	195.9%	59.7%	2.2%	154.1%	0.0%	1,128.0%	1,332.1%
Annual Avg	17.1%	0.0%	16.8%	11.5%	4.8%	0.2%	9.8%	2.0%	28.5%	30.5%

AAPL 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	6.04	0.87	23.15	378.3	16.341	26.1%	29.4	0.5%	177.57	
12/31/2022	5.89	0.92	24.46	387.5	15.842	24.1%	22.1	0.7%	129.93	
Growth %	-2.5%	5.7%	5.7%	2.4%	3.1%	-7.7%	-25.0%	44.5%	-26.8%	-26.4%
Annual Avg	-2.5%	5.7%	5.7%	2.4%	3.1%	-7.7%	-25.0%	0.4%	-26.8%	-26.4%

AAPL 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	5.89	0.92	24.46	387.5	15.842	24.1%	22.1	0.7%	129.93	
12/31/2023	6.42	0.95	24.95	385.7	15.460	25.7%	30.0	0.5%	192.53	
Growth %	9.0%	3.3%	2.0%	-0.5%	2.5%	6.9%	35.9%	-30.3%	48.2%	49.0%
Annual Avg	9.0%	3.3%	2.0%	-0.5%	2.5%	6.9%	35.9%	0.8%	48.2%	49.0%

AAPL 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	6.04	0.87	23.15	378.3	16.341	26.1%	29.4	0.5%	177.57	
12/31/2023	6.42	0.95	24.95	385.7	15.460	25.7%	30.0	0.5%	192.53	
Growth %	6.3%	9.2%	7.8%	2.0%	5.7%	-1.4%	2.0%	0.7%	8.4%	9.7%
Annual Avg	3.1%	4.5%	3.8%	1.0%	2.8%	-0.7%	1.0%	0.6%	4.1%	4.7%

Microsoft

Microsoft likewise enjoyed a phenomenal ten years to 2021, the stock compounding by 32.0%. Sales grew 9.9% annually, margins grew from 31.1% to 35.5% and investors bid the stock up from a bargain-basement single-digit 9.7x earnings to 38.5x. Multiple expansion alone contributed 14.7% per annum to return. The business had gone through the doldrums following the tech bubble. Revenue growth slowed while margins and multiples both contracted. By 2015 half of profits were being paid as dividends. The share count peaked in 2004 at almost 11 billion outstanding and now resides 33% lower. During the ten years to 2021 the company retired 10.5% of shares, contributing 1.1% to annual return.

Like the other Magnificents, Microsoft's shares tanked in 2022 and reverted back up last year, returning 6.7% annually over the two years. More than all of the stock's positive return came from ongoing strong sales growth, which grew by nearly a quarter over the two years, adding 10.9% to annual return. Offsetting gains in revenues was a contraction in Microsoft's P/E from 38.5x to 34.0x, harming return by 6.0% a year. The dividend payout is back to roughly 25% of annual profit, but like Apple and its high price, a tiny earnings yield also means a tiny dividend yield, which averaged 1.0%. Also like Apple, repurchasing shares at high prices, even with large portions of operating cash flow, doesn't dent the share count by much – Microsoft's shrank by only 0.5% a year, not adding much to return. Unlike Apple, Microsoft has found a use for big money outside dividends and share repurchases. Azure, Microsoft's cloud business, is a beast and absorbing a mountain of capital which for now is *extremely* profitable. It's a great example of a management team knowing where to spend its money and how to reinvent itself at the same time. Why buy shares at a 3% earnings yield or why send profits out as dividends if the next data center or R&D spent on software produces incredible returns? From an investment and future return standpoint, how much more than sales growth can be expected when a 36.1% profit margin is capitalized at 34x?

MSFT 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	2.67	0.72	8.60	72.1	8.382	31.1%	9.7	2.8%	25.96	
12/31/2021	8.74	2.36	24.65	184.9	7.500	35.5%	38.5	0.7%	336.32	
Growth %	227.3%	227.8%	186.8%	156.6%	11.8%	14.1%	295.8%	-74.7%	1,195.5%	1,500.7%
Annual Avg	12.6%	12.6%	11.1%	9.9%	1.1%	1.3%	14.7%	2.8%	29.2%	32.0%

MSFT 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	8.74	2.36	24.65	184.9	7.500	35.5%	38.5	0.7%	336.32	
12/31/2022	9.16	2.60	27.41	204.1	7.447	33.4%	26.2	1.1%	239.82	
Growth %	4.8%	10.2%	11.2%	10.4%	0.7%	-5.7%	-32.0%	54.5%	-28.7%	-28.0%
Annual Avg	4.8%	10.2%	11.2%	10.4%	0.7%	-5.7%	-32.0%	0.7%	-28.7%	-28.0%

MSFT 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	9.16	2.60	27.41	204.1	7.447	33.4%	26.2	1.1%	239.82	
12/31/2023	11.06	2.86	30.62	227.6	7.432	36.1%	34.0	0.8%	376.04	
Growth %	20.7%	10.0%	11.7%	11.5%	0.2%	8.1%	29.9%	-29.8%	56.8%	58.2%
Annual Avg	20.7%	10.0%	11.7%	11.5%	0.2%	8.1%	29.9%	1.4%	56.8%	58.2%

MSFT 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	8.74	2.36	24.65	184.9	7.500	35.5%	38.5	0.7%	336.32	
12/31/2023	11.06	2.86	30.62	227.6	7.432	36.1%	34.0	0.8%	376.04	
Growth %	26.5%	21.2%	24.2%	23.1%	0.9%	1.9%	-11.6%	8.4%	11.8%	13.9%
Annual Avg	12.5%	10.1%	11.4%	10.9%	0.5%	0.9%	-6.0%	1.0%	5.7%	6.7%

Google/Alphabet

Google, just like the other Magnificents, produced a terrific 24.5% 10-year return through 2021. 21.1% annual sales growth accounted for the majority of the return while multiple expansion from 21.1x to 28.8x chipped in 3.2% per year. As a growing tech firm, executives were (and are) paid with large option and RSU grants. Google's share count rose modestly, costing investors 0.2% of return per year. By 2019 the company was buying shares back on a net basis and retired 5.9% of shares from 2021 to 2023, adding 3.1% to total return per year for those two years.

Google's growth in dollar sales is now advancing at less than half of its prior rate. Despite growing by 9.2% a year and benefitting from fewer shares outstanding, growth in annual sales per share of 12.6% from 2021 to 2023 was insufficient to prevent a loss in the stock. It's never a good thing when margins and multiples both compress. With no dividends paid, Google's annual return since 2021 was -1.8%. If the company can maintain or grow its 24.8% net profit margin, then a case can be made that the current 22.8x multiple (closer to 20x net of net cash) may allow for a decent prospective return. You are paying three quarters of Apple's multiple with more sales growth.

The balance sheet shines with \$80 billion net cash. Over the last three years management repurchased roughly \$60 billion a year of its shares, about 60% of cash from operations and almost all of net income. Like Microsoft and Amazon, Google is investing big bucks in cloud capital. Throw in the occasional home run like YouTube and the stock may wind up being the most magnificent of the group prospectively. Earnings may be pushing \$150 billion by 2028 or 2029. The stock climbed 58.3% in 2023. I find it very difficult to have clarity on the regulatory and competitive landscape for Google and several of the businesses under discussion. At a mid-teens multiple net of cash a year ago, believe me, we were tempted. The price doesn't strike us as ridiculous today. Google remains in the "Too-Hard Pile" but does get attention around here.

GOOGL 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	0.77	0.00	2.92	37.9	12.996	26.3%	21.1	0.0%	16.16	
12/31/2021	5.03	0.00	19.46	257.6	13.242	25.9%	28.8	0.0%	144.85	
Growth %	555.8%	0.0%	567.0%	579.7%	-1.9%	-1.7%	36.7%	0.0%	796.4%	796.2%
Annual Avg	20.7%	0.0%	20.9%	21.1%	-0.2%	-0.2%	3.2%	0.0%	24.5%	24.5%

GOOGL 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	5.03	0.00	19.46	257.6	13.242	25.9%	28.8	0.0%	144.85	
12/31/2022	4.86	0.00	22.01	282.8	12.849	22.1%	18.2	0.0%	88.23	
Growth %	-3.4%	0.0%	13.1%	9.8%	3.1%	-14.6%	-37.0%	0.0%	-39.1%	-39.1%
Annual Avg	-3.4%	0.0%	13.1%	9.8%	3.1%	-14.6%	-37.0%	0.0%	-39.1%	-39.1%

GOOGL 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	4.86	0.00	22.01	282.8	12.849	22.1%	18.2	0.0%	88.23	
12/31/2023	6.12	0.00	24.67	307.4	12.460	24.8%	22.8	0.0%	139.69	
Growth %	25.9%	0.0%	12.1%	8.7%	3.1%	12.4%	25.7%	0.0%	58.3%	58.3%
Annual Avg	25.9%	0.0%	12.1%	8.7%	3.1%	12.4%	25.7%	0.0%	58.3%	58.3%

GOOGL 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	5.03	0.00	19.46	257.6	13.242	25.9%	28.8	0.0%	144.85	
12/31/2023	6.12	0.00	24.67	307.4	12.460	24.8%	22.8	0.0%	139.69	
Growth %	21.7%	0.0%	26.8%	19.3%	6.3%	-4.0%	-20.7%	0.0%	-3.6%	-3.6%
Annual Avg	10.3%	0.0%	12.6%	9.2%	3.1%	-2.0%	-11.0%	0.0%	-1.8%	-1.8%

Amazon

Amazon's shares earned 34.4% annually from 2011 to 2021. Revenue growth at 25.6% was nearly a ten-fold increase, albeit from a small base. The analyst must dig into the component businesses within Amazon to develop a framework to determine where growth and profitability will be derived, overlaid on where the capital in the business resides and will be spent. The stock ended 2021 at 71.6x earnings, reflective of expectations for ongoing rapid sales growth and margin expansion to perhaps 9% or 10% from 5.0% in 2021. Glance at the multiple paid for 2011's slight 1.3% margin. It was priced like a *really* fast-growing distributor with huge volumes and rapid inventory turnover. Somewhat not far off the mark for its original retail business where it owns inventory. Understanding the business requires understanding its third-party retail operation and also their cloud business. The creation of AWS and its success are incredible. Amazon invented and scaled an entirely phenomenal new business from an underutilized asset base. If the blend of businesses ultimately reaches a 10% net margin, then the stock really didn't trade for 124.6x in 2011 or 71.6x in 2021. Doubling the assumed margin halves the multiple.

Investors clearly didn't like what transpired in 2022 when the margin collapsed to 1.5% from 5.0%, sending the multiple back over 100x. Dollar sales growth of 9.4% and a bit of dilution combines to send the stock down 50%. Turning the page by a year, investors applauded the margin recovering and exceeding 2021's 5.0%. The extremes of how our five factors work together are on full display with Amazon. An 80.9% total return in 2023 was bolstered by 262.6% growth in the margin, a 54.8% loss from the multiple moving back down to 51.3x from over 100x. Dollar sales continued to race ahead by 11.8% and the business continues to spend capital and increase shares, costing investors 1.4%. Math being math, a 50% decline and subsequent 80.9% gain leaves you down 8.9% total, or 4.5% per year from 2021 to 2023. The 1.6 trillion-dollar question is: What margin level does Amazon's array of businesses collectively earn? I have an idea and don't think the stock's 113.5x multiple was out of line a year ago. Please don't confuse this thinking with one particular promoter with a knack for finding every money-losing business under the sun and expecting 30% growth and 30% margins. And earning 50% a year in

the meantime. For those confused by this sentence, just click on CNBC and you will figure it out very quickly.

AMZN 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	0.07	0.00	5.28	48.1	9.100	1.3%	124.6	0.0%	8.66	
12/31/2021	2.33	0.00	46.15	469.8	10.180	5.0%	71.6	0.0%	166.72	
Growth %	3,255.4%	0.0%	773.6%	877.2%	-10.6%	284.1%	-42.6%	0.0%	1,826.3%	1,826.3%
Annual Avg	42.1%	0.0%	24.2%	25.6%	-1.1%	14.4%	-5.4%	0.0%	34.4%	34.4%

AMZN 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	2.33	0.00	46.15	469.8	10.180	5.0%	71.6	0.0%	166.72	
12/31/2022	0.74	0.00	50.18	514.0	10.242	1.5%	113.5	0.0%	84.00	
Growth %	-68.2%	0.0%	8.7%	9.4%	-0.6%	-70.8%	58.6%	0.0%	-49.6%	-49.6%
Annual Avg	-68.2%	0.0%	8.7%	9.4%	-0.6%	-70.8%	58.6%	0.0%	-49.6%	-49.6%

AMZN 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	0.74	0.00	50.18	514.0	10.242	1.5%	113.5	0.0%	84.00	
12/31/2023	2.96	0.00	55.36	574.8	10.383	5.3%	51.3	0.0%	151.94	
Growth %	300.0%	0.0%	10.3%	11.8%	-1.4%	262.6%	-54.8%	0.0%	80.9%	80.9%
Annual Avg	300.0%	0.0%	10.3%	11.8%	-1.4%	262.6%	-54.8%	0.0%	80.9%	80.9%

AMZN 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	2.33	0.00	46.15	469.8	10.180	5.0%	71.6	0.0%	166.72	
12/31/2023	2.96	0.00	55.36	574.8	10.383	5.3%	51.3	0.0%	151.94	
Growth %	27.0%	0.0%	19.9%	22.3%	-2.0%	5.9%	-28.3%	0.0%	-8.9%	-8.9%
Annual Avg	12.7%	0.0%	9.5%	10.6%	-1.0%	2.9%	-15.3%	0.0%	-4.5%	-4.5%

Facebook/Meta

In one of the most extraordinary reversals, Meta performed a Billie Joe McAllister leap from the Tallahatchie Bridge in 2022. With a bungee cord. A 64.2% loss requires a 179.3% gain to breakeven (a two-thirds loss requires a triple). Following a spectacular first decade as a public company, the rebranded Facebook faceplanted in 2022, a confluence of a 1.1% sales decline, margin collapse from 31.9% to 22.6% and the P/E multiple halving from 24.5x to 12.0x. Proving a good opportunity to repurchase shares, the company spent \$32 billion buying shares, \$9 billion more than net income (having spent \$50 billion the prior year, again way more than profit and nearly all cash produced from operations). What perspicacity. Shareholders were rewarded in 2023 with a 194.1% return, sparked by 15.7% sales growth, ongoing share repurchases, margins recovering from 22.6% to 31.6% and the multiple nearly doubling, recovering from 12.0x to 21.4x. With all the pyrotechnics over the two years, shareholders made...wait for it...2.6% per year. The business is so fully recovered that it will begin paying a dividend this quarter. I worried for a minute in 2004 that Costco's growth prospects might be in question when they paid their first dividend shortly after buying the stock for the first time. It turns out they knew precisely how much capital they needed to retain to grow intelligently and instead of repurchasing what were generally

expensive shares returned unneeded capital to shareholders as regular and special dividends. We'll see if Facebook knows the limits of their capital needs and mimics Costco's playbook. The business has been a generous donor of its shares to employees over the years.

Where my files on Google and Amazon sit atop the Too-Hard Pile, the Meta file rests at the bottom. The place is such a lightning rod, who knows what to expect on the regulatory and competitive fronts. At the 20th anniversary from its founding in a dorm room, 20 years from now this could be the biggest company in the world or it could be the next BlackBerry.

META 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	0.31	0.00	1.73	3.7	2.142	18.0%	122.6	0.0%	38.23	
12/31/2021	13.71	0.00	43.02	117.9	2.741	31.9%	24.5	0.0%	336.35	
Growth %	4,297.0%	0.0%	2,383.8%	3,077.8%	-21.8%	77.0%	-80.0%	0.0%	779.8%	779.8%
Annual Avg	46.0%	0.0%	37.9%	41.3%	-2.4%	5.9%	-14.9%	0.0%	24.3%	24.3%

META 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	13.71	0.00	43.02	117.9	2.741	31.9%	24.5	0.0%	336.35	
12/31/2022	10.07	0.00	44.61	116.6	2.614	22.6%	12.0	0.0%	120.34	
Growth %	-26.5%	0.0%	3.7%	-1.1%	4.9%	-29.2%	-51.3%	0.0%	-64.2%	-64.2%
Annual Avg	-26.5%	0.0%	3.7%	-1.1%	4.9%	-29.2%	-51.3%	0.0%	-64.2%	-64.2%

META 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	10.07	0.00	44.61	116.6	2.614	22.6%	12.0	0.0%	120.34	
12/31/2023	16.57	0.00	52.49	134.9	2.570	31.6%	21.4	0.0%	354.00	
Growth %	64.5%	0.0%	17.7%	15.7%	1.7%	39.8%	78.8%	0.0%	194.2%	194.1%
Annual Avg	64.5%	0.0%	17.7%	15.7%	1.7%	39.8%	78.8%	0.0%	194.2%	194.1%

META 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	13.71	0.00	43.02	117.9	2.741	31.9%	24.5	0.0%	336.35	
12/31/2023	16.57	0.00	52.49	134.9	2.570	31.6%	21.4	0.0%	354.00	
Growth %	20.9%	0.0%	22.0%	14.4%	6.7%	-0.9%	-12.9%	0.0%	5.2%	5.2%
Annual Avg	9.9%	0.0%	10.5%	7.0%	3.3%	-0.5%	-6.7%	0.0%	2.6%	2.6%

Tesla



The introduction of two new companies to FANG, FAANG, MAMMA and so forth is on the scale of college football realignment. Now known as the Magnificent Seven, including Nvidia and Tesla is like merging the SEC and Big Ten and picking up Coach Prime, SI Sportsperson of the Year, and his Golden Buffaloes. One super conference. One group of stocks so charmed and necessary in an investment portfolio to be simply magnificent. In case you are wondering, occasionally magazines release multiple covers of their really big editions. One new hip down, one to go, a new knee next and a little time in the weight room. I told Coach with one year of eligibility remaining (maybe two thanks to the Covid year) I'm coming. He's elated.



There are numerous interesting aspects of investing. One is that most people believe past performance is a guarantee of future results. Tech stocks at large flew close to the sun in 2021 and saw their wings of wax melted, sending them hurtling to earth. Unlike Icarus, tech has multiple lives, and like the Phoenix sprouted new wings and rose from the ashes. Tesla was spectacular over two sprints, most recently in 2020 when it rose 743% and was added to the S&P 500, its selection committee known for adding past winners and kicking out dogs. At its peak in 2021 Tesla was priced at nearly \$1.4 trillion (fully diluted shares to reflect the CEO being granted 20% of the company), 28x \$50 billion in sales and 280x a 10% profit margin. The stock may be down 55% from its high (his brother and board member sold that day, Elon happened to tweet the next day that he too might sell and then did the next trading day).

Tesla's decade to year-end 2021 was pretty impressive. Sales grew from \$200 million (with an "m") to \$54 billion. That's 74.6% per year, albeit from a nascent base. Making cars requires money, lots of it, and until 2020 Tesla made no money, profits that is. It did raise equity and debt capital, doubling the share count. In all, the stock compounded by 68.5% annually and a market capitalization over \$1 trillion. It traded at 217x earnings at the end of the decade. Not quite the high from the prior month but high.

2022 was quite a year. Dollar sales grew 51.4%. Check. Dilution was minimal at 2.1%. Check. The profit margin exploded from 9.3% to 14.2%. Check. However, the P/E multiple came down a bit, from 217.4x to 33.7x, an 84.5% decline that crimped all of the good news, sending the stock down 65% for the year.

Recalling the necessity of tripling to offset a two-thirds loss to break even, Tesla's stock had a better 2023, just more than doubling. That was about the end of the good news. It seems the dominant robotaxi and auto insurance company to be found it necessary to lower prices to sell affordable cars. Lessons learned about operating leverage for sure. Sales growth tanked to a level far below what any Pollyanna analyst or cult member expected and rose only 18.8% in 2023. A bit more dilution and margin contraction from 14.2% to 8.6% (still somewhat high for a car company) pushed earnings per share down by 28.7%. The always intrepid Tesla shareholders, expecting better sales and margins in the near future, sent the P/E back up to 95.2x from 33.7x. What now, margins? In any event, Tesla was anointed a member of the new and exclusive Magnificent Seven Club during 2023. Rumor has it that the Tesla faithful may be fading some of their enthusiasm and thinking the stock may be ditched for up-and-coming Broadcom or the Mag Seven may be shrinking to the Sweet Six, or the Studly Six or some such thing. [Few remember the Big 6 preceded the Big 8 which preceded the Big 12 (and now never includes the number of schools in the name of the conference). We also had the Big Eight accounting firms, then the Big Six, then the Big Five, and then Enron and bye-bye Arthur Andersen. And then there were four.]

TSLA 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	-0.17	0.00	0.13	0.2	1.568	-130.5%	-11.2	0.0%	1.90	
12/31/2021	1.62	0.00	17.37	53.8	3.099	9.3%	217.4	0.0%	352.26	
Growth %	NMF%	0.0%	13,236.3%	26,258.0%	-49.4%	NMF%	2,041.5%	0.0%	18,401.1%	18,401.1%
Annual Avg	0.0%	0.0%	63.1%	74.6%	-6.6%	0.0%	0.0%	0.0%	68.5%	68.5%

TSLA 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	1.62	0.00	17.37	53.8	3.099	9.3%	217.4	0.0%	352.26	
12/31/2022	3.66	0.00	25.75	81.5	3.164	14.2%	33.7	0.0%	123.18	
Growth %	125.9%	0.0%	48.2%	51.4%	-2.1%	52.4%	-84.5%	0.0%	-65.0%	-65.0%
Annual Avg	125.9%	0.0%	48.2%	51.4%	-2.1%	52.4%	-84.5%	0.0%	-65.0%	-65.0%

TSLA 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	3.66	0.00	25.75	81.5	3.164	14.2%	33.7	0.0%	123.18	
12/31/2023	2.61	0.00	30.38	96.8	3.185	8.6%	95.2	0.0%	248.48	
Growth %	-28.7%	0.0%	18.0%	18.8%	-0.7%	-39.6%	182.9%	0.0%	101.7%	101.7%
Annual Avg	-28.7%	0.0%	18.0%	18.8%	-0.7%	-39.6%	182.9%	0.0%	101.7%	101.7%

TSLA 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	1.62	0.00	17.37	53.8	3.099	9.3%	217.4	0.0%	352.26	
12/31/2023	2.61	0.00	30.38	96.8	3.185	8.6%	95.2	0.0%	248.48	
Growth %	61.1%	0.0%	74.9%	79.8%	-2.7%	-7.9%	-56.2%	0.0%	-29.5%	-29.5%
Annual Avg	26.9%	0.0%	32.3%	34.1%	-1.4%	-4.0%	-33.8%	0.0%	-16.0%	-16.0%

Nvidia

And then there was Nvidia. The company designs and sells graphic processing units (GPU) and central processing units (CPU) for use in gaming, professional visualization, some automotive and more recently data centers. Their heavy lifting of manufacturing semiconductor wafers is outsourced to Taiwan Semiconductor. From its founding in 1993 and early 1999 IPO it's been a good business with high-teens to mid-twenties returns on capital. During the decade ended at our 2021 secular peak, dollar sales grew an impressive 21% annually from a small \$4 billion in 2011 to \$26.9 billion. Profits went on a tear in the final two years of the decade, rising from a margin of 25% in 2019 to 36% in 2021. Over the full decade margins expanded from 14.7% to 36%. Like many growing tech companies and on the back of the big margin surge, the stock traded up to 76x earnings from 14.4x ten years prior. The company was paying a third to 40% of its profits as dividends from 2013 to 2015. Combining our five factors and the stock compounded by 57.2%.

The top line ground to a halt in 2022 and with the slowdown, margins dropped from 36.0% to 22.3%. The abrupt chilling of business activity cut the share price in half to \$146 and a \$360 billion market cap. At its year-earlier \$737 billion market value the stock was slightly more valuable than Berkshire Hathaway despite its \$27 billion in sales being about what Berkshire earns in profit in six months. Read that again.

From its halving to \$360 billion in 2022, Nvidia got what Berkshire and few others didn't get – AI. Artificial Intelligence, baby. Charlie Munger joked at Berkshire's annual meeting last year that, "Old-fashioned intelligence works pretty well." Well, the prospects of AI and a shortage of manufacturing capacity and chips sent Nvidia's business straight up like something few have seen. Just a month before he passed in November, Charlie quipped, "I think it's [AI] getting a huge amount of hype. I think it's probably getting more than it deserves."

Rightly or wrongly, Nvidia's revenues likely grew 119% to \$59 billion from \$27 billion when they report January 31 fiscal year earnings later this month. The profit margin likewise more than doubled in 2023 to 51.4%. There have been few companies with a margin at or above 50%. Nvidia's multiple came down to 40.2x. The stock was up an incredible 239% in 2023 and saw the market capitalization grow from \$360 billion to over \$1.2 trillion by yearend. Just yesterday the stock reached \$700 per share, which gives the company a market value over \$1.7 trillion. Some sell side analysts model revenues growing from today's \$59 billion to \$150 billion over the next four years and earning margins close to 51.4% at present. Call it \$75 billion in earnings in early 2028. That's "only" 23x earnings four years out at today's market cap. In the meantime, \$1.7 trillion is 56x today's earnings at a 51.4% profit margin. What could go wrong?

NVDA 10 Year to 2021	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2011	0.24	0.00	1.63	4.0	2.449	14.7%	14.4	0.0%	3.47	
12/31/2021	3.87	0.16	10.74	26.9	2.506	36.0%	76.0	0.1%	294.11	
Growth %	1,512.5%	0.0%	557.8%	573.2%	-2.3%	145.1%	426.4%	0.0%	8,388.0%	9,139.0%
Annual Avg	32.1%	0.0%	20.7%	21.0%	-0.2%	9.4%	18.1%	1.3%	55.9%	57.2%

NVDA 1 Year 2022	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	3.87	0.16	10.74	26.9	2.506	36.0%	76.0	0.1%	294.11	
12/31/2022	2.44	0.16	10.94	27.0	2.466	22.3%	59.9	0.1%	146.14	
Growth %	-37.0%	0.0%	1.8%	0.2%	1.6%	-38.1%	-21.2%	101.3%	-50.3%	-50.3%
Annual Avg	-37.0%	0.0%	1.8%	0.2%	1.6%	-38.1%	-21.2%	0.0%	-50.3%	-50.3%

NVDA 1 Year 2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2022	2.44	0.16	10.94	27.0	2.466	22.3%	59.9	0.1%	146.14	
12/31/2023	12.32	0.16	23.97	59.1	2.466	51.4%	40.2	0.0%	495.22	
Growth %	404.9%	0.0%	119.1%	119.1%	0.0%	130.4%	-32.9%	-70.5%	238.9%	239.0%
Annual Avg	404.9%	0.0%	119.1%	119.1%	0.0%	130.4%	-32.9%	0.2%	238.9%	239.0%

NVDA 2 Year 2021-2023	EPS	DPS	Sales Per Share	Sales in Dollars	Share Count	Margin	P/E Multiple	Yield	Price	Total Return
12/31/2021	3.87	0.16	10.74	26.9	2.506	36.0%	76.0	0.1%	294.11	
12/31/2023	12.32	0.16	23.97	59.1	2.466	51.4%	40.2	0.0%	495.22	
Growth %	218.3%	0.0%	123.2%	119.6%	1.6%	42.6%	-47.1%	-40.6%	68.4%	68.6%
Annual Avg	78.4%	0.0%	49.4%	48.2%	0.8%	19.4%	-27.3%	0.1%	29.8%	29.8%

We work hard around here at Semper to incorporate what we hope is a bit of Charlie's "old-fashioned intelligence" in the investment process. We favor predictable and durable earning power when it's on

sale. Had the Magnificent Seven been investable as a group in 2011, the investor would have paid 14.7x earnings for businesses that would collectively grow sales 17.6% per year for ten years and repurchase 22.4% of their outstanding shares at what were largely favorable prices early on. On top of 17.6% growth in sales per share investors earned 30.8% per year, helped a great deal by an expanding multiple to earnings to 38.4x from 14.7x. The collective group of the Magnificent Seven is now *much* larger and growing *far* slower. Sales growth for the last two years for the group is at half the rate of the decade to 2021. Paying 32.5x earnings at year-end 2023 for companies earning a 20.7% profit margin leaves little margin for error. We prefer margins of safety.

I don't find a single one of the Magnificent Seven safe enough at current prices to buy and hold for a decade or more. The owner of the S&P 500 has 32% of their invested capital in just this group of seven companies. Come what may of technological obsolescence, competition from outside or with each other, regulation, lack of internal reinvestment opportunity, price insensitivity in share repurchases, misallocation of incremental capital, brand disaffection and geopolitical risk. Price alone coupled with these risks make the seven companies and by extension the S&P 500 itself uninvestable today. The investor or analyst can assign any assumptions they wish to the five factors dictating investment return. Be sure to apply some of Charlie's common sense when doing so and take his perspective to heart, "Of course when people talk about common sense, they mean uncommon sense." The least common of all the senses. Time will tell, but buyer beware.

On geopolitical risk, read on.

THE CHINA SYNDROME

“Taking the long view, we simply cannot afford to leave China forever outside the family of nations... There is no place on this small planet for a billion of its potentially most able people to live in angry isolation.” Richard Nixon, 1967

“If there’s one thing we should do is get along with China and have lots of free trade with China – it’s in our mutual interest....Attempts by either side to rattle the other should be responded to with reciprocal kindness.” – Charlie Munger, 2023 Berkshire Annual Meeting



How many times have you been instructed the Chinese think in decades and in centuries? China plays the long game? China is not concerned with the short-term because as a one-party authoritarian central-planning dictatorship they need not bother with overly capitalistic Western short-termism? China is a visionary?

The 2014 Semper letter predicted China would not surpass the United States by GDP over the next 15 years.

Chinese GDP will not surpass the U.S. during the next 15 years. If the Chinese economy merely grows 3.8% per year faster, then our prediction will be wrong. In local currency terms, not purchasing power parity, Chinese GDP will total roughly \$10 trillion for 2014, while U.S. GDP should total around \$17.5 trillion. Remember, our forecast for U.S. GDP growth involves some grim stagnancy.

To many, China overtaking the U.S. was not a matter of if but how quickly. Nine years from writing that, I’m now comfortable modifying the forecast to not 15 years but never, or at least not in the next century. China’s “vision” is about to unwind one of the most “successful” experiments in industrialization ever undertaken. The reality is China has no more vision than Ray Charles playing catch with Stevie Wonder. China’s population will decline by half sometime in the next 30 to 60 years. If the country’s nominal GDP doesn’t change as the population halves, that’s one nonideal way to double GDP per capita. Throw in China’s likely deflation and you have barnstorming growth as judged by output per person. Now throw in monumental debt levels that make the overleveraged West appear prudential by comparison and China now becomes a constant headwind to global growth for the decades to come, reversing what had been a hurricane-force tailwind over the last four decades.

U.S. President Richard M. Nixon visited Mao Zedong in 1972, a culmination of a long process by Henry Kissinger, RIP, and the administration to establish relations with the Chinese Communist Party. American policy toward China had favored Chiang Kai-shek’s Republic of China in Taiwan since 1949 after Chiang and his ROC government fled the mainland at the end of the Chinese Civil War. The visit helped the U.S. gain leverage over the Soviet Union, encouraged the CCP to lean against North Vietnam in hopes of ending the war there and ultimately to initiate trade between the U.S. and China.

Once China entered the global economy around 1980, the nation began a rapid industrialization that would move hundreds of millions of rural people off small farms and into cities and urban jobs. The growth in GDP that ensued over the next three decades elevated China to the second largest economy in the world. What is known as the Chinese Growth Miracle was extraordinary in scale and apparent success. Today, the Chinese miracle is over. Chinese growth is over. China’s 1.4 billion population is over. The ramifications of China hitting the proverbial Great Wall will have a profoundly negative impact on the global economy and on global relations. Time bombs of debt and demographics are exploding at

the same moment. As investors in global businesses, our getting this roughly right will be extremely important.

Only for the U.S. awakening China and making it a trading partner did China industrialize as quick and at the scale they did. End trade with the U.S. and China has less energy, loses manufacturing, the importing of raw materials to support manufacturing and to support itself internally with agriculture. China increasingly relies on imported food and on imported fertilizer for the food it does grow. China will deindustrialize and deurbanize. The communist government will collapse. Foreign direct investment is now negative for the first time since records were kept beginning in the 1990s. Foreign capital is leaving China. At the close of Monday Night Football, with the game in hand, Dandy Don Meredith crooned, “Turn out the lights, the party’s over...”

Demographics

Adorning the top of this section is Juan Ponce de León, who made an early departure from the arena in 1521 at the too-young age of 46 or 47 (In one of the most moving Toby Keith, RIP, songs, *Don’t Let the Old Man In*, he sang, “Ask yourself how old would you be if you didn’t know the day you were born”). China is searching for its own proverbial fountain of youth. They need it. Unfortunately, like ol’ Ponce, the Chinese miracle is going to suffer the same fate at roughly the same age.

China’s population declined in 2021 and will do so for the remainder of the century. The decline in 2021 was the first outright net loss of population since 1961, which was the fourth of five “Great Leap Forward” years. The 1958-1962 campaign was the brainchild of visionary Chairman Mao to transform China by leaping the agrarian nation into the industrial age by forcing the population from small family farms into “people’s communes.” Forcing collectivization of agriculture and banning private farming, Mao and the CCP believed grain yields would surge, allowing labor to move from farming entirely. The program was so successful that only 15 to 55 million Chinese starved to death in the man-made famine. Vision.

While China’s farmers collectively starved to death, its neighbors Taiwan, Singapore, Hong Kong and South Korea were in the midst of a three-decade industrialization boom following World War II. These internal, agrarian societies urbanized thanks to the U.S. shifting its manufacturing base to cheaper labor, first manufacturing textiles and later toys, appliances, cars, trucks, electronics, computers, semiconductors and cell phones. The U.S. had earlier urbanized its own work force following the Industrial Revolution.

Eventually, as more and more nations industrialized, standards of living rose, making labor more expensive. Lower-end manufacturing invariably chases the lowest-cost labor. Industrialization combines to push birth rates downward but also to extend life expectancies, leading to very old populations over not many generations.

When societies industrialize, two distinct demographic consequences develop. Urbanization leads to lower mortality as working conditions and better health and medicine quickly extend life expectancies. At the same time, birth rates plummet because fewer “free” workers are needed in the fields. Economics of more discretionary income leads to more “taking care of me” and no necessity for expensive mouths to feed when they contribute nothing to the household bottom line. Call it a Millennial mindset before we had Millennials. As Toby Keith sang, “I wanna talk about me.”

Lower mortality increases population by such a large and sudden degree that it way more than offsets any negative impact on population from declining birth rates. This phenomenon lasts just a few decades as populations ultimately become much larger but with fewer children as a proportion of the population. A

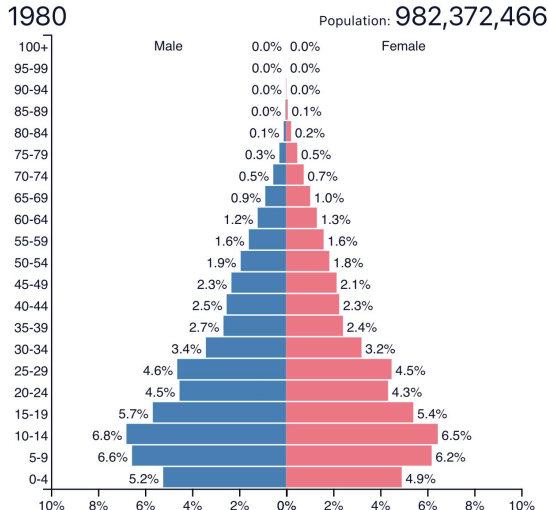
generation or two of few children eventually leads to not enough young workers and ultimately to not enough mature, high-earning workers.

Most of the industrial world had already experienced this demographic growth of an aging population that eventually becomes top-heavy with retired dependents and devoid of young labor. China was late to the industrialization party but ready for another great leap forward, this time one that wouldn't kill off everyone, at least not suddenly.

Enter Nixon and Kissinger and the Sleeping Giant awakened. Following Nixon's 1972 visit, China began industrializing in 1980. They had a front-row seat watching Singapore President Lee Kuan Yew successfully industrialize his island with authoritarian capitalism. China's population at the time was about 1 billion, up from 863 million in 1972 and double where it stood after World War II. Relative to today's 8 billion world population, 1 billion Chinese sounds like a big number. It was an even bigger number in 1980 when fewer than 5 billion of us roamed the planet. If you have ever seen images of (or attended) a CCP National Congress, you know there are a lot of them on hand. Of 96.7 million loyal party members in 2022, fully 2,296 were elected as delegates. It is likely that in the entire history of the Chinese Communist Party, not one delegate or member of the Politburo or its Standing Committee ever studied demographics. Had a demographer *been* on hand, those responsible for policy might have understood that industrialization and urbanization would lead to longevity and lower birth rates. Instead, the CCP was apparently more familiar with Thomas Malthus and his 1798 *An Essay on the Principle of Population*. When your fast-growing population reaches 1 billion, you might buy the notion that population growth is exponential while food supply growth is not. Indeed, the "visionaries" went all in on Malthus.

The average Chinese mother at the time of Nixon's visit had 4.6 children, similar to other nations before they industrialized and aged. The birth rate had naturally collapsed during 1958-1962's Great Leap Forward when

China ▼
1980



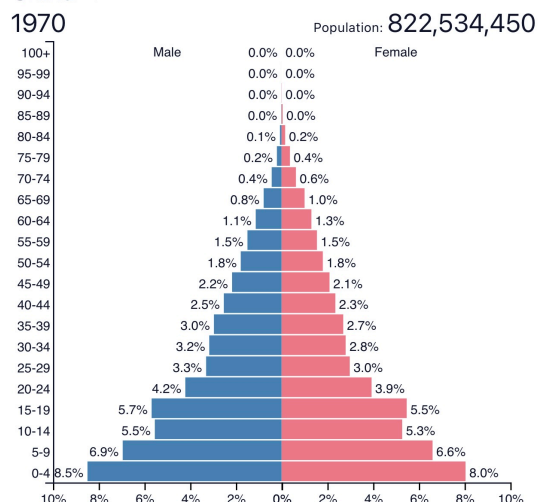
everyone starved, denting the number of babies born over the half

decade. Still agrarian, moms and dads quickly went to work and produced more free labor, spiking the birth rate for a few years, which then trended back down after full litters were underfoot.

The CCP should have known that being later to industrialize than most, urbanization would come faster, and with it, faster declines in birth rates. Instead, fearing another food shortage, China introduced their own version of wage and price controls, though in their case neither wages nor prices but babies. Perhaps more gruesome than the Great Leap, the CCP launched their

Malthusian one-child policy in 1980 just as the economy and society would sprint forward to catch up with the rest of the industrial world.

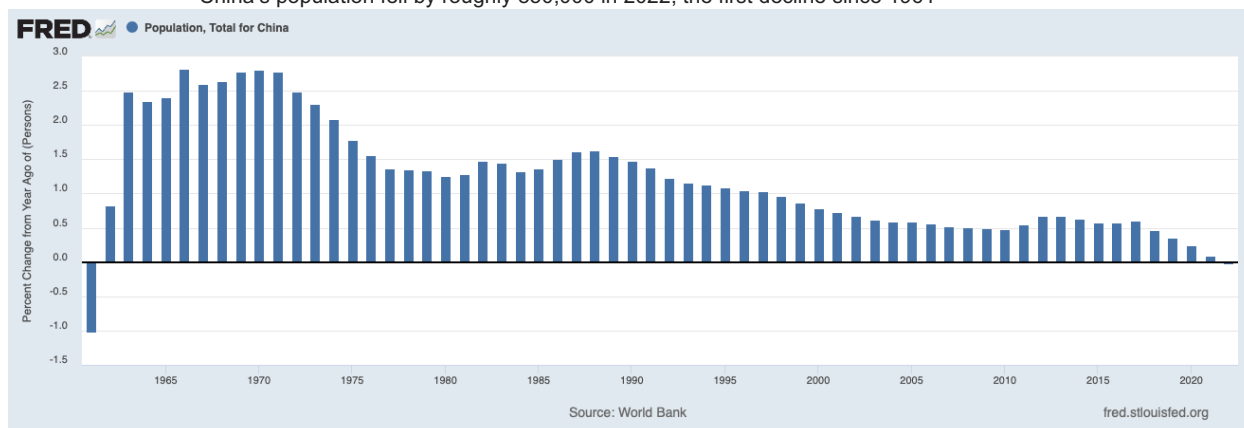
China ▼
1970



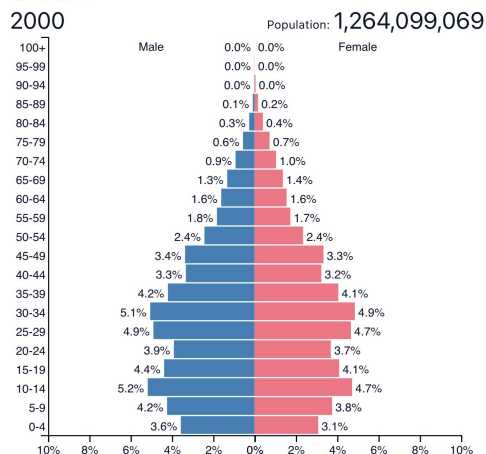
China's one-child policy made having more than one baby per household illegal. In doing so in a male-dominated society, the policy encouraged abortions of baby girls. The policy eviscerated the necessary younger generations that would eventually be needed to feed the retiring aged years later. China thus limited the birth rate to half or less of the rate needed to replace the population, eliminating a new generation. Combine a population explosion of one generation with a subsequent naturally declining birth rate and you create today's demographic nightmare.

A predictable outcome, the present Chinese population is now too old to repopulate. Even if they did want to repopulate, and they finally do, there aren't enough women of child-bearing age to do so. There are too few young adults in their 20s (the ones that make babies). The one-child policy was finally repealed in 2016 in a statement issued by the CCP, "to improve the balanced development of population" – an apparent reference to the country's dearth of women. Given the imbalance of men over women, the "bride price" persists, ranging between 10,000 and one million yuan (US\$139,000).

China's population fell by roughly 850,000 in 2022, the first decline since 1961



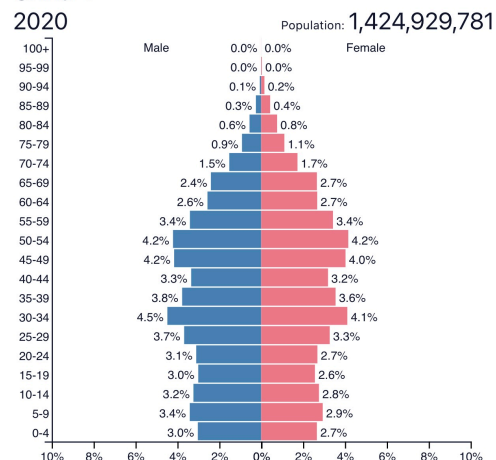
China ▼ 2000



The Chinese government formally expected that the elimination of the policy would lead to an increase in births to about 21.9 million in 2018. Instead they got 15.2 million – the lowest birth rate since 1961 (leap, remember). The government relaxed restrictions even more in May 2021, allowing women up to three children. It seems the visionaries realized the peril of a declining birth rate colliding with population growth. All restrictions were lifted two months later in July 2021 when the CCP finally realized the body count

was shrinking and not coming back. Chinese couples are now encouraged to have any number of children. Births rose for the next two years but then rolled over and began a more severe decline. The problem is Chinese couples don't want children now. Births hit another record low of 9.56 million in 2022, the first time the number dipped below 10 million since the late 1940s.

China ▼ 2020

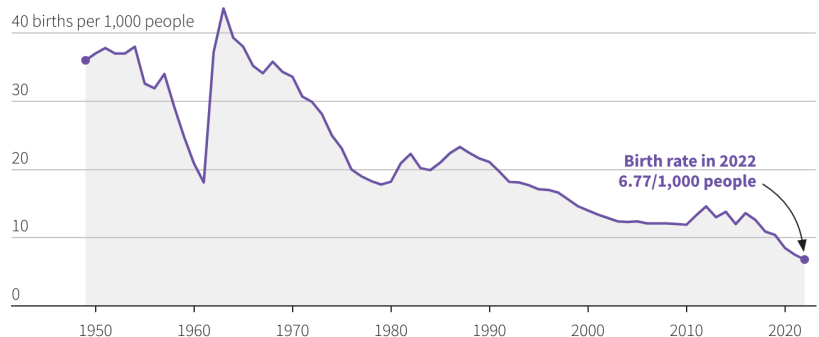


Male youth unemployment exacerbates the problem. Women don't like slackers so don't marry. Those that find a gainfully employed young man and do marry don't want the family part. Couples may have sex in the cities but they draw the line at babies. Birthrates in Shanghai and Beijing are the lowest in the world.

Fun fact: Just now, in January 2024, China resumed publication of youth unemployment data after six months of suspension. The new data is calculated using an "improved new statistical methodology." That's code for *everything we have ever reported, and everything we will report, is a lie*. The new rate is 14.9%, down from 21.3% six months earlier. Amazing. A fair assumption that youth unemployment in China is *way higher* than 21.3% and likely exceeds the 24.9% U.S. unemployment rate experienced in 1932 at the depths of the Great Depression. Charlie Munger referred to profitability

Lowest birth rate on record

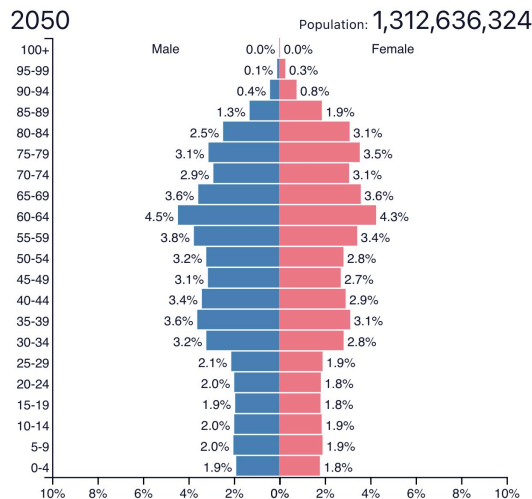
China's annual birth rate continued its decline in 2022 and fell to its lowest since 1949.



Source: Refinitiv Datastream | Reuters, Jan. 17, 2023 | By Sumanta Sen

measured using EBITDA as "bullshit earnings." Observers of official Chinese economic releases understand the meaning of bullshit data.

China ▼ 2050



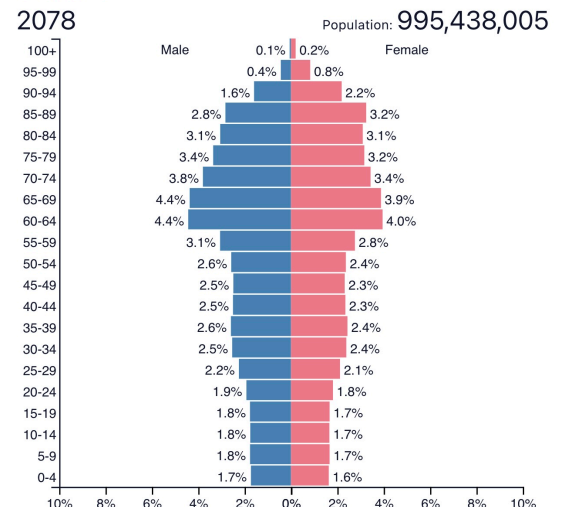
cause an even faster collapse on the back end. The back end is now. How bad will it get? According to the United Nations, China's population peaked in 2021 at 1.453 billion and has now declined in each of the last three years at an increasing rate.

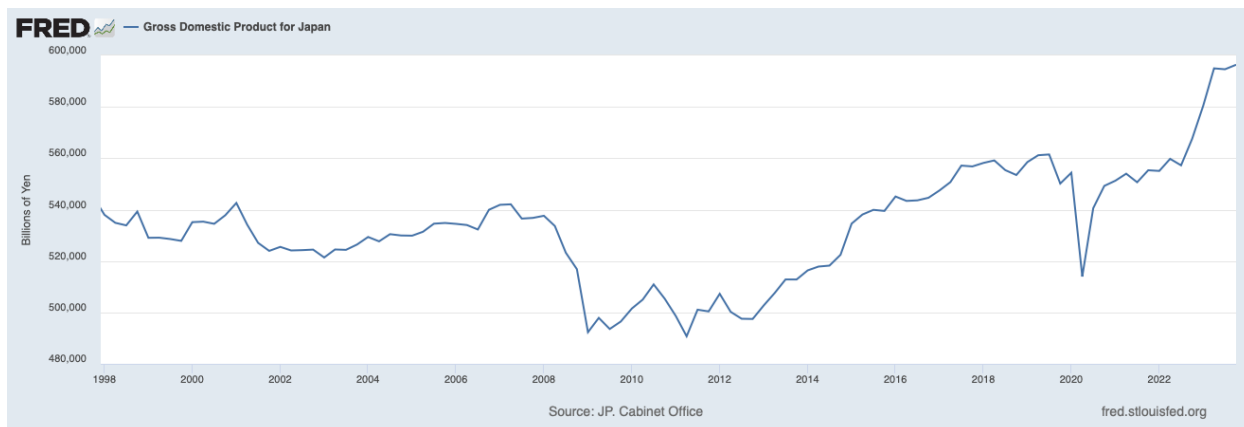
Using China-friendly UN projections (see the nearby blue and red-shaded, incredibly useful population pyramids which can be found for all countries and the world at populationpyramid.net), the population will shrink to 1.3 billion by 2050, below 1 billion in 2078 and to half of peak at the turn of the next century, 76 years from now. China's important working-age population (the ones who earn incomes that are consumed and pay taxes) peaked in 2011 and is expected to decline by 25% by 2050. Some private sector analyses (PS, not BS) suggest the population may shrink to 1 billion as early as 2050 and halve by 2070. Regardless, there is nothing the CCP, or families more importantly, can do to reverse the trend.

According to always rosy census data, the average woman now has 1.2 children over her lifetime, down from 4.6 in 1972. It appears the trend is toward soon being able to say the average woman has one child (you don't say *one children*). To replace a population requires 2.1 children from the womb of the average woman. In 2023, there will have likely been about 7.5 million marriages, the tenth year of falling numbers and lowest level in two decades. Toby Keith also sang, "gotta get you some...babies."

China is running out of young adults. Fast growth in population and fast growth in GDP

China ▼ 2078



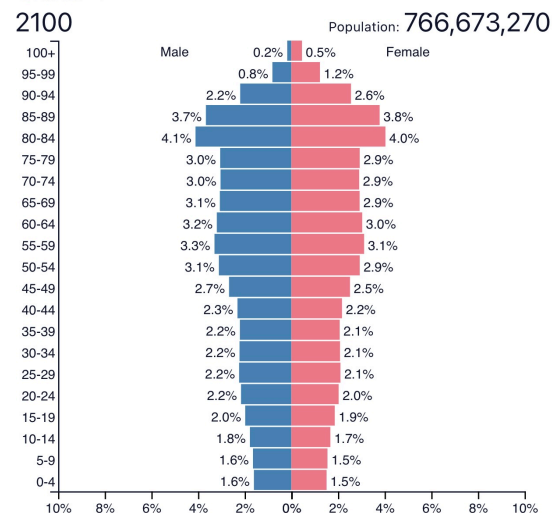


In isolation, a shrinking population may not be such a bad thing. Japan's has been in decline since 2009 (down 4.3% to 2023), twenty years after the 1989 peak in its real estate, economic and stock market bubbles. That Japan's GDP is unchanged for a third of a century is another thing (GDP did grow 25%, 0.95% per year, in real terms thanks to deflation – banzai!). Despite a shrinking population and what were overbuilt major sectors of their economy, Japan at least drifted sideways by moving low-wage jobs offshore and retaining skilled, high-paying jobs at home. As we will see with China, Japan kicked their demographic can down the road by using massive government debt to support consumption and asset markets (though the Nikkei remains below its 1989 high 35 years later – ALERT – CORRECTION – AT POST TIME THE NIKKEI JUST MADE A NEW HIGH). Japan held the titles for oldest and fastest aging population in the world but was passed by China on both in 2020.

The problem with China's imploding population is several-fold. One, it's occurring at the moment China's property and infrastructure are severely overbuilt and now in decline. Two, the overbuilt property and real estate is debt financed to an incredibly high degree not known outside of China (which says a lot, given the debt bubble we all dance on globally). Three, China is the largest importer of nearly all industrial commodities so a stopped economy will have a profound impact on certain countries, industries and companies. The largest global growth engine just hit the wall.

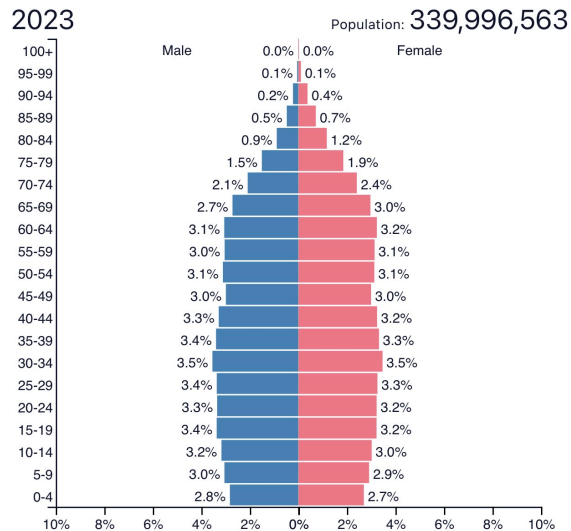
China is not alone with population issues, though with 18% of both world population and GDP and their role in global trade, their dramatic departure from global growth will reverberate. Much of the world has a baby boom generation, those born following World War II through 1965. The boomers are retiring worldwide. Now. In addition to China, mass retirements are underway in Japan, Germany, Italy, the Netherlands, Belgium, Austria, Russia, South Korea and Canada. Not one of these countries has enough young people to offset population decline. Germany is kaputt. Russia's death rate doubled in the decade to 1995 while its birthrate halved. South Korea is 20 years behind Japan, aging rapidly and has no chance to avoid population collapse.

China ▼ 2100



United States of America ▼

2023



The U.S. is in the best demographic position to avoid population collapse and enjoys myriad other advantages. Demographically, my generation born after 1965 is smaller than the Baby Boomers (oddly, some of my fans on what was Twitter, but now named for my generation, reply to my insights with various versions of, “O.K., Boomer,” either not recognizing my obvious youth or knowing one of my many nicknames – I get fewer of these lately – I wonder if Tesla being down 60% has anything to do with that...). Because my Generation X is small we have a small generation of kids, Generation Z. Between X and Z are the beloved Millennials. They are a *large* generation because their Boomer parents were a *huge* generation and had kids, where much of the world’s Boomers did not. Because of the sheer number of millennials, sigh, the U.S. already has a working plug for retiring Boomers. When (or if) the Millennials (sigh) move out

of their parents’ basements to the suburbs and produce the next large generation, the demographic picture just gets better. And like it or not, we have net immigration with those arriving wanting work and working. Many illegal immigrants now arrive from Central America and not Mexico. That flow will slow as their home countries require and can provide jobs with good wages. So it’s up to the Millennials to sustain the U.S. advantage (sigh). Despite a low birth rate and our retiring Boomers, the U.S. proportion of the world’s population is likely to grow over the coming decades.

The U.S. enjoys further advantages in self-sustaining oil and gas resources (largest oil producer in the world), largest arable land in the world (with more yet unfarmed), lowest unsubsidized electricity costs in the world, geographical advantage for solar and wind, bordered by two vast oceans and by two friendly allies, and world-class education.

Many suggest the developing world of Latin America, the Middle East and Africa have young populations so are in very good shape. That they have young populations is true. However, these societies generally are very poor, have little educational opportunity, little or no middle class and export commodities.

The industrial world’s baby boom generations are all retiring in the 2020s and 2030s, but largely during a five-year window that we happen to be in the middle of right now. Consumption is likely to weaken dramatically. Capital will be diverted from productive investment to income, raising the cost of capital as the generation ages further. Retirees *consume capital*. Fewer high-income workers translates to lower tax revenues and thus higher budget deficits.

Where the U.S. sits in the best demographic position, China’s population will halve. Whether the halving takes place between 2050 and 2070 or not until the turn of the century will dictate the degree of hardship exported to the rest of the world and how soon. From 1980, when China barreled down the path of industrialization, its population grew by 500 million over the next 40 years. The gains were not from birthrate but from a dramatic slowing of the deathrate. As many of those who moved to the cities (500 million since the mid-1990s), often illegally, now find no employment and live in squalor, some will return to the farms. It is not inconceivable that the deathrate accelerates not just among the large pool of aged but from an inability to feed the population, particularly in China’s interior and north. Vision, remember. China’s demographic problems are exacerbated by a huge burden of debt.

Debt-Financed Property and Infrastructure Bubbles

China's demographic collapse is a slow-rolling train colliding with property and infrastructure bubbles already popping. China's property sector is the largest asset class in the world. The housing market alone is four times the size of GDP, or over \$70 trillion against \$18 trillion. In the U.S. the housing stock is roughly 1.5 times the size of GDP. Japan is just over 2x. Two-thirds of China's household wealth sits in residential real estate. Nearly all property and infrastructure in China are financed with extreme leverage. China's economic mission was never growing exports or consumption. It's entirely been about moving people from the farms to the cities and industrialization with zero regard for the economic merit of building the next housing development, or highway, or vacant city. With the population now sliding ever downward, pushing debts ever into the future becomes an impossibility. The rapid decline of the overall population means a rapid decline of the home-buying population. Throw in lower household formation and the real estate sector is toast. The population of home-buying age peaked at 220 million in 2017. It's now 190 million and ten years from now will be halved from 2017's peak. It's just like banking (quite a bit of it is banking). As long as new loans rise faster than bad loans, insolvency is never obvious. It's only when the tide of credit slows and goes out do you find out who's been swimming naked. Turns out it's a nudist colony. It ain't just the emperor with no clothes.

Just how much debt exists in China? According to the Bank for International Settlements, total credit to the non-financial sector was \$58 trillion, 308% of GDP in 2023's second quarter. The figure was 139% in 2008. An additional \$11 trillion of hidden off-balance-sheet debt exists at city and provincial governments. This additional debt is in the form of local government financing vehicles (LGFVs), essentially notes held by commercial banks who in turn extend a like amount of credit to the local government who finances infrastructure such as roads and bridges. This off-balance-sheet debt is not included in official debt tallies. Where official local debt is one-third of GDP, or about \$6 trillion, the additional \$11 trillion amounts to an additional 61% of GDP, making total non-financial debt 369% (likely higher as of December 31) of an economy losing half of its population. The banks then sell a portion of these LGFV off-balance-sheet liabilities to households as retail investment products with high yields.

Local city and provincial sources of funds over the past decade have been roughly equally split between general revenue (taxes), subsidies and transfers from Beijing, and land sales. When China's population peaked in 2021, revenues from these funding sources totaled \$37 trillion, including almost \$9 trillion from land sales. Shrinking population and rising large defaults in the property sector led to land sales plummeting to \$6.7 trillion in 2022. The figure will likely be \$4 trillion for 2023, a 56% decline in two years and a 13.5% hit to local government revenue. As household incomes shrink, tax revenues shrink. Local government finance is in a severe crisis. Banks and unwitting retail investors are creditors of debt that the national government does not acknowledge. Oh, and the buyers of these land and rights-of-use sales? Property developers (think Evergrande). Fully fifty property developers failed in 2023. Evergrande was liquidated this week with more than \$300 billion owed to banks and bondholders, including \$25 billion to foreign creditors. Assets were reported as \$240 billion. What do you suppose the clearing rate is when collateral properties hit the market for sale?

Chinese investors are substantial owners of commercial real estate all over the world. They were on a frenzied spending spree over more than a decade, doing deals in part to get capital out of China. We'll find out but the best bet would be zero equity exists under much of this property. Investors have barely marked down carrying values. This would be global pensions, insurance companies, banks, university endowments. When asset sales pick up in earnest, valuations are coming down. Completed commercial real estate deals globally were the lowest in a decade in 2023. Of deals that hit the market, prices are at fractions of even recent acquisition prices. Properties seized from Chinese investors and property

developers that were sold recently fetched discounts ranging from 15% to 65% below prices paid just in the last two to five years. The Titanic hit the *tip* of the iceberg. And the band played on.

China's property sector commanded a quarter of all investment activity in China at its peak during 2021's first quarter at a 1.7 billion square meter annual clip. By year-end 2022 the figure was half and was then running at only 700 million square meters in October, down nearly 60% from 2021. Property investment in 2023 has declined by nearly 2% of China's roughly \$18 trillion GDP, a staggering figure.

Chinese spending is debt financed with no regard for repayment. It's debt at all costs. Every time the economy or an industry slows, the CCP ramps up new stimulus and spending programs. A collapsing China property sector will see the country paying for past growth for years to come. With a rapidly shrinking population, paying for past growth becomes an impossibility.

The world is racing from China. Net investment is negative. Manufacturing is moving out. The U.S. trade deficit with China is shrinking because the U.S. is importing way less from China. The debt bubble is precarious if China loses export markets and access to energy, raw materials and agriculture.

Income growth is anemic, the savings rate is high, and households are deleveraging. Mortgage and credit card loans grew by a peak 6 trillion yuan (over \$1 trillion) in 2016, steadily declined since then and is now negative. In 2023's third quarter, household credit card loans outstanding dropped by 130 billion yuan while mortgage loans were down 600 billion yuan. Consumption is far below levels required to meet CCP growth targets. Thus in October the federal government introduced a new one trillion yuan (\$150 billion) special treasury issuance to increase provincial government and corporate spending. Despite this, total government expenditures (central government and local) are *negative* for the first time by roughly 2% of GDP, matching the drop in property investment.

For perspective on how China's debt bubble grew to where it sits today, U.S. money supply (M2) grew from about half of GDP at the outset of the century to 89% during the pandemic. It has since retreated to 75%, so \$21 trillion relative to our \$27.9 trillion economy. China's GDP at \$18 trillion is about two-thirds the size of U.S. GDP but their \$42 trillion M2 is *double* that of the U.S. China's money supply is 2.3 times the size of their economy and grew nearly 3,000% since 2000. Now overlay a shrinking population and imploding property and infrastructure sectors. China's stock market is negative over the past 17 years and 50% below its 2007 peak. Negative equity returns over decades suggest an underlying lack of not only growth but a lack of profitability. Again, investment in China is not undertaken for economics. It was moving bodies to the cities and industrializing. Demographics in reverse and a capital stock financed with mountains of leverage leads to deflation. Nominal GDP growth in China is *lower* than real growth.

Expect ongoing increases in federal government debt-financed stimulus. Expect capital flight that already exceeds more than \$1 trillion each year (this was Chinese investments in global real estate). At a point expect capital controls. The industrial world is already feeling the impact of China's declining population and levered property prices. An awful lot of capital left China over the past two decades and found a home in commercial real estate, agricultural land and...homes. China will have to devalue its debt. The currency has no business in a near peg to the dollar (the official peg ended in 2005). When property is seized from defaulting Chinese investors, global banks and other creditors will dump collateral for whatever they can get. U.S. regional and European major banks are particularly exposed. Investors in financial and real estate companies and assets need to pay particular attention to capital structures and ownership. As China's population shrinks over time, longer-tail issues will impact nearly every corner of global industry.

Industry

Our earlier section on demographics may have implied that following Nixon's visit to China, the country immediately industrialized and ramped its economy to the second largest in the world in two generations. The path wasn't so abrupt. Some within the CCP found the 1958-1962 Great Leap Forward not so great and Mao faded from power for a few years. During his downtime he remade his image and spectacularly burst back on the scene in 1966, *Little Red Book* in hand—kinda like Moses with his tablets—and inspired a fun-loving cadre of students (calling their team the Red Guards) to spread the good word that capitalists and traditional elements from Chinese society had infiltrated society. The only great path forward (he learned by now to shun proper nouns) toward proper industrialization and urbanization was to help the misguided capitalists and traditionalists see the error of their ways. Another gem of an idea evolved, and over the next decade what became known as the Cultural Revolution killed another 40 million or so of the confused. Official government statistics peg the number of misfortunate dead at only 500,000 to 2 million. The good news here was people didn't starve and die slowly and hungry. They did their part for communism quickly. Nixon touched down in the middle of this period, but it was only after Mao died in 1978 that his successor, Deng Xiaoping, got around to real reform and opened up China in earnest, modeling China's industrialization on what Singapore had accomplished.

Whether under Mao or Deng, the population needed something in exchange for its willing repression. The government's purpose was to spend. And spend. And spend. The key to the hearts of the people was to give them jobs. Unlimited, debt-financed spending on infrastructure, industrial plant, transportation, and education and health systems. The key was growth in non-agrarian jobs. Zero concern for return *on* capital or even *of* capital allowed for thirty-plus years from 1980 to probably 2020 where the Chinese growth miracle was wildly successful. Spending for growth and jobs was all important.

The majority of China's growth since the turn of the century came not from exports or rising consumption but from overbuilt investment, be it infrastructure or real estate. China is a major net exporter of goods and services. That is until 2023. For the first three quarters of the past year China was a net *importer* of both goods and services, which will likely shave 0.5% of GDP in 2023.

Mercantilist China restricted imports of consumer goods and exported literally everything it could. The West exported its jobs and manufacturing to China, who maintained a closed economy for imports of finished goods. Manufacturers were welcome to put their capital in. Good luck getting your profits or your capital out if you want to use our labor. Turns out, the rest of the world wants the ball back. Capital *is* leaving China.

Between here and there, however, China replaced Japan, Taiwan and South Korea in the manufacture of *everything* for the planet at the bottom of the quality and value spectrum. The three "displaced" nations now make the high-end, value-added stuff – appliances, cars, machinery and semiconductors.

Urbanization and becoming the manufacturer for the world required a vast supply of industrial commodities with coal at the top of the list. China is the world's largest producer of coal and also its largest importer (coal is required for the electricity and heat needed to build internal infrastructure and to manufacture goods for the world). China smelts aluminum for the world. They refine iron ore to make low-quality steel for the world. Using coal for electricity, they make high-cost caustic soda and chlorine for plastics, and epoxy resins for the world. China makes anything requiring burning huge amounts of coal for its heat or that requires dirty processes that pollute the environment for its output. The green world interestingly averts their collective gaze as China makes solar panels and refines cobalt for electric vehicle batteries. China imports more industrial commodities for processing, and exports more finished materials, than any nation on mother earth. It is the world's largest importer of iron ore and bauxite and

the largest exporter of cement, steel and aluminum because it produces more than it can use internally. Now that internal demand will suffer as the population shrinks.

China absorbs the world's commodities to ensure the raw materials supply for its infrastructure and property development. With the use of increasing debt, China buys all of the iron ore, copper, oil and cement it can, using what it needs and dumping any surplus on global markets. If shortages of raw materials surface, they simply crank out more and more money to ensure secure supply of what they need. Eventually, once population growth slowed and is now in decline, China's internal need for what it refines and processes is likewise in decline or will do so shortly.

Manufacturing in China is falling as a percentage of GDP since 2006, which was likely peak productivity. Yet the spigot of labor from the interior continued to blast the coast. Following manufacturing's peak, several hundred million continued their migration. Probably 300-400 million made their way to cities that no longer needed their labor. A large proportion of those migrating did so illegally. These poor souls did not and will not join the middle class. They will not stimulate consumption. Export revenues did not go to workers. Now the older coastal population lives in expensive urban cities and have no money. Money may not buy happiness, but living illegally in slums and working grueling hours if you can find a job doesn't induce joy. The interior of China is gutted and receives federal support to build infrastructure with no utility. See LGFVs above.

Seven years after manufacturing's 2006 peak, China announced a new brainchild, the Belt and Road Initiative. Sold to the 155 nations that signed on, it was to be the development of new trade routes connecting China with the rest of the world. It encouraged the building of railways, airports, power plants, ports and roads. The world opened its checkbook and invested in infrastructure. The initiative included a third of global trade and over 60% of the world's population. Where prior initiatives like the Great Leap and Cultural Revolution killed lots of Chinese, to date nobody has died from the initiative. Without getting too far down the rabbit hole, whenever you read or hear about Belt and Road, ask whether the program was really sold as cover for China dumping surpluses on everyone else. The world invested and ramped up for perpetual growth in China and in global consumption. Instead, global consumption likely peaked in 2019, before the pandemic. Auto sales in China peaked in 2018. Tesla opened its Shanghai plant in 2019. Maybe China does have vision after all.

What happens as Chinese manufacturing and consumption continue their descent? The property market is already feeling the pinch of oversupply. Second-order effects will spread to commodities. China's role as the importer and exporter of last resort will fade. Some will benefit from the fade and some will lose. At bottom, growth in global GDP per capita is surely to be weaker than its already diminished cadence since global total credit market debt reached dangerous levels in 2000.

Industrial Commodities

China has been the globe's importer of nearly every industrial commodity. As the population recedes over the coming decades, China has little need to further urbanize, slowly killing the internal need for much of what is imported. Where China imports industrial commodities, they process them and use some of the finished material internally and dump the balance on the globe. They are generally the globe's high-cost producer due to high electricity costs but again, little is undertaken by China with a profit motive. Despite a resurgence in imports in 2023, declining internal demand will expose China's surplus processing capacity. Much of that capacity will ultimately be shuttered, forcing the rest of the world to increase capacity in places.

The demographic slide will not occur overnight. 2023 ended with China's import and use of industrial commodities at record highs. No doubt Covid lockdowns slowed economic activity from 2020 to 2022.

At midyear 2023 China's coal imports were up 89% over the prior year. China's imports of copper ore and concentrate in 2023 hit a record high of 27.54 million tons, up 9.1% from 2022. Iron ore imports rose 6.6% from 2022 to reach a record 1.18 billion tons. Imports of bauxite, a key raw material for aluminum, rose 12.9% to a record 141.4 million tons in 2023.

In addition to the industrial commodities that China must import as it lacks sufficient (or any native) reserves, the country has little of its own supply of oil or natural gas. It is largely reliant on imports. It does not have the military capability to secure it forcefully. In fact, China has no allies save perhaps Kim Jong Un and Dennis Rodman. Once China entered the global economy around 1980 and the cold war ended, global oil demand doubled. China consumes 14 million barrels of oil per day, importing 11.3 million of the total in 2023. As with copper, iron ore, bauxite and other commodities where China is the world's largest importer, it is also the globe's largest oil importer. 2023's volumes were likewise a record. Up until 2021, China's crude oil imports rose annually for two decades given the nation's growing economy. In 2021 and 2022, the country's crude oil imports were down with 2022 imports 0.9% lower than in 2021 with the pandemic lockdowns accounting for some of the decline. It is hard to expect 2023's resurgence to continue for long with the population in decline. In fact, the world is largely aware that China manufactures most of the world's solar panels because of the carbon-intensive and polluting intensity of their production. Lesser appreciated is that the Chinese are rapidly ramping up their own use of solar for energy, likely due to their reliance on imported oil and a push for self-sufficiency.

China increased imports of Russian oil and gas after Russia invaded Ukraine. Russia exports 1.8 million barrels of oil per day to China, more than 16% of China's imports. Total Russian production is 11 million barrels of oil per day and just over half is exported (total former Soviet space production including Russia is 15 million barrels of oil per day).

One might be surprised to see commodity imports back to records given the pain in the property sector, even with China recovering from the pandemic. My understanding is that despite vast vacancies and overbuilding, there are also a vast number of *unfinished* real estate developments. As many of these will never be occupied the coming unwind will be interesting. In the meantime, nearly all the backlog of unfinished developments are being completed, thus record levels of imports of commodities and oil in 2023. The rubber hits the road when these backlogs are exhausted.

China has *no* iron ore as a natural resource. It therefore imports 70% of seaborne iron ore, which is smelted to make steel and it internally consumes half of global supply. It largely makes low-quality steel. It is the world's largest producer of steel and also one of the largest importers of high-quality steel. It is also the largest exporter of lower-quality steel. China's imports of iron ore, largely from Australia and Brazil (50% and 25% of global exports, respectively) peaked in 2020 at 1.17 billion metric tons and declined 5.5% by 2022 only to recover to records in 2023. China's role in the global steel industry will diminish over the coming years and decades with its population decline. Its importing needs will decline dramatically. China will likely eliminate smelting capacity as internal demand cascades downward. The world will likely face low-quality steel shortages due to falling Chinese exports. Because China mines none of its own iron ore, Australian and Brazilian ore sent to the rest of the world will require more smelting capacity outside of China. As the growth engine hits the wall, China's use of iron ore disappears. They are half of global consumption.

Bauxite is strip-mined and 90% of it is processed to make aluminum. China mined all of its high-quality bauxite reserves. What little is left is low quality, which requires more filtering and more power to produce much less end product per ton of ore. China is thus a huge importer of bauxite. It imports 70% of all internationally traded bauxite and smelts 60% of all aluminum! The majority of Chinese aluminum output is dumped at a loss (to the Chinese) on global markets. When China fully realizes its growth is over, it will kill its smelting capacity which will lead to global shortages of aluminum. Like iron ore, the

world will likely require more smelting capacity outside of China, perhaps an investment opportunity. Australia, Brazil, India and Guinea mine almost half of all bauxite consumed by the world. Electricity is 40% of the cost component of making aluminum.

China uses copper metal and ore. China imports more than half of the world's copper ore and concentrates, a record 27.5 million tons in 2023, up 19% from 2021. Ten of the globe's largest twenty copper smelters are in China. 75% of mined copper is used in electronics and wire, with the balance used in construction. Beating a dead horse, when construction slows and abates, Chinese demand will collapse.

Beyond the largest of these base industrial commodities discussed above, China is the globe's largest importer and processor of cobalt and lithium (think batteries for electric vehicles), nickel (for stainless steel), silicon (solar panels and semiconductors) and rare earth metals (screens for smart phones, computers and flat-panel TVs; computer drives; EV batteries of course and new-generation light bulbs). Like the other minerals discussed, China has little in the way of natural resources. The processes for manufacturing end products are enormous pollutants. As China slows and the industrial west moves manufacturing away from China (recall their lack of friends), the planet will either be hostage to China for processing or move it elsewhere. The blind eye of the extreme green movement will be forced to look inward. Opportunity exists if and when processing capacity outside of China is needed. Where rule of law exists, such capacity stands to be cleaner than in China.

Taiwan and China's Military

Chinese fascism worked over the past forty years because the world wanted its cheap labor but the world is growing tired of its nationalism and the standards by which it behaves. Technological theft? Industrial espionage? Coal as your primary source of electricity? No problem until now. Chinese consumption will decline over time with its population. Its export markets are already shrinking as the industrial world moves inward. Note the push to increase semiconductor capacity outside of China. The gameboard is shifting and the question must be asked whether China flexes its military capacity against the West and at a point attempts to take Taiwan. The short answer in terms of action against the U.S. or the West is most likely close to 100% no. Despite a military with 2.8 million soldiers, twice the U.S. military, China's ability to project power is incredibly small. They lack the equipment such as trucks and engineering facilities to move a large army across land. They spend a quarter of what the U.S. spends on military despite a force twice the size. Their navy, despite three carriers (only two fully operational), 60 submarines (only a handful of Russian built that are capable of fighting) and 50 large surface military vessels, cannot project power much further than Chinese territorial waters. China can't even secure its own ocean trade lines in the Pacific theatre.

China has built and strengthened naval facilities in the Spratley Islands in the South China Sea and on man-made archipelagos. This is a flex, however. Big hat. No cattle. They are hostile with their Asian neighbors. China hates Japan and vice versa. Japan's navy is much more powerful.

As China's population shrinks and their participation in global trade diminishes, they may move to take Taiwan. However, an invasion would require moving hundreds of thousands of troops by sea and taking on a local fighting force of several hundred thousand in terrain wholly unsuitable for an attacking force. And the Taiwanese defense has been preparing itself for decades. A blockade is conceivable, but if the U.S. and NATO come to the aid of Taiwan the Chinese military has little chance of surviving. They can strike targets across all of Taiwan with missiles. The region would likely come to Taiwan's aid and China could likewise strike targets throughout Southeast Asia. In addition to Taiwan, China can strike portions of Japan and most of South Korea.

In the event China would conduct a military campaign against Taiwan or elsewhere in Southeast Asia, they essentially seal their demographic fate even sooner. Per our discussion about China's lack of raw materials and industrial commodities, being anything but self-sufficient, the region and world can essentially remove China from global trade. The outcome would make the Great Leap Forward look like child's play.

Summary

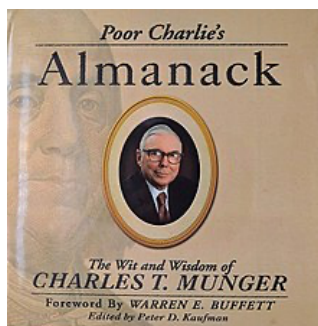
A shrinking Chinese population is a certainty. There is nothing the CCP or Chinese population can do about their demographic situation. The economy is massively overbuilt, particularly the property sector and infrastructure. Debt is a bigger problem in China than anywhere in the world, the problem exacerbated by surplus capacity of nearly everything. The stock market reflects China's problems. Its lack of profit motive wasn't the problem it is today when the country industrialized and grew rapidly. With more than 17% of the world population set to shrink by half over the coming decades, global trade will be forever altered. Leverage and poor demographics plague much of the industrial world, but not to the degree they do in China. Opportunities exist for the rest of the world to reallocate resources and things like smelting capacity of various ores. The U.S. happens to be in the best relative position, but no corner of the world will be spared the ramifications of China's growth miracle in reverse. The largest importer of almost every raw material, and the world's manufacturer is coming undone. We have dedicated lots of time and thought about how our portfolio companies are situated to deal with a China in decline. Overall global growth is certain to be lower, but anytime disruption appears so too does opportunity. The next four decades of China forfeiting much of what it gained over the prior four will certainly be interesting. We are not macro strategists at all but we know that China presents as great or a greater threat as does the debt bubble we are all perched upon. Unfortunately for China, like Juan Ponce de León, there is no fountain of youth.

WORLDLY WISDOM

"In my whole life, I have known no wise people (over a broad subject matter area) who didn't read all the time--none, zero. You'd be amazed at how much Warren reads--and at how much I read. My children laugh at me. They think I'm a book with a couple of legs sticking out.

I am a biography nut myself. And I think when you're trying to teach the great concepts that work, it helps to tie them into the lives and personalities of the people who developed them. I think you learn economics better if you make Adam Smith your friend. That sounds funny, making friends among the eminent dead, but if you go through life making friends with the eminent dead who had the right ideas, I think it will work better in life and work better in education. It's way better than just being given the basic concepts." – Charlie Munger

If you take nothing else away from this year's letter, take Charlie's advice to make friends with the eminent dead. In this case make friends with Charlie. I've gotten to know Peter Kaufman and think the world of him. He was one of Charlie's best friends. At a point in the pandemic when much of the world was still locked down, and California was very much so, I was touring one of Peter's new Glenair assembly facilities and asked how Charlie was doing being isolated. The pandemic was so bad for so many. Peter lit up and explained how Charlie was better than ever, that the pandemic was *great* for him. Instead of sitting in his office, reading alone all day and brooding, he had taken up Zoom calls. He was in the game, more engaged, learning, teaching. Those last two, learning and teaching, will be the things Charlie remains known for centuries from now. Peter further noted that through all the new interactions, Charlie was becoming kinder. If you read the opening quote to the letter or knew Charlie years ago, you'll know what I mean. But kinder? Old people don't do that. Charlie did. The wise ones are adaptable and can change. Charlie was the wisest for his century.



I bring up Peter because if you want to get to know Charlie, you can't do it properly without reading *Poor Charlie's Almanack*. Peter assembled the first edition of a brilliant collection of all things Charlie in 2005, modeled of course on Charlie's hero Ben Franklin's *Poor Richard's Almanack*. The giant book contains ten talks Charlie is famous for having given, my favorite being, *A Lesson on Elementary Worldly Wisdom as It Relates to Investment Management & Business* given at USC's Marshall Business School in 1994. You can find an audio recording of the speech online as well. The book is full of Mungerisms, stories from friends, media articles and editorials. Get the book.

From my first Berkshire annual meeting in 2000, I always wondered why the very closed meeting was being elaborately video recorded. Years later, Warren donated the videos to CNBC who created a fabulous archive of all of the



Berkshire Hathaway Annual Shareholder Meetings (since 1994)

By Berkshire Hathaway Annual Shareholder Meetings (since 1994)

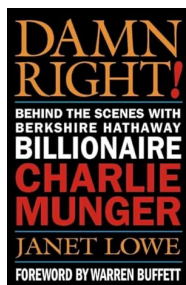
meetings from 1994 forward. If you really want to know Charlie, listen to or watch he and Warren firsthand over nearly three decades. The website also has transcripts of the meetings. If you don't know already, listening to Charlie will not only make you wiser, it will also bring joy to your life. You can also listen to the meetings from 1994 forward on a podcast copyrighted by Berkshire.

The definitive collection **Buffett in his own words**

SEE IT NOW ON THE ARCHIVE:
Charlie Munger's Final CNBC Interview
Expanded Version

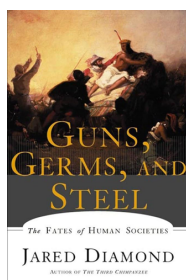
The Warren Buffett Archive is the world's largest collection of Buffett speaking about business, investing, money and life.

- 30 full Berkshire Hathaway annual meetings, going back to 1994, with a highlight reel for each year
- 140 hours of searchable video, synchronized to 3000 pages of transcripts
- 520 video clips covering scores of subjects
- CNBC interviews, a Buffett Timeline, and a Berkshire Portfolio Tracker



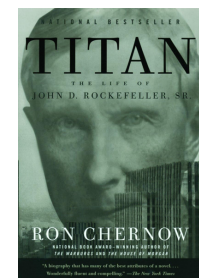
Numerous books about Charlie are available. I haven't read them all. The two I'd recommend that I thoroughly enjoyed are *Damn Right: Behind the Scenes with Berkshire Hathaway Billionaire Charlie Munger* by Janet Lowe and *Charlie Munger: The Complete Investor* by Tren Griffin.

Finally, Charlie was a voracious reader and often recommended books. You won't have to look far to find any number of books that he's recommended over the years. Of the ones I've read and really found useful are as follows:



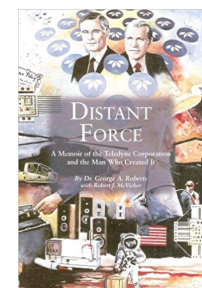
Guns, Germs and Steel: The Fates of Human Societies by Jared Diamond. This is an insightful read on the pace at which societies develop and why.

Influence: The Psychology of Persuasion by Robert B. Cialdini. This has been one of the most useful books I've ever read. If you ever find yourself in Rome arguing over a wine bait and switch with the restaurant's baiter and switcher owner, this is the book you need to resolve any negotiation amicably and favorably.



Titan: The Life of John D. Rockefeller, Sr. by Ron Chernow. I've recommended this biography before. Charlie loved biographies and Chernow is one of the best. I love the period of the American Revolution and Founding of the U.S. I won't list them here but encourage you to read every Chernow biography. I started his biography of Ulysses S. Grant over the holidays and then got sidetracked on some crazy letter project.

F.I.A.S.C.O.: The Inside Story of a Wall Street Trader by Frank Partnoy. Another great writer and great read.

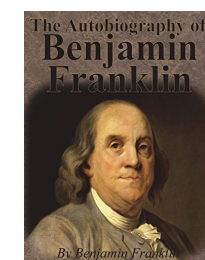
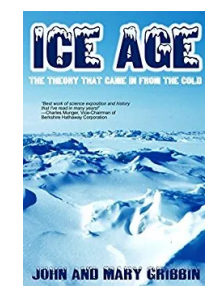
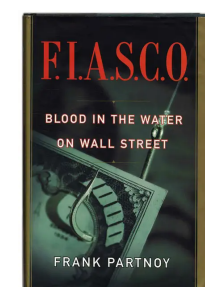
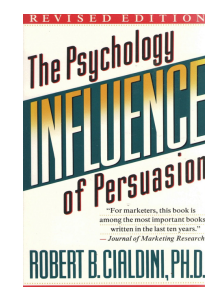
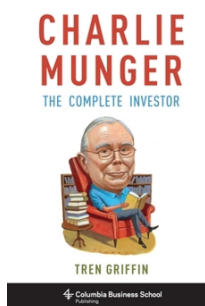


Ice Age by John and Mary Gribbin. Charlie said of the book, "It's the best work of science exposition and history that I've read in many years." It's a fantastic read.

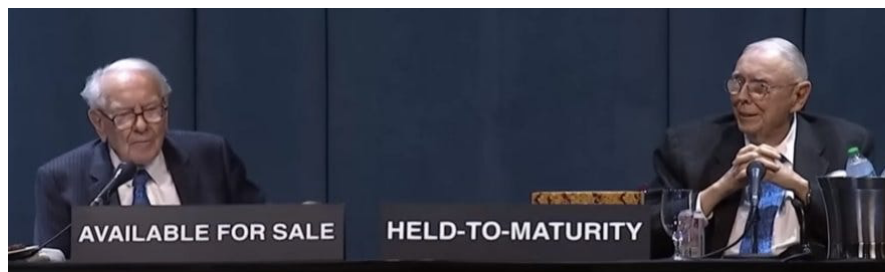
Distant Force: "A Memoir of the Teledyne Corporation and the Man Who Created It." This is a great history of Henry Singleton and the conglomerate, Teledyne. Singleton knew the value of his own company and stock. I've recommended this several times as well.

The Autobiography of Benjamin Franklin. I read this for the first time when I was probably ten or 11. It was better as an adult! Franklin was Charlie's hero and for good reason.

The list I offered is far from complete. If you make a habit of listening to the old Berkshire annual meetings, watching them on the CNBC archives or reading the transcripts, just take note every time Charlie recommends a book. I'll add this. I buy books at about the rate of three for every book I read. I recently heard Charlie say that he often does not finish a book. I've always been of the catechism that if you start a book you finish it, just like finishing your vegetables before leaving the table. What a revelation and relief. You get to the age where you worry about never getting to the books you own. Thanks to the wisdom of Charlie, if I get another 44 years to my current 55, then by the time Charlie exited the stage I'll have gotten to far more books and hopefully be a little wiser for it.



BERKSHIRE HATHAWAY: THE FLAG AT HALF-STAFF



“Those of you who after we are gone sell your Berkshire stock and do something else with it, I think are going to do worse. So I would advise you to keep the faith.”

“I can’t give you a formulaic approach because I don’t use one. And I just mix all the

factors and if the gap between value and price is not attractive, I go on to something else. And sometimes it’s just quantitative. For instance, when was selling for 12- or 13-times earnings, I thought that was a ridiculously low value just because the competitive strength of the business was so great and it was so likely to keep doing better and better. But I can’t reduce that to a formula for you. I liked the cheap real estate, I liked the competitive position, I liked the personnel system – I liked everything about it. And I thought even though its three times book or whatever it was then, that it’s worth more. But that’s not a formula. If you want a formula, you should go back to graduate school. They’ll give you lots of formulas that won’t work.”

“You don’t have a lot of envy, you don’t have a lot of resentment, you don’t overspend your income, you stay cheerful in spite of your troubles. You deal with reliable people and you do what you’re supposed to do. And all these simple rules work so well to make your life better. And they’re so trite.” – Charlie Munger

The Year at Berkshire

Berkshire Hathaway’s “A” shares returned 15.8% in 2023. Berkshire is likely to report an 18.5% gain in book value on Saturday morning and thanks to repurchasing an estimated \$9.2 billion of its stock should see a 20.1% gain in book value per share. 2022’s 3.7% decline in book value per share was only the third loss in current management’s now 59 years on the job.

If our work is correct, Berkshire will be the first U.S. company to reach \$100 billion in annual profit and only the second globally to Saudi Aramco. The number will draw headlines if the milestone was indeed achieved in 2023. Ironically, Berkshire’s largest stock portfolio holding, Apple, reported \$97 billion in net income for fiscal year ended September 30, 2023. Apple later reported its first quarter results on February 1 and on an annualized basis earned \$100.9 billion. However, records are awarded based on *fiscal* years. If that weren’t the case then San Francisco would be world champs by virtue of overcoming a 17-point halftime deficit against the Lions in the NFC Championship and then leading the Chiefs by 7 when Usher took the stage for the Super Bowl halftime show.

Berkshire followers know to take reported results with a grain of salt. Since 2018, companies must report all changes in market values of investment securities, whether realized or unrealized, as gains or losses in the statement of earnings. Previously, only realized gains and losses were included in the income statement, while both realized and unrealized changes flowed through the balance sheet. Berkshire’s stock portfolio, largely held by its unparalleled, world-class insurance operation, likely earned a 24.1% total return during 2023, roughly \$75.6 billion in market value gain plus an additional \$5.2 billion of dividends. Whatever Berkshire *realizes* as capital gain, that portion of the \$75.6 billion plus the dividends would have hit the income statement in the “old days.” We expect \$5.4 billion in realized gain but that figure entirely depends on fourth-quarter activity. As it is, even if Berkshire *never* realizes capital gains on the preponderance of the stock portfolio, all changes in market value each quarter are now included in income and taxed for GAAP purposes (but not paid as cash taxes) on the income statement with the unrealized gain offset by a 21% federal tax rate deferred liability on the balance sheet.

As it is, Berkshire is likely to report \$125 billion in earnings before tax and \$100.4 billion in net income after accounting for the portion of profit owned by non-controlling interests. As far as headlines go, however, \$100 billion is \$100 billion is \$100 billion. Say that three times real fast, click your heels together three times and think, “There’s no place like Berkshire,” and you’ll be there. There being Omaha on May 4.

Far more important than short-term swings in stock prices is growth in intrinsic value per share and how Berkshire invests its capital. On both fronts 2023 was a good year. By Semper’s math, intrinsic value grew 11.3% and thanks to attractively priced share repurchases advanced 12.8% per A share to \$718,579, or \$479 per B share. Now here’s the headline: Berkshire’s intrinsic value grew to more than \$1 trillion for the first time, reaching an estimated \$1,035 billion using an average of Semper’s four valuation methods. Closing 2023 up 15.8% at \$542,626 on the A shares, the stock finished the year at 75% of intrinsic value, giving us 33% upside plus annual growth which should match Berkshire’s more than 10% return on unleveraged equity capital.

Capital allocation is Berkshire and Berkshire is capital allocation. We will explore the individual tools employed by Omaha in the next section. As a top note, 2023 was a quiet year, headlined with net sales of the common stock portfolio totaling an estimated \$26 billion, roughly 7.5% of the average value of the stock portfolio at yearend. Berkshire was a net buyer of \$34.3 billion in 2022. Randomly, roughly equal amounts around \$9 billion each was spent on share repurchases (\$9.3 billion), growth capital expenditures (\$9.1 billion) and acquisitions of businesses (\$8.6 billion). The outlay for business acquisitions were almost exclusively spent increasing partial ownership in a number of investees – Pilot Travel Services, the Cove Point LP LNG terminal, and BNSF converting a 60-year lease on Montana Rail Link to an owned entity. This is not the stuff of headline news, but regular blocking and tackling, ever growing Berkshire’s collection of assets slowly but surely.

Berkshire’s earning power per share grew 6.3% in 2023. It’s price to economic earnings rose from 13.0x to 14.2x, a 7.1% earnings yield. With a big gain during the year in the stock portfolio, book value (shareholder’s equity) likely rose 18.5% and 20.1% in per-share terms. Given book value per share growing a bit faster than the stock price, the stock price relative to book value declined from 142% to 137%. This of course does not necessarily make the stock more attractive than it was a year ago. Recall 2022’s slide in the stock portfolio which pulled book value downward (and presumably to a cheaper level). Often what appears cheaper or more expensive demands investigating the valuation of the underlying assets. The good news is despite an outsized 24.1% total return on the stock portfolio, Berkshire overall remains undervalued.

Of note, 2023 also marked the first time total firmwide assets exceeded \$1 trillion. Expect to see roughly \$1,070 billion in total assets on the balance sheet at yearend. Berkshire has more tangible assets than any non-bank company in the world. That’s an extraordinary thing given the company operates with net cash on the balance sheet, meaning it holds more cash than it has debt outstanding.

The impact of change in Berkshire’s investment portfolio can be seen in our expected results for 2023 and its final quarter in the table below. There are any number of variables which may lead to a lower (or higher) earnings figure. The most likely would be fourth quarter underwriting results materially higher or lower than the \$2 billion we project net of tax which would bring the yearly tally to roughly \$6.5 billion. What a difference a year makes versus last year when the insurance group posted a small underwriting loss and GEICO lost \$1.9 billion. Price and improved operations have turned the auto insurer on a dime with more room to improve. We are very much looking forward to hearing what Ajit has to say in May about GEICO. More on insurance later in the letter.

Expected 2023 Fourth Quarter and Full Year Results

(In millions of USD)	First 9 months	SAI Q4 Est.	SAI 2022 Est.
Change in Investment Portfolio (Ex KHC/OXY) *	\$38,041	\$37,581	\$75,622
Derivative Contract gains (losses)	0	0	0
Operating Earnings Before Tax (Incl Equity Method)	35,187	14,168	49,355
Earnings Before Tax	73,228	51,749	124,977
GAAP Income Tax	13,839	9,781	23,621
Effective Tax Rate	18.9%	18.9%	18.9%
Net Income	59,389	41,968	101,357
Earnings Attributable to Noncontrolling Interests	740	200	940
Net Income Attributable to BRK Shareholders #	\$58,649	\$41,768	\$100,417

*Includes gain/loss on fixed income and OXY Pfd Divs

May not sum due to rounding

The inclusion of investment gains and losses in the income statement makes use of the published financials nearly useless to most investors. Clients and readers familiar with our work on Berkshire know we make numerous changes to allow for an estimate of Berkshire's ongoing durable economic earning power. You can read about the nuances in a bit but here's a table demonstrating the wide annual disparity between reported net income and our adjusted net income.

Berkshire Net Earnings 2018 – 2023 (dollars in billions)

	2023 exp	2022	2021	2020	2019	2018
GAAP Reported Net Earnings	\$100.4	(\$22.8)	\$89.8	\$42.5	\$81.4	\$4.0
Semper Adjusted Net Earnings	\$55.3	\$52.5	\$46.9	\$41.1	\$42.1	\$36.4
Net Earnings Per Avg A Share Out GAAP	\$14,463	(\$15,535)	\$59,460	\$26,668	\$49,828	\$2,446
Net Earnings Per Avg A Share Out Semper Adjusted	\$38,120	\$35,774	\$31,056	\$25,777	\$25,765	\$22,144
Average Equivalent A Shares Outstanding	1,450,465	1,468,876	1,510,180	1,594,469	1,633,946	1,643,795
Annual Growth in Semper Adjusted Earnings Per Share	6.7%	15.2%	20.5%	0.1%	16.4%	11.4%*

*2017 SAI EPS \$19,336 Post-TCJA

The analyst can put a ruler on Semper's adjusted net income calculation prospectively. Good luck figuring out what the heck's going on with the GAAP numbers. Despite a near-linear progression in Berkshire's economic earning power over time, even Semper's normalization methods can't smooth several material nuances that are distorting current earning power. Several of Berkshire's key drivers of profitability have been relatively weak while others, two in particular, are delivering an abundance of money that didn't exist two years ago.

BNSF, Berkshire's wholly-owned railroad since 2010, has suffered weak volumes for the better part of seven years, in part due to less use of coal. The last two years in particular have been particularly weak across most commodity groups, the exception being new automobiles and trucks which largely recovered from supply chain issues. The railroad will report roughly \$5.2 billion of net income in 2023 against normalized earnings closer to \$7 billion. BNSF's primary competitors have reported results already and it looks like business strengthened during the fourth quarter. Each of North America's seven Class 1 rails also report weekly granular data to the Surface Transportation Board and indeed, volumes appear to have at least moderated for the time being. Truck volumes incidentally are awful.

Berkshire's energy operation, BH Energy, will also report very low earnings in 2023, only in small part due to lower volumes of power at the electric utilities but mostly for an accrual for losses relating to wildfires in Oregon and Northern California. During 2023 BHE increased its accrual from \$400 million to \$2.3 billion, net of about \$500 million in reinsurance recoverable. The pre-tax charge is \$3 billion, not insignificant to a business that earns close to \$5 billion (gross of Berkshire's interest) in a normal year. While the accruals are non-cash in nature (for the moment), reported earnings will be net of the accruals. Hence, BHE will report much lower profits than economic earning power suggests.

Berkshire's insurance operation had a lights-out year in 2023. From an underwriting loss in 2022, we expect a massive swing in underwriting profitability, particularly at GEICO. The reinsurance business assumed sizable catastrophe exposure over the last several renewals as pricing finally became attractive. Barring a bad year of catastrophes, the entire insurance group should *mint* money in 2024.

A huge positive, albeit perhaps only temporary, is a welcome stream of cash earned on Berkshire's Mountain of cash. Against next to nothing two years ago, interest on T-bills is roughly 5.3% at present. Berkshire's cash position will grow from \$129 billion at year-end 2022 to an estimated \$167 billion in 2023. Interest on cash at current levels is approaching \$9 billion, income which appeared out of the blue (actually appeared thanks to Jay's need to get inflation under control, which his earlier dirty deeds were largely the culprit for releasing from the bottle in the first place). Interest on cash can be fleeting in a world of modern central banking, but for the moment Berkshire is enjoying a massive stream of income which is offsetting any weakness throughout the empire. And yes, the spellcheck suggested I capitalize the "m." I guess when the cash pile grows as tall as a mountain it becomes its own proper noun. I formally propose, Mr. Buffett, that you lean on Hamburg and Deloitte to consolidate the two balance sheet classifications "Cash and cash equivalents" and "Short-term investments in U.S. Treasury Bills" into a single line item, "*Mount Berkshire*." Describing the change would make for a sweet footnote.

Fun Facts

That's Just Simple Compound Interest: If you read the introduction to the letter, the math still holds. I eventually emerged from seclusion, having been crushed at Charlie's quick dismissal as "just simple compound interest" of the fact that Berkshire's shares could drop 99.3% and still have outperformed the S&P 500 since present management took over. Charlie was correct, but I still marvel at the simple statistic. From 1965 through 2023, \$100 invested in Berkshire grew to \$4,255,516. The same \$100 invested in the S&P 500 is only \$30,811. That means Berkshire can lose 99.3% and only then just match the index over 59 years. That's a margin of safety. Looked at another way, the index investor needs to grow their money 138-fold to catch up. Looked at another way, if the index continues to compound at the same 10.2% rate they earned over the last 59 years, they need another 50.8 years to catch Berkshire if Berkshire earns nothing. Harrumph.



BH Energy: How many companies do you see with pre-tax income lower than net income? BHE is spending massive growth capital to build its renewables portfolio in wind, solar and the grid to accommodate the power transition, earning tax credits in doing so. BHE's reported tax rate will be something on the order of -138% for 2023. The tax bill is negative \$1.9 billion. Blink. Blink. Essentially, early closure of long-lived traditional power plants, coal-fired plants for example, won't reach economic useful lives, despite large capital outlays and a promised return on the assets. Financing the transition to renewables is not the individual customer but the U.S. taxpayer. Electric utilities are largely monopolies and require compensation for spending vast sums on infrastructure for the common good. See past discussions in the Semper annual letter on the use of accelerated depreciation for the tax books.

BNSF: Berkshire acquired BNSF in 2010. Prior to the acquisition, financed in part with Berkshire's shares, they owned 22.5% of the publicly traded common stock of the railroad for which they had paid \$6.6 billion. The complete acquisition consisted of an additional \$15.9 billion cash and roughly \$10.6 billion in Berkshire shares for a total purchase of \$33 billion. The original shares were marked up to a new tax basis making the carrying value closer to \$35 billion. The entire acquisition was paid for and subsequently held by National Indemnity, Berkshire's colossal reinsurance business itself acquired by Berkshire in 1967 for \$8 million (with an "m"). The railroad was held in the insurance business until September 30, 2023 when ownership transferred to Berkshire the holding company. Having an asset like a major Class 1 rail inside an insurer is highly unusual. Rating agencies will assign little or no capital credit to a privately held business like the railroad, despite durable and predictable earning power. Fitch I believe wanted to give National Indemnity zero credit for the equity value of the rail. Why did National Indemnity buy the rail? First, they owned the original 22.5%. Second, they had the \$15.9 billion cash on hand, while the holding company did not. It was a matter of convenience and didn't inhibit the railroad sending nearly all of its profits earned since 2010 upstream to Berkshire. As to why move it now? National Indemnity is so overcapitalized that there is no need for the rail's earning power. Perhaps Mr. Buffett will address why the transfer took place in 2023 at the annual meeting.

Pilot Travel Centers: Berkshire acquired the remaining 20% of Pilot Travel Centers, formerly Pilot Flying J, in January of this year. It originally invested \$2.8 billion for 38.6% of the company in 2017 and last January 2023 bought its next 41.4% for \$8.2 billion (the whole thing wasn't for sale in 2017 if you are curious). Things got spicy after the middle \$8.2 billion deal which was based on 2023 profitability. I'd love to see the books but I'd bet the company never before and will never again see the margins it did in 2023. Berkshire tried to amend the accounting method, recognizing an inflated margin when it sees one. The Haslam family (original owner of 90% of the company -- the Pilot side which bought most of the Flying J piece in 2010 following a financial-crisis-induced bankruptcy) sued Berkshire and Berkshire countersued, claiming smoke-filled, backroom deals to inflate revenues in advance of the valuation date. The issue was headed to a January Delaware trial but settled with Berkshire purchasing the final 20%, which the Haslam's had the right to put to Berkshire. Berkshire had accrued roughly \$3 billion for the final 20% that it bought. We don't know what the final purchase price was but guess it's somewhere just north of \$3 billion. It appears Pilot is headed to BH Energy for reporting purposes but in the meantime will have its own reporting segment at least in the footnotes and MD&A. We have a summary financials table later in the intrinsic value section of this letter and some figures in the appendix.

Occidental Petroleum: Convolutions and convulsions of accounting are both on full display in Berkshire's partial ownership of Occidental Petroleum. In 2019 Berkshire invested \$10 billion in 8% cumulative perpetual preferred shares and with the investment warrants to purchase up to 83.86 million common shares at \$59.62, exercisable in whole or in part until a year after the preferred stock is fully redeemed. Neither the preferreds nor the warrants are publicly traded. When Berkshire made the investment, integrated energy companies were reeling from years of overinvestment through 2015. The pandemic sent oil prices negative for a moment (albeit on a nearby futures contract technicality). Occidental had the option to pay dividends on the preferred, \$800 million at an annual rate, in shares instead of in cash, which they did for several quarters. Berkshire hadn't warmed to the notion of being a major shareholder of the common stock yet, so on receipt of the shares as dividends quickly disposed of them (not like trash but by selling them).

Berkshire decided in 2022 that the Permian, carbon capture and Vicki Holub were the place to be so it began buying Occidental common stock. By August that year they had purchased more than 20% of the voting interest (not counting the preferred or warrants). To that point the common shares were included in the stock portfolio and disclosed quarterly to the SEC and public on SEC form 13F. Once at 20% Berkshire was required to account for its position in the common stock (they now own 28% not counting the preferred or warrants) using the equity method of accounting so it is no longer included in Berkshire's

categorization of common stocks on the balance sheet but is included as part of the disclosed 13F positions. Making for an analytical reconciling wellhead blowout, even though the common stock which trades publicly is not included in Berkshire's stock portfolio, the internally calculated valuation of the preferred and warrants are. If only there were a word that rhymed with GAAP...

One last fun fact on the Occidental investment, when Berkshire acquired the \$10 billion 8% preferred, it was redeemable at Occidental's option beginning in 2029 at 105% of the liquidation value plus any unpaid dividends. However, it was mandatorily redeemable at 110% of liquidation value under "specified events." One of those specified events included excess distributions by Occidental to its common stockholders (code for dividends and most likely share repurchases). Dividends to common shareholders were slashed in 2020 when the outlook was grim from \$0.79 to \$0.01 per quarter. The company conserved needed cash and thus paid \$200 million per quarter *in shares* to Berkshire as dividends on the preferred. Oil subsequently rose, Occidental's common rose, profits rose (a lot) and in March 2022 the quarterly rate was hiked to \$0.13 and then to \$0.18 a year later. Share repurchases commenced in 2022's second quarter so during the first nine months in 2023 Occidental redeemed \$1.5 billion of the \$10 billion preferred and mailed Berkshire \$1.65 billion, thus saving a portion of the 8% dividend on the preferred paid to Berkshire each year. Berkshire likes having its cake and eating it too, but it doesn't always get seconds.

Japanese Holding Companies: Berkshire purchased just north of 5% of each of five Japanese trading companies (Itochu, Mitsubishi, Mitsui, Sumitomo and Marubeni), announcing the initial stakes in an August 30, 2020 filing. Warren celebrated his 90th birthday and the investment that evening by actually going to a sushi restaurant in Omaha, where he ordered a T-bone steak with double side of hash browns and a cherry coke float for dessert. The steak was not Japanese wagyu but U.S. prime corn-fed beef. O.K., some of that I embellished. I'm quite sure Warren did have the T-bone, hashbrowns and float for his birthday that night, and he did have to announce the purchases that day (or a week earlier) because they had exceeded 5% ownership.

The initial investment in the trading companies was less than \$7 billion. Berkshire added to each of the five positions in 2022 and again in 2023, increasing position sizes by 45% to 60% in each. Ownership now ranges from 7.5% to 8.6%. Berkshire's ownership at year-end 2023 totals \$19.7 billion. The investments were made at roughly book value or less in five diversified holding companies earning 10% on equity with conservatively-capitalized balance sheets. The companies distribute about a quarter of profits as dividends. The stock prices are up anywhere from 1.2x to 4x since Berkshire's initial purchase. Good stuff, right? It's so much better in that Berkshire financed the purchases by borrowing at the time of each purchase in yen with debt bearing 0.7% average interest rates with maturities as long as 2060. The dollar was strong against the yen when the series of purchases were made, meaning Berkshire took no currency risk by borrowing locally and benefits if the dollar slides in value by the time the positions are ever sold (if they are ever sold). So, Berkshire financed investments earning 10% (by paying book value for 10% ROEs) at 0.7%, and over the past four years (even though the investment wasn't reported until Warren's birthday in 2020 the investments likely began when Berkshire first borrowed \$3.9 billion in yen at 0.5% in 2019), revenues and book values at the companies have doubled and earnings have as much as tripled, making returns on the initial investments now closer to 20% to 30% on initial capital invested. Whew. Financed at 0.7% with no currency risk. Just imagine what these guys could do if one wasn't 93 and the other eminently dead.

Tax Follies: Two critical changes to the corporate tax code were hatched courtesy of 2022's "Inflation Reduction Act" which was codenamed the 2022 Inflation Creation Act when it was drafted and circulated around Washington for nobody in Congress to actually read. First, a little-noted tax change introduced a 15% alternative minimum tax on "the adjusted financial statement income" of corporations earning over \$1 billion for years beginning after 2022. With Berkshire now including both realized and unrealized

appreciation on marketable securities on its income statement, it appears they may be obligated to pay the minimum tax on *unrealized capital gains* on a rolling three-year basis. Despite the big gain in Berkshire's stock portfolio in 2023, it appears the tax is in a gray area. Berkshire mentioned in their third-quarter filing that they did not expect a corporate alternative tax liability in 2023 and that the IRS and Treasury Department, "may release additional guidance in the future. We will continue to evaluate the impact of the 2022 Act as more guidance becomes available."

Berkshire's language was as expected. I don't think the folks in Washington realized what they passed. The notion of taxing *unrealized* capital gains is insane. I read the entire applicable portion of the bill before signed into law. With hope for an exemption by the Treasury Department, if Berkshire does end up writing checks on unrealized gains, an 8% average price gain on the stock portfolio has them sending \$3 billion to \$4 billion per year on average to Washington *above* what they pay today. If they are harmed by the legislation, I wouldn't expect the law to be on the books for long. Surely some discussions are taking place. Lobbying is too vulgar when seeking clarity on bad law.

Second, a final ridiculous component of the new law imposed a 1% excise tax on the dollar value of share repurchases beginning this year. Berkshire's repurchases since 2018 would have sent \$750 million to the IRS. While excessive executive compensation is troubling, don't tax the offsetting repurchase which masks dilution. Share repurchases are an extremely valuable allocation tool when done well. The abuse is not the repurchase. If you want to tax something, tax the share grant.

The Long Run

Berkshire's stock gained 15.8% in 2023 following a 4.0% gain last year. Most have repressed 2022 but the S&P 500 produced an 18.1% total return loss. For the two years Berkshire shares compounded by 9.7% while the index earned 1.7%. However, and I'm not naming names this year, but Berkshire's critics are out in full force. What a pitiful excuse for performance earning only 15.8% in a year when the S&P does 26.3%. Get the hook.

The damage done by having such a poor relative year may not be recoverable. Last year's performance table highlighted Berkshire only trailing the S&P in 4 of 58 compound time series in reverse. Now there are fully 13 out of 59 intervals where Berkshire lagged. Kidding aside, and I won't go through the detail, but you can see the differences in the figures shaded red for Berkshire's stock price and green for the index in the 59-year performance table below. The index was a bruiser following the 2008-2009 Financial Crisis that send the index price down 57% peak to trough. Berkshire invariably wins when the tide rolls out, so it's not unreasonable for the index to outperform when measured from a market low! The same can be said for 2000-2002's three-year decline sending the index price down 49% over three years. Take note of the one conspicuous 21-year time series beginning at the end of 2002 where Berkshire's 10.0% lags the index's 10.5%. Other than that one interval, Berkshire is ahead in *all* of the time series beyond 2008. As the duration of time gets longer Berkshire's outperformance grows.

Studying the performance table, using per-share book value yields an even more consistently favorable advantage for Berkshire, even during the period where the index raced ahead of most of the world following the Financial Crisis (again when the index was crushed).

The price you pay at the outset for any asset or investment often dictates the success of your return. Buying Microsoft in early 2000 was a very bad decision. Buying it a decade later for less than 10x earnings and less at time with margins that had similarly declined was a very good decision. Buying the S&P in 1999 or 2007 was a very bad decision. Buying the index in late 2002 or late 2008 was a very good decision. Even those buying Berkshire in 1998 weren't making a great decision. At three times book with an overvalued stock portfolio, the stock only returned 8.5% over the next 25 years. Yes, it beat the index

by 0.9% per year but it lagged its own 9.9% change in annual book value per share by a wide 1.4% margin. That's what cutting the multiple book more than half will do over a quarter century.

We think Semper's decision to buy Berkshire in February 2000 was a good decision. The stock had fallen by half from 1998 and the multiple to book receded from 3x to 1.05x. Simply using the Berkshire performance table Berkshire returned 9.9% from 2000 while the index merely earned 7%. Our experience with Berkshire is even better thanks to the price we paid in February. Our shares were bought at \$43,007 (seven bucks per share being the commission), which was down 22% from the beginning of 2000. While Semper's stocks returned more than our shares in Berkshire from the time of our initial acquisition, there are plenty of times where Berkshire has helped our overall returns more than they have lagged. On the other hand, had we bought Berkshire at the outset of Semper it would have been not a bad decision but a terrible decision. Where our stocks returned 11.5% over 25 years, Berkshire's shares gained only 8.5% (all better than the S&P's 7.0%). We demonstrated earlier the degree to which having cash on hand may be necessary in certain portfolios but the drag over a quarter century is extremely expensive. Even after a 1.9% drag and management fees, our returns are higher than Berkshire's from the outset. Point being, price matters, even with something as durable and predictable as Berkshire.

Berkshire's Performance page presents annual percentage change for three measures – book value per share, market value per share and S&P 500 total return. The figures are augmented with compound growth series from 1965 and also backward from 2022. Hence, the 1-year, 2-year all the way to 58-year returns are all easily ascertained.

Interpreting the table is straightforward. The three components, change in book value per share and total returns for Berkshire's shares and for the S&P 500 have three columns associated with each. Compare the first column in each set of three columns with the first column for the others, then compare the middle columns with the middle columns and the third columns with the third columns. The first column in each set of three is the annual percentage change. Thus, for 2023 Berkshire's book value gained an expected 20.1%, the stock price gained 4.0% and the S&P 500 lost 18.1%.

The next, or middle column for each set, is the reverse compound annual return series. These figures are *italicized* and show the 1-year return, 2-year return, 3-year return and so forth, all the way up the page to the 58-year return. I added the second column showing the *1yr, 2yr...* in the table this year to make it easier to discern the yearly compound returns from each other. Now if you want the *38yr* return it's easy to identify as 1986 and you are comparing the next three italicized figures.

To illustrate, using the row for 2021, Berkshire's *3yr* compound annual change in book value per share is 11.4%, the stock averaged 16.0% while the index gained 10.0% per year. The italicized figure at the top of the table in each column labeled "CAGR from 2023" thus is the annualized return from the outset. So, Berkshire compounded book value by 18.2% for 59 years as the stock averaged 19.8% against only 10.2% for the index.

These three italicized figures for year 1965 at the top of the page match exactly the bottom "CAGR from 1965" numbers seen in the third of each of the three columns. This third column begins with 1965's return and shows the compound annual return for each yearly period beginning at the outset. Thus, at the end of 1998 (underlined), book value per share had compounded by 24.7%, the stock averaged 28.7% and the S&P returned only 12.1%.

Berkshire's Performance vs. the S&P 500: Annual returns + Growth Rates Forward & Backward

Year		Book Value per Share	CAGR From 2023	CAGR From 1965	Market Value per Share	CAGR From 2023	CAGR From 1965	S&P 500 with Dividends Included	CAGR From 2023	CAGR From 1965
1965	59yrs	23.8%	18.2%	23.8%	49.5%	19.8%	49.5%	10.0%	10.2%	10.0%
1966	58yrs	20.3%	18.1%	22.0%	-3.4%	19.3%	20.2%	-11.7%	10.2%	-1.4%
1967	57yrs	11.0%	18.1%	16.7%	13.3%	19.8%	16.4%	30.9%	10.6%	7.7%
1968	56yrs	19.0%	18.3%	17.3%	77.8%	20.0%	28.6%	11.0%	10.3%	8.4%
1969	55yrs	16.2%	18.3%	17.1%	19.4%	19.1%	26.8%	-8.4%	10.3%	5.0%
1970	54yrs	12.0%	18.3%	16.2%	-4.6%	19.1%	21.1%	3.9%	10.7%	4.8%
1971	53yrs	16.4%	18.5%	16.3%	80.5%	19.6%	28.0%	14.6%	10.8%	6.1%
1972	52yrs	21.7%	18.5%	16.9%	8.1%	18.7%	25.4%	18.9%	10.7%	7.6%
1973	51yrs	4.7%	18.5%	15.5%	-2.5%	18.9%	22.0%	-14.8%	10.6%	4.9%
1974	50yrs	5.5%	18.7%	14.5%	-48.7%	19.4%	12.1%	-26.4%	11.2%	1.4%
1975	49yrs	21.9%	19.0%	15.1%	2.5%	21.4%	11.2%	37.2%	12.1%	4.1%
1976	48yrs	59.3%	19.0%	18.2%	129.3%	21.9%	18.0%	23.6%	11.6%	5.6%
1977	47yrs	31.9%	18.2%	19.2%	46.8%	20.2%	20.0%	-7.4%	11.4%	4.5%
1978	46yrs	24.0%	18.0%	19.5%	14.5%	19.7%	19.6%	6.4%	11.8%	4.7%
1979	45yrs	35.7%	17.8%	20.5%	102.5%	19.8%	23.8%	18.2%	12.0%	5.5%
1980	44yrs	19.3%	17.4%	20.5%	32.8%	18.4%	24.3%	32.3%	11.8%	7.0%
1981	43yrs	31.4%	17.4%	21.1%	31.8%	18.1%	24.7%	-5.0%	11.4%	6.3%
1982	42yrs	40.0%	17.1%	22.0%	38.4%	17.8%	25.5%	21.4%	11.8%	7.0%
1983	41yrs	32.3%	16.6%	22.6%	69.0%	17.3%	27.4%	22.4%	11.6%	7.8%
1984	40yrs	13.6%	16.2%	22.1%	-2.7%	16.3%	25.7%	6.1%	11.3%	7.7%
1985	39yrs	48.2%	16.3%	23.2%	93.7%	16.8%	28.3%	31.6%	11.5%	8.7%
1986	38yrs	26.1%	15.5%	23.3%	14.2%	15.2%	27.6%	18.6%	11.0%	9.1%
1987	37yrs	19.5%	15.3%	23.2%	4.6%	15.3%	26.5%	5.1%	10.8%	9.0%
1988	36yrs	20.1%	15.2%	23.0%	59.3%	15.6%	27.8%	16.6%	10.9%	9.3%
1989	35yrs	44.4%	15.0%	23.8%	84.6%	14.5%	29.6%	31.7%	10.8%	10.1%
1990	34yrs	7.4%	14.2%	23.2%	-23.1%	12.9%	27.1%	-3.1%	10.2%	9.6%
1991	33yrs	39.6%	14.5%	23.7%	35.6%	14.2%	27.4%	30.5%	10.6%	10.3%
1992	32yrs	20.3%	13.8%	23.6%	29.8%	13.6%	27.5%	7.6%	10.1%	10.2%
1993	31yrs	14.3%	13.5%	23.3%	38.9%	13.2%	27.8%	10.1%	10.2%	10.2%
1994	30yrs	13.9%	13.5%	22.9%	25.0%	12.4%	27.7%	1.3%	10.2%	9.9%
1995	29yrs	43.1%	13.5%	23.5%	57.4%	12.0%	28.6%	37.6%	10.5%	10.6%
1996	28yrs	31.8%	12.6%	23.8%	6.2%	10.6%	27.8%	23.0%	9.6%	11.0%
1997	27yrs	34.1%	11.9%	24.1%	34.9%	10.8%	28.0%	33.4%	9.1%	11.6%
1998	26yrs	48.3%	11.1%	24.7%	52.2%	9.9%	28.7%	28.6%	8.3%	12.1%
1999	25yrs	0.5%	9.9%	24.0%	-19.9%	8.5%	27.0%	21.1%	7.6%	12.3%
2000	24yrs	6.5%	10.3%	23.5%	26.6%	9.9%	27.0%	-9.1%	7.0%	11.7%
2001	23yrs	-6.2%	10.4%	22.6%	6.5%	9.2%	26.4%	-11.9%	7.8%	11.0%
2002	22yrs	10.0%	11.3%	22.2%	-3.8%	9.4%	25.5%	-22.1%	8.8%	9.9%
2003	21yrs	21.0%	11.3%	22.2%	15.8%	10.0%	25.2%	28.7%	10.5%	10.4%
2004	20yrs	10.5%	10.9%	21.9%	4.3%	9.8%	24.6%	10.9%	9.7%	10.4%
2005	19yrs	6.4%	10.9%	21.5%	0.8%	10.0%	24.0%	4.9%	9.6%	10.3%
2006	18yrs	18.4%	11.1%	21.4%	24.1%	10.6%	24.0%	15.8%	9.9%	10.4%
2007	17yrs	11.0%	10.7%	21.1%	28.7%	9.8%	24.1%	5.5%	9.6%	10.3%
2008	16yrs	-9.6%	10.7%	20.3%	-31.8%	8.8%	22.4%	-37.0%	9.8%	8.9%
2009	15yrs	19.8%	12.2%	20.3%	2.7%	12.2%	22.0%	26.5%	14.0%	9.3%
2010	14yrs	13.0%	11.7%	20.2%	21.4%	12.9%	22.0%	15.1%	13.1%	9.4%
2011	13yrs	4.6%	11.6%	19.8%	-4.7%	12.3%	21.3%	2.1%	13.0%	9.2%
2012	12yrs	14.4%	12.2%	19.7%	16.8%	13.8%	21.2%	16.0%	13.9%	9.4%
2013	11yrs	18.2%	12.0%	19.7%	32.7%	13.5%	21.5%	32.4%	13.8%	9.8%
2014	10yrs	8.3%	11.4%	19.4%	27.0%	11.8%	21.6%	13.7%	12.0%	9.9%
2015	9yrs	6.4%	11.7%	19.2%	-12.5%	10.2%	20.8%	1.4%	11.9%	9.7%
2016	8yrs	10.7%	12.4%	19.0%	23.4%	13.4%	20.8%	12.0%	13.2%	9.7%
2017	7yrs	23.0%	12.7%	19.1%	21.9%	12.1%	20.9%	21.8%	13.4%	9.9%
2018	6yrs	0.4%	11.0%	18.7%	2.8%	10.5%	20.5%	-4.4%	12.1%	9.7%
2019	5yrs	23.0%	13.3%	18.8%	11.0%	12.1%	20.3%	31.5%	15.7%	10.0%
2020	4yrs	9.8%	11.0%	18.6%	2.4%	12.4%	20.0%	18.4%	12.0%	10.2%
2021	3yrs	19.5%	11.4%	18.6%	29.6%	16.0%	20.1%	28.7%	10.0%	10.5%
2022	2yrs	-3.7%	7.5%	18.2%	4.0%	9.7%	19.8%	-18.1%	1.7%	9.9%
2023*	1yrs	20.1%	20.1%	18.2%	15.8%	15.8%	19.8%	26.3%	26.3%	10.2%

*Internally estimated BRK BVPS

Fiscal years 1965 and 1966 end September 30. 1967 is five quarters ended December 31. S&P 500 returns are likewise adjusted.

1998 is underlined to emphasize to emphasize Berkshire's pivot away from its extremely overvalued stock portfolio. Acquiring General Re in 1998 and their enormous fixed-income portfolio reduced the stock portfolio concentration from 115% of book value and 65% of assets to 65% of book value and 30% of assets. The pivot allowed Berkshire to divert material proportionate surplus capital away from common stocks and to wholly-owned businesses such as what are now BHE and BNSF. From that point, book value per share compounded *faster* than Berkshire's stock, which itself compounded *faster* than the stock portfolio, which in turn *outperformed* the S&P 500. By my math, had Berkshire not acquired General Re using its stock as currency in the deal, Berkshire would be worth roughly half of its current value. Using Berkshire's shares as currency at 3x book value was genius, evidenced simply by its 1.37x multiple at year-end 2023. There were myriad attributes of genius to the deal for Berkshire.

Since the table illustrates both forward and backward compound returns, the 15.8% stock price return for 2023 matches the *1yr* 15.8% annual return in the second column. Logically, Berkshire's 49.5% gain in 1965 becomes the one-year return in the "CAGR from 1965" third column.

Berkshire, like any company, should see total returns from the stock match fundamental returns from the business on a per share basis over time. Berkshire pays no dividend so its returns are all derived via the stock price. The 1.6% annual disparity between Berkshire's 18.2% compound gain in book value per share with its 19.8% stock market return is largely the expansion from the stock beginning at 64.7% of book value in September 1964 and ending closer to 137% of book at year-end 2023, roughly doubling of the multiple to book value over 59 years, or 124% of premium return in the stock versus book value. Book value per share was \$19.46 at the outset of fiscal year 1965 while the stock traded for ~\$12.59 as I estimate it. Plug and play these beginning values into any subsequent time series and the results are staggering.

A tight correlation between growth in book value per share and market value per share (no dividends save the single quarterly dime paid in 1967) can be seen in the table below. We'll soon be able to add the decade ended 1975 and a mathematically clean 60-year return series courtesy of time passages. Hat tip to Al Stewart.

10-Years Ended	Avg. Book Value per Share Growth	Avg. Market Value per Share Growth	Avg. S&P 500 Total Return
1983	29.4%	32.6%	10.5%
1993	24.7%	28.7%	14.9%
2003	19.0%	17.8%	11.1%
2013	10.3%	7.7%	7.4%
2023	11.4%	11.8%	12.0%

From 2023	Book Value per Share Growth	Market Value per Share Growth	S&P 500 Total Return
10-year CAGR	11.4%	11.8%	12.0%
20-year CAGR	10.9%	9.8%	9.7%
30-year CAGR	13.5%	12.4%	10.2%
40-year CAGR	16.2%	16.3%	11.3%
50-year CAGR	18.7%	19.4%	11.2%
59-year CAGR	18.2%	19.8%	10.2%

Provided book value per share continues as a meaningful measure, changes in book value per share and in the stock price over time will correlate to Berkshire's growth in per-share earning power. Deriving how much Berkshire earns in economic terms is a process which requires effort. I like to think our clients and readers of this annual letter are given a framework for understanding the sources of Berkshire's earnings and how it goes about reinvesting those earnings.

Once in a Berkshire Lifetime – Capital Allocation

“Charlie and I don’t know our cost of capital. It’s taught at business schools, but we’re skeptical. We just look to do the most intelligent thing we can with the capital that we have. We measured anything against our alternatives. I’ve never seen a cost-of-capital calculation that made sense to me. Have you, Charlie?” – Warren Buffett, to Charlie

“Never. If you take the best text in economics by Mankiw, he says intelligent people make decisions based on opportunity costs – in other words, it’s your alternatives that matter. That’s how we make all of our decisions. The rest of the world has gone off on some kick – there’s even a cost of equity capital. A perfectly amazing mental malfunction.” – Charlie Munger, in response



From a dying textile operation in New England with a \$22 million net worth, a history of operating losses, no excess cash, \$2.5 million owed to the bank and every dollar of capital in the business required to run the failing core textile business, one might ask, “How did I get here?” The question can be answered with two words. Plastics? No, that’s one word. The answer is, of course, *capital allocation*.

There exist but a handful of capital allocation tools available to company managements. Berkshire has employed every one of these arrows in the capital allocation quiver masterfully over what’s coming up upon six decades under the guide of Warren Buffett and, later, Charlie Munger officially in 1978, though the two collaborated on deals like Diversified Retailing as early as 1966. The failing textile operation was shuttered in 1985. Large investments at the time relative to Berkshire capital in Diversified and later in Blue Chip Stamps likewise weren’t long for the world. Instead, Warren used incremental capital and proceeds from mill closures to purchase common stocks. He bought National Indemnity in 1967 for \$8.6 million. The insurer would go on to be the cornerstone of Berkshire and best and largest reinsurer in the world (by capital, which is what matters). Warren and Charlie collaborated on the purchase of See’s Candies by Blue Chip, which Berkshire owned through Berkshire and Charlie owned through his partnership. Blue Chip would disappear but See’s, on cumulative invested capital of roughly \$65 million has earned \$2 billion for Berkshire over the years since its 1972 acquisition.

Berkshire moved capital away from the weak to the strong. It has issued shares when they were expensive in acquisition of other companies. It has bought back shares when they were cheap and no better opportunity was on the immediate horizon. Berkshire uses debt, but only when appropriate and never to excess. Take the prior example of what they have done with the Japanese trading companies. Investing in common stocks served Berkshire extremely well and over time outperformed the stock market by miles. The use of insurance float amplified returns and came at a negative cost. The analyst and investor will find few companies where the entirety of the right side of the balance sheet (the liability and equity side) costs it nothing, yet finances today over \$1 trillion in assets. Incremental spending at times reaps huge reward, today for example, in the energy business building renewables at highly predictable returns and financed with large tax benefits.

Capital levers are a flywheel at Berkshire. We’ve lost Charlie and there’s no replacing him. The culture, however, will live on in his spirit for a long, long time. All of the information I’ve gathered suggests Warren’s heir apparent, Greg Abel, is immensely well-suited to the role of capital allocation. The board of directors understands capital allocation, culture, and the indispensability of both to Berkshire’s longevity.

The Tools of Capital Allocation Available to Management

- Internal Spending: Capex, R&D, Advertising
- Dividends: Pay / Increase or Reduce / Suspend
- Debt: Pay Down or Take on New, Including Shifting Terms
- Acquisitions: Using Company Stock, Cash, Debt, or a Combination
- Repurchase Shares: Open Market and Via Tender Offer
- Issue Shares: Sell to Raise New Capital; Issue to Executives (a C-Suite Favorite)

One tool Berkshire does not employ is payment of a dividend. It paid one \$0.10 quarterly dividend and realized it was better retaining all profits and reinvesting like it knew how. And boy, did it know how. Money to spend in Berkshire's hands is better than money held elsewhere.

Berkshire occasionally uses its shares as currency in making acquisitions but has not done so since partially financing its 2010 purchase of BNSF with shares. Previously it acquired General Re using entirely \$22 billion worth of Berkshire shares trading for nearly three times book value in 1998. The stock traded for north of two times book value during much of the 1990s and Berkshire spent it in a number of acquisitions. Any investor or manager of a public company charged with strategy should be able to precisely recite the history of acquisitions made by Berkshire, how they were financed, what Berkshire was worth at the time, what they got, what they gave up, and how the deals fared over time. I can think of no better playbook to study on the deal front than Berkshire's.

Warren and Charlie earned matching \$100,000 salaries for decades. With essentially all of their substantial net worth's invested in the company, why take more than their share of proportionate earnings? To the extent they needed cash for living but mostly for charitable giving, they sold shares (in Charlie's case) or donated them (both, and heavily). They earn no bonus and have never been awarded a share of stock in any form as compensation. Every employee owning stock in Berkshire paid for their shares out of pocket. The same goes for the Board of Directors, who are paid \$900 for each meeting attended in person and \$300 for attending by phone or video call. Audit committee members are paid an additional \$1,000 per quarter. There is no D&O policy. Directors serve at-risk. Risk? You don't go to Berkshire's board to get rich; you go to preserve the culture of the place. Greg Abel recently sold his 1% ownership position in BHE to Berkshire. He turned around and purchased 168 A shares and now owns at least 228. Greg will likely materially increase his ownership of Berkshire over time, all with purchases out of pocket. Ajit Jain is a regular purchaser of Berkshire shares, owning 316 A shares and 170,958 B shares as of last year's proxy and reports 266 A shares as of today. He regularly makes gifts of shares to charity.

Both have positions well north of \$100 million. You won't find another management team and Board of Directors anywhere in the world that both own more dollar value in their company and were never given a share by the company.

The company generally operates with net cash on the balance sheet. The majority of debt is used at the energy operation, BHE, as well as at the BNSF railroad. Debt at these two subsidiaries is not hypothecated to the parent company and is utilized conservatively and in conformity with how each respective industry is capitalized. Now that we have interest rates on T-bills, Berkshire earns *way* more interest on its expected \$167 billion in cash and bills than it pays on its \$125 billion in outstanding debt obligations. At current yields on U.S. T-bills, Berkshire is earning close to \$9 billion in interest and paying less than \$5 billion on debt outstanding. Mount Berkshire. It's got a nice ring to it.

Berkshire is the largest company in the world by tangible assets (money-center banks control more gross assets on vastly more leverage than Berkshire employs). Firm assets exceeded \$1 trillion for the first time in 2023. Shareholders' equity is expected to be \$571 billion. Berkshire's stock portfolio largely resides in

its insurance operation and will total \$345 billion, which excludes another \$25 billion in the common shares of Kraft Heinz and Occidental Petroleum that are treated as equity method investments for accounting purposes.

Berkshire allocates cash earned from its operations (or the portion of economic profit earned as cash) in four primary activities.

1. Repurchases: Over the past five years Berkshire has repurchased its shares at material discounts to intrinsic value (it spends shares on acquisitions but only when the stock isn't undervalued);
2. Net Purchases of Common Stocks: Using Berkshire's growing insurance reserves and surplus capital in the insurance operation;
3. Acquisitions: It acquires entire businesses or partial controlling interests in entire businesses. Some deals are substantial while some are smaller bolt-on acquisitions for its myriad operating subsidiaries; and
4. Fixed Assets: Finally, Berkshire invests capital in fixed assets to grow its energy operation and elsewhere in excess of maintenance requirements. The energy business *retains all profit* and on a roughly dollar-for-dollar basis augments all retained earnings with a like amount of debt. The combination of equal portions equity and debt capital finance expansion of power generation and distribution on a regulated return basis, much of which is heavily subsidized with tax credits and incentives for capital spending.

Whether using cash flow from operations or my definition of GAAP-adjusted economic earnings, a portion of Berkshire's "profit" is already accounted and not available for Berkshire's direct use on capital allocation activities. To illustrate, cash flow from operations will total an expected \$48.4 billion in 2023, \$11.2 billion more than in 2022 thanks to much more interest on cash (which has grown partially via stock market sales – Berkshire only counts dividends in cash flow from operations and not changes in marketable security values or retained earnings of its investees).

Semper's estimate of economic earning power is \$55.3 billion. Cash flow from operating activities includes depreciation expense. While it's a non-cash expense, every bit of it is real in Berkshire's case. I assume maintenance capital expense roughly matches depreciation expense, a relationship that has held over time. You won't find regular charges against assets, equity and earnings. Maintenance capital must be spent from operating cash flow and is thus removed from discretionary spending on the capital arrows in the quiver. For 2023, \$48.4 billion in operating cash flow is reduced by \$10.0 billion in depreciation expense leaving just north of \$38.4 billion for capital allocation.

Alternatively, Semper's estimate of economic earnings includes the portion of its stock market holdings profits that are not distributed to Berkshire as dividends. At a 12/31/2023 run rate, those profits retained by Apple, Bank of America, American Express, Coca-Cola, Chevron (the five combined totaling more than 80% of the common stock portfolio) and the rest amount to \$14.5 billion, reducing \$55.3 billion in economic earnings to about \$41 billion. There are a number of additional non-cash adjustments to GAAP earnings that reduce funds available for allocation closer to \$38 to \$39 billion. It's reasonable to think about investable cash at the current rate of not quite \$10 billion a quarter (holding debt outstanding and cash balances constant and earning interest – back to a zero-interest rate policy and Berkshire has less incremental capital to invest – do we really want dirty deeds?)

We are going to present this table annually for the foreseeable and begin it in 2018 when Berkshire started buying back shares (during this latest cycle). Berkshire is clearly opportunistic and seeing where the money goes and when is telling. There is a lumpiness to when Berkshire spends in certain areas in any individual year that lends to analysis over a longer timeframe. We'll look at the last six years in aggregate and then at the last two. The money went out in 2022 at scale and at double investable cash flow (meaning cash balances were drawn down). It barely went out, meaning Berkshire retained almost

precisely all of its investable cash flow. The big swing factor over the two years was net purchases of common stocks. Berkshire bought a net \$58.5 billion in 2022 when the market was routed. It then sold an estimated \$25.9 billion last year as stocks rose. A review of Berkshire's net activity in common stocks concludes the folks in Omaha are pretty good at knowing when to hold 'em, when to fold 'em and when to back the truck up.

Berkshire Hathaway Investable Cash Flow and Capital Allocation 2018-2023; Dollars in Billions

	Past 6 years	Average	2023 (e)	2022	2021	2020	2019	2018
Cash Flow from Operations	240.9	40.2	48.4	37.2	39.4	39.8	38.7	37.4
Depreciation/Maintenance Capex	55.6	9.3	10.0	9.7	9.5	9.3	8.7	8.4
Investable Cash Flow	185.4	30.9	38.4	27.6	30.0	30.5	29.9	29.0
Capital Allocation	159.1	26.5	1.0	58.5	23.9	22.3	18.1	35.2
Berkshire Share Buybacks	75.0	12.5	9.3	7.9	27.1	24.7	4.9	1.3
Growth Capex	35.9	6.0	9.1	5.8	3.8	3.7	7.2	6.2
Acquisitions of Businesses	27.1	4.5	8.6	10.6	0.5	2.5	1.7	3.3
Net Purchases of Common Stocks	21.1	3.5	-25.9	34.3	-7.4	-8.6	4.3	24.4
Other	-11.5	-1.9	-3.9	-4.6	-3.2	4.6	1.8	-6.2
Net Proceeds from Debt	13.2	2.2	-3.0	8.2	-0.8	6.8	6.1	-4.1
Net Change in Cash	50.9	8.5	38.3	-18.1	8.4	10.3	16.1	-4.1

Berkshire produced \$240.9 billion in cash flow from operations over the past six years. Maintenance capital expense is simply the cost of doing business (staying in business is better phraseology) sent \$55.6 billion out the door, leaving about \$185 billion remaining of investable cash flow for capital allocation. Had it not sold almost \$26 billion in stocks in 2023, it would have spent nearly every penny. As it was, Mount Berkshire grows taller. Beyond a fourteener, it's approaching Everest. It actually is Everest, just that the real one in the Himalayas isn't getting any bigger. Just watch Berkshire's cash grow over time, in line with firm assets and equity, but oh my, will the media's cash-pile wall watchers wail.

Share Buybacks

Share buybacks slowed in 2022 and 2023 from a more vigorous pace in 2020 and 2021. Berkshire spent a combined \$51.8 billion over 2020-2021, 86% of investable cash flow buying back stock. The stock was far cheaper. Repurchases slowed to \$7.9 billion and we expect the company to report about \$9.3 billion for 2023. In our table we rank the cumulative largest capital allocation category first. Repurchases lead the pack over the last six years where the company spent a cumulative \$75 billion retiring 12.4% of its outstanding shares and consuming 41% of investable cash flow. Coincidentally, Semper's estimate of annual earning power totaled \$274 billion over the past six years. Our next section forecasting the next ten years of returns does have a table illustrating how the stock will fare under multiple scenarios of profitability, but in all cases spending half of economic earnings repurchasing shares. I may amend this next year or run repurchases at varying proportions of earning power. Much of Berkshire's \$55 billion or so economic earnings are non-cash in nature, particularly the portion coming from retained earnings by its common stock investees. Perhaps the best way to view Berkshire's share repurchases is as a proportion of investable cash flow. Splitting hairs, perhaps. We'll see. As Berkshire grows and its opportunity set diminishes simply for size, as long as Berkshire's shares remain cheap, expect sizable repurchases relative to either economic earnings or investable cash flow.

The takeaway should be Berkshire's efficiency in repurchasing shares compared with everyone else. Berkshire spent an average of 27% of our estimation of economic earnings over the last six years (with the first year 2018 being de minimis) repurchasing its stock. For the outlay they retired 2.1% of their outstanding shares per year. By contrast, the aggregate of the S&P 500 spends more than twice as much of earnings (often closer to triple when leverage is taken on to augment repos) and for the much larger proportion retires only 0.7% of outstanding shares. Stated more clearly, Berkshire spent a third to half as much of firm profits repurchasing shares and bought back three times as much of its outstanding shares. Everybody allocates capital. Few do it well. Nobody does it the Berkshire way except Berkshire. If you own the S&P 500 or companies that spend prodigiously buying back shares and barely reducing the share count, read this paragraph again until it makes sense.

Growth Capex

Following share repurchases, growth capex consumed the next largest outlay of investment over the past six years and depending on final tallies for each measure may have consumed the largest proportion of capital allocation in 2023. The two numbers should be close when released.

Berkshire spent \$35.9 billion on capex in excess of depreciation expense or an average \$6.0 billion per year. Growth capex at BHE consumed more than two-thirds of the total. The energy operation consists of three electric utilities and a wide-spanning network of energy pipelines and other distribution assets. Rapid expansion of wind and solar generating capacity and the new electric grid needed to send power from remote locations to where it is needed is consuming large amounts of capital at good regulated and predictable returns. 2023 will be a record year for capital spending at BHE. Total capex of \$9.5 billion will exceed depreciation charges by a whopping \$5.6 billion. The financing of Berkshire's energy growth is eye opening. The group will report \$3.3 billion of net income under only \$1.4 billion in pre-tax income, realizing a \$1.9 billion tax benefit. The income figures are net of the previously discussed accrual for Oregon and Northern California wildfires in 2020. Thus, cash profitability is higher by the amount of the accrual. Regardless, without tax credits subsidizing the renewable spend, combined net income, all retained and augmented with a like amount of debt, falls far shy of capital needs for growth, much of which is being fueled by taxpayers. I just hope we don't shut down the reliable power too quickly in advance of relying on the more unreliable variety. Otherwise, we are Germany, which rhymes with trucked.

Berkshire's conventional energy assets are properly maintained with maintenance capital expenditures, but it's the retention of earnings and ongoing investment in heavily subsidized and regulated power creation assets that will make BHE Berkshire's second largest operation in just a few years.

Additional growth capital expenditures were spent in the immediate years following Berkshire's purchase of BNSF in 2010. Adding capacity to its network, expanding tunnels to accommodate dual-stacked intermodal traffic and adding multiple rails of track in heavily traversed corridors greatly improved the capacity and efficiency of the railroad. From 2011 to 2015 the railroad spent nearly three dollars in capital expenditures for each dollar of depreciation. The rail is now only spending a bit more than 30% on average above depreciation. There is little more that the railroad can do on the growth front. Expenditures will be higher when reported for 2023, with \$3.8 billion of capex on \$2.5 billion in depreciation expense. Maintenance capex will always run somewhat higher than depreciation in railroads. BNSF economically earns more than 13% on equity capital when profits are not depressed as at present. Equity includes nearly \$15 billion in goodwill from the acquisition. The railroad would not be nearly as profitable without Berkshire having committed as much growth capex in its early years of ownership. No longer, however, will the rail be a big source of accretive capital allocation.

The balance of growth capex is spent among Berkshire's myriad manufacturing and service businesses. The leasing operation provides a terrific use of capital. Total firmwide capital expenditures should total \$19 billion when reported for 2023 with \$9.1 billion of that geared for growth.

Net Purchases of Common Stocks

Berkshire's common stock portfolio is held in the insurance investment portfolio with only like a few small exceptions (BYD and some pension and rabbi trusts as examples). Occasionally it is a net buyer and sometimes a net seller. It was a sizable buyer in 2022, spending a net \$34.3 billion as the stock market declined during the year. As prices lifted in 2023, Berkshire sold an expected \$25.9 billion. Over the last six years it purchased \$21 billion net.

In three of the past years Berkshire was a net seller and in three a net buyer. Years involving large net purchases were 2022 and 2018, which happen to be the two years when the stock portfolio and the stock market declined in value. The portfolio traded for 12.4x earnings at the end of 2018 and 18.7x most recently. It just so happens that Berkshire was a net seller of stocks in 2020 and 2021, not coincidentally the two years when it was the largest net buyer of its own stock. We track the data over all the years. Berkshire acquired General Re in 1998 and in doing so shrunk the stock portfolio from 115% of book value and 65% of assets to 65% of book value and 30% of total assets at year-end 1998. From that point forward, stocks have averaged 57% of equity and 24% of assets. At year-end 2023 stocks total 65% of equity and 35% of firm assets, almost exactly where they were in 1998. Everything is bigger of course. The stock portfolio is now \$372 billion versus \$37 billion in 1998.

[A little Gen Re acquisition trivia: The stock portfolio was \$36.2 billion in 1997 before the merger. Berkshire sold \$2.8 billion during 1998 and the portfolio was \$37.3 billion, so \$1.1 billion higher. Firm assets swelled from \$56 billion before the deal to \$122 billion after the deal. Cash rose from \$1 billion to \$13.5 billion. Gen Re brought 45% of the assets to the party and got 18% of the company. When I think about Warren I think about the mountainside goats with cowbells around their necks in Switzerland that I see every year.]

Remarkably, since 1998 net purchases of common stocks total only \$38 billion. That's something given the size of the stock portfolio. There is an allocation to stocks relative to capital and assets to which Berkshire is comfortable. The range doesn't move much. One would think net purchases would be much larger given the ten-fold growth in stocks, firm assets and shareholder equity since 1998. Portfolio activity no doubt buys the cheap and trims the dear (or makes room for other investments). Portfolio growth is likely sufficient to keep the allocation in line with where Berkshire wants it. Don't expect big ongoing net purchases from investable cash flow unless stock prices decline materially as they did last year. Then when prices rise quickly you can expect net sales. In evaluating the times when Berkshire has been a big net buyer, it's at times of market weakness.

One would expect on a 24.1% total return that portfolio valuation would rise. It did. The P/E rose from 13.6x to 18.7x, shrinking the earnings yield from 7.3% to 5.3%. Apple rose to half of the portfolio during the year and its multiple to earnings jumped from 22x back up to 30x. When Apple traded at similar levels two years ago I shaved the valuation of the stock portfolio by \$50 billion (essentially a 1/3 haircut to its multiple). No such discount is applied today, at least not for the portfolio. Apple is clearly expensive and I hope the position gets trimmed materially. However, with Apple at 30x to earnings the other half of the portfolio trades for 13.6x. Three of the four largest positions after Apple trade for low multiples. Perhaps Bank of America and Chevron won't trade for much higher valuations and American Express is only modestly undervalued so who knows. As long as earning power for the half of the portfolio that's not Apple is durable, predictable and growing, and it is on all three counts, then an aggregate 13.6x

multiple and commensurate 7.4% earnings yield is most likely undervalued. The nosebleed section of the market rests in a handful of companies. Apple happens to be one of them.

Berkshire's Seven-Year Ownership of Apple (2016 to 2023)

Date	Shares (millions)	Cost Basis (millions of USD)	Cost Basis per Share	Market Value (millions of USD)	Market Value per Share
Q1 2016*	39.2	\$1,000	\$25.48	\$1,069	27.25
Q4 2016	245.0	6,747	27.54	7,093	28.95
Q4 2017	666.9	20,961	31.43	28,213	42.31
Q4 2018	1021.2	36,044	35.30	40,271	39.43
Q4 2019	1003.5	35,287	35.17	73,667	73.41
Q4 2020 **	907.6	31,089	34.25	120,424	132.68
Q4 2022 ***	915.6	32,404	35.39	118,964	129.93
Q4 2023 ***	905.6	32,050	35.39	174,355	192.53

*Initial Buy by Todd or Ted

**All shares adjusted for 4-for-1 split in 2020

***New basis calculated using average cost method

Despite the common stock portfolio growing by more than \$50 billion (after net portfolio sales), total portfolio earnings (the earnings yield) declined. Dividends dropped as well, from \$5.5 to \$5.4 billion while retained earnings of investees fell by \$3.2 billion to \$14.5 billion. Did Berkshire thus lose earning power in aggregate from the gain and trims or did its holdings suffer earnings declines? Nope. Sales of \$26 billion are invested in cash. Berkshire sold some businesses with low multiples and higher earnings than Apple, hence overall stock portfolio earnings declined. Ironically, the portfolio earnings yield precisely matches today's 5.3% T-bill yield. There is no penalty for holding cash at the moment it seems.

Berkshire's Stock Market Investments, Dividends and Retained Earnings

	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23
Market Value *	\$196 B	\$187 B	\$259 B ^	\$292 B ^	\$351 B	\$316 B	\$372 B
Earnings	\$11.0 B	\$15.1 B	\$15.9 B	\$15.1 B	\$19.1 B	\$23.2 B	\$19.9 B
Dividends	\$4.3 B	\$4.1 B	\$4.9 B	\$4.4 B	\$5.2 B	\$5.5 B	\$5.4 B
Retained Earnings of Investees **	\$6.7 B	\$11.0 B	\$11.0 B	\$10.8 B	\$14.0 B	\$17.7 B	\$14.5 B
Price to Earnings (P/E)	17.8x	12.4x	16.3x	19.3x	19.1x	13.6x	18.7x
Earnings Yield (E/P)	5.6%	8.1%	6.1%	5.2%	5.1%	7.3%	5.3%
Dividend Yield	2.2%	2.2%	1.9%	1.5%	1.4%	1.7%	1.5%
Retained Earnings Yield **	3.4%	5.9%	4.2%	3.7%	3.6%	5.6%	3.9%
Dividend Payout Ratio	39%	28%	31%	29%	29%	30%	27%

*Includes publicly all publicly traded stocks; Excludes non-marketable preferreds and warrants

** May not sum due to rounding

The table above is slightly modified from past years due to accounting being stupid. Charlie would approve of the vulgarity as he regularly used the word. Due to accounting rules, Berkshire uses the equity method of accounting in its consolidated financial statements for its positions in Kraft Heinz and Occidental Petroleum common stocks and includes Occidental preferred and warrant shares, which are not marketable. The accounting treatment for equity method investments is economically logical in that the investor includes a proportionate share of the company's profits in earnings, thus increasing the cost basis and reduces the basis for any dividends received. The method eliminates the need for look-through accounting. However, the method is extremely flawed in that when the investor ultimately sells a position, any gain or loss against cash cost will force an accounting charge against the equity method cost basis (which had been changing quarterly in arrears when KHC and OXY for example reported earnings). Prior

iterations of this table would exclude the common stock positions in the public companies. The table is now revised to include these common stock positions and exclude the preferreds and warrants. This is a cleaner presentation of Berkshire's common stock investments but don't expect it to reconcile to reported GAAP financials.

Earnings from the stock portfolio now comprise only 36% of Berkshire's \$55.3 billion economic profit, down from 44% in 2022. Only \$5.4 billion of dividends are included in cash flow from operations. Those ignoring the \$14.5 billion in earnings retained by Apple and the others as not inuring for Berkshire's benefit will materially undervalue Berkshire's intrinsic value. Further, if the stock portfolio earns more than today's 5.3% earnings yield, one can add any additional return to Berkshire's economic earnings. Any premium gain is excluded from our GAAP adjusted earnings. \$248 billion in additional unrealized gain is not imaginary. Stock prices over time become more efficient. Recall our friend, Mr. Market.

Acquisitions of Businesses

Berkshire spent over \$27 billion over six years making a number of bolt-on acquisitions. The largest of these was 2022's purchase of insurance competitor Alleghany for \$11.6 billion cash. The media and Berkshire's critics yearn for the big headline deal but rarely pause to consider price and opportunity cost. In the meantime Berkshire can pull the trigger when it makes sense. A \$100 billion acquisition would be on par with Berkshire's purchase of BNSF in 2010 as firm assets tripled while shareholder equity is more than four times as great. And then there's \$167 billion Mount Berkshire.

An insane mountain of private equity and venture money is in competition to put money to work. Berkshire also has the issue of size. There aren't many \$100 billion elephants roaming around. Given investable cash flow is running a high \$48 billion today, Berkshire doesn't need elephants. Bagging one would be nice but blocking and tackling serves the company just fine. Berkshire buys knowable and predictable durable earning power, but only does so when the price is right. When faced with control premiums allowing for mid-to-low-single-digit earnings yields, opportunity cost would suggest buying common stocks when on sale at high-single-digit earnings yields (or more) or repurchasing Berkshire itself when on sale. This is precisely what Berkshire has done.

Unless it completed a deal previously unannounced in the fourth quarter, Berkshire spent \$8.6 billion acquiring businesses in 2023 with which it is already extremely familiar. The outlay for business acquisitions were almost exclusively spent increasing partial ownership in a number of investees – Pilot Travel Services (discussed in "Fun Facts), the Cove Point LP LNG terminal, and BNSF converting a 60-year lease on Montana Rail Link to an owned entity. Ownership of Pilot rose to 80% in 2023 and to 100% this January 2024. Cove Point had been 50% owned by BH Energy and 2023's investment increases its stake to 75%. The import/export terminal was part of the package of assets purchased from Dominion Resources in 2020. Dominion retains the residual 25% stake. All sleepy stuff but all value accretive over the long haul.

Other

The five-year capital allocation table contains a fifth component, "Other." At \$11.5 billion or roughly \$1.9 billion a year on average, it's a smallish leg which allows cash flow from operations to reconcile with Berkshire's capital allocation and net changes to debt and to cash. Included here are purchases and collections of loans and finance receivables.

Net Change in Cash Balance and Net Change in Debt Outstanding

Over the last six years Berkshire's investable cash flow exceeded cash used investing by \$26.3 billion. Again, Berkshire sold \$26.3 billion net of purchases of common stocks in 2023. Otherwise investing matched investable funds from operations. Proceeds from debt were largely earmarked for financing growth at BH Energy as well as yen borrowings to finance investment in the Japanese trading companies. Net proceeds from 2023's equity sales contributed to a \$50.9 billion increase in the cash balance over the six years.

When the Federal Reserve suppressed interest rates in late 2019 and certainly during the pandemic, Berkshire took to the debt markets. In addition to adding \$12.9 billion in net debt during those two years, they took the opportunity to materially lengthen the maturity of outstanding borrowings, locking in record-low borrowing costs on very attractive terms. Berkshire's aggregate \$124.6 billion in borrowings bear a 3.9% average interest rate, which crept up from 3.6% in 2022. Alarms aren't going off in Omaha on the rising interest burden but you can be sure they are elsewhere. Management of debt outstanding gets little notice but is done exceedingly well at Berkshire.

Berkshire Hathaway: Ten-Year Expected Return

It's nice understanding how to measure profitability. It's better determining properly measured profitability compounds, what it's worth today and what it will likely be worth in the future. Since the Semper 2015 annual letter, we've shared our work on economic profitability at Berkshire and the projections below for expected returns over ten-year intervals. Mr. Market assigns crazy valuations at times, but the average of the randomness gets to the right place over the long haul. Unlike the share prices of many companies, Berkshire's shares tend to not get extremely out of line with underlying fundamentals. That said, there are clearly times when the shares are more or less attractively priced relative to earning power and intrinsic value than others. Charlie and Warren frequently mentioned the notion of trying to get it roughly right instead of precisely wrong. None of our projections (or the product of our assessment of economic profitability) are meant to imply precision. I think you will find our work on Berkshire gets it roughly right, which has meant we've earned about what we'd expect to earn as owners of what's been our largest position for most of the last quarter century. Overlaying price relative to value, our experience in Berkshire's shares is likely better than most because we've been disciplined about the price we pay when purchasing shares. We always have cash coming in the door – from deposits, from dividends and from the proceeds of portfolio activity. The price paid relative to value dictates a sizable portion of return if you get it right or get it wrong. We hope this exercise is useful. I can tell you our clients appreciate it.

Berkshire's shares delivered a 15.8% gain in 2023. Expecting the same annual return over a decade is likely unrealistic unless we are starting from a depressed level of economic profitability or presuming a major expansion in price relative to economic earning power. Paying no dividend, Berkshire's share price will roughly match its return on equity over time, plus or minus any expansion or contraction in its valuation. If the multiple to book value holds constant over the next decade, the investor will earn Berkshire's return on equity. No doubt book value will lose some efficacy as a proxy for value over time, particularly if Berkshire repurchases large amounts of stock at high multiples to book value, or if inflation erodes the carrying value of current assets. The same correlation should hold true in expecting price to roughly match earning power over time. For the last decade, the stock compounded by 11.8% and book value per share grew 11.4%. For the past 20 years the stock gained 9.8% annually while book value per share grew 10.9%. Over 40 years the figures are ten basis points apart, the stock averaged 16.3% while book value per share compounded by 16.2%. If we presented economic earnings to shareholder return the results would be equally tight. In fact, I think they would be tighter. Based on current economic earnings and Berkshire's valuation, I'd be very surprised if Berkshire compounds by less than 10% per annum.

The following table was included in the Semper 2015 annual letter and has been updated annually. From year-end 2015 to 2023, our estimate of Berkshire's economic earning power grew 10.4% per year, growing 2.2x over eight years from \$23 billion to \$55.1 billion. Over the same stretch, Berkshire's market cap expanded from \$325 billion to \$782 billion, or 11.6%, yet the stock compounded 13.4%, 1.8% greater. How can the stock compound faster than the earnings and the market cap? For starters, the market cap outpaced profitability because the multiple paid for our measure of economic earnings grew 9.2%, adding 1.1% to return. The share price however raced by market capitalization due to Berkshire's repurchase of 12.4% of its shares outstanding beginning in 2018. If Berkshire is going to be a regular repurchaser of its shares, and they will if the shares are cheap and present relatively more opportunity than the other arrows in its capital allocation quiver, then only in per-share terms should economic profitability and growth be measured.

Annual Progression of Berkshire's Market Cap, Profit, Multiple and Stock Price Change

	2014	2015	2016	2017	2017	2018	2019	2020	2021	2022	2023	2024
					@new tax							At Int Val
Market Cap	\$371 B	\$325 B	\$401 B	\$489 B	\$489 B	\$502 B	\$552 B	\$537 B	\$665 B	\$685 B	\$782 B	\$1,042 B
Net Income	\$23 B	\$25 B	\$27.5 B	\$29.1 B	\$31.8B (H)	\$36.4 B	\$42.1B	\$41.1 B* add \$2.9 B	\$46.9 B	\$52.5 B	\$55.1 B	\$57.9 B
P/E	16.1x	13.0x	14.6x	16.8x	15.4x	13.8x	13.1x	13.1x	14.2x	13.0x	14.2x	18x
Earnings Yic	6.2%	7.7%	6.9%	6.2%	6.5%	7.3%	7.6%	7.7%	7.1%	7.7%	7.10%	5.6%
Gain in Stock Price		-12.5%	23.4%	21.9%	21.9%	2.8%	11.0%	2.4%	29.6%	4.0%	15.8%	33.3%

Source: Berkshire Hathaway; Semper Augustus

Depending on Berkshire's market valuation and opportunity cost among each capital allocation arrow, the rate at which Berkshire buys back its own shares will dictate how *large* Berkshire becomes. The greater the repurchases, the less retained earnings reinvested and the slower Berkshire grows. If Berkshire repurchases no additional shares earns an average 10% return on equity (on current equity *and* on incremental equity), then Berkshire should double in size over seven years. Assuming an extreme repurchase program consuming 100% of profit, Berkshire only grows organically and not at all from reinvested earnings. The more shares Berkshire buys as a proportion of cash earned from operations; the less Berkshire will grow by dollar size. Fewer repurchases mean more retained capital for growth via investment.

In the "old days," that is before Berkshire began buying shares in 2018 (it did the same numerous times in the past when the stock was cheap and relatively attractive against opportunity cost), we could measure Berkshire by its progression of dollar economic profitability and market valuation. When the share count changes, the analyst must look to per-share metrics.

We highlighted the tight correlation between book value and market value both in per-share terms over long intervals. With no dividend paid, return on equity will dictate investment return (again assuming ongoing utility to the measurement of equity). Berkshire can no longer compound at the rate that made Warren and Charlie veritable rock stars. Return on equity, which has been the same as change in book value per share, averaged between 10% and 12% since Berkshire acquired General Re in 1998. It took but two years to work the multiple to book down from 3x in mid-1998 when Berkshire made the acquisition to early 2000 when we bought Berkshire for the first time. 1999's 19.9% decline in the stock price was only part of a halving of the stock over about 18 months. We thought buying the stock at half off a better move than had we done so at double the price at the time we launched Semper. Tongue firmly in cheek here but we were closely following the business, and the stock, for four years before the price was right. Thanks again, Bob.

We find a range of Berkshire earning between 10% and 12% on equity capital a reasonable expectation. Thus, we present our expected returns using both measures as our range. A 12% return on equity assumption for Berkshire may sound aggressive but know that my GAAP-adjusted earnings assume Berkshire *only* earns the earnings yield on the equity portfolio. At today's 18.5x P/E and 5.34% earnings yield, should the stock portfolio instead earn 10.34% annually, 5.0% above the earnings yield, that adds \$18.7 billion pretax to today's \$55.1 billion economic earnings. Incidentally, Berkshire's GAAP earnings *will* pick up the earnings yield over time assuming retained earnings at its portfolio holding reinvest reasonably well and each dollar of retained earnings translates into a dollar of market value over time.

Results in the table presume Berkshire invests precisely half of economic earnings repurchasing shares every year. This may or may not wind up being the case. Easy to adjust upward or downward. This is to illustrate the impact of repurchasing shares at varying prices relative to book value.

The higher 12% return on equity case is shaded in green, with profit represented by the assumed 12% return on equity. If the company spends half of profit repurchasing shares and retains half, then book value will grow by 6% per year, as will profits, albeit with a catch on profits. In 2023, with several of Berkshire's subsidiaries underearning (the Rail and portions of BHE), Berkshire earned 9.65% on year-end equity. The more proper measure of return on equity is as a percentage of *average* equity over the year, in which case Berkshire earned 10.47%. For the purpose of compounding profits, year one, 2024 in this case, uses profits as a percentage of *trailing* book value, which we expect to be roughly \$571 billion in 2023. All are free to build their own model using any array of assumptions. In ours, beginning at a 9.65% ROE and then jumping to a 12% return in 2024 is a big leap. Remember we are only compounding earnings at *half* of the ROE because we are assuming half of profit each year retires shares. Economic earnings in this case (Net Income in the table) grow to \$115.8 billion by year-end 2024. That's a 7.7% annual rate of growth, not half of our assumed 12% ROE. Against the expected \$115.8 billion net income we use four terminal multiples to earnings: 13x, 15x, 18x and 20x. For each scenario we present the annual stock price change cumulatively and annualized, the percent share count reduction and annual percent share count reduction.

It will be clear when spending time with the table the degree to which price paid matters. We further demonstrate five scenarios at varying prices paid to book value: 50%, 100%, 120%, 150% and 200%. In the 1960s and 1970s Berkshire was buying shares back at half of book value. The chance of seeing the stock at half of book is about as remote as me actually playing for Coach Prime after my third joint replacement and quick tour of the weight room. I do have that year, maybe two thanks to Covid. At the same time, the likelihood of Berkshire paying 200% of book value buying shares is about as likely as Warren suiting up as running back for his beloved Cornhuskers. It pains me to even type that word.

The 10% return on equity case also has a slight accretion in profitability above 5% (half of the ROE) accounting for accretion from 2023's 9.65% to 10% in 2024. Here, earnings grow to \$88.6 billion in 2033. The same 13x to 20x range is used for terminal multiple as well as the range for multiple to book value paid. The columns shaded salmon and moss green reflect the stock at 18x economic earnings at year 10. The 18x multiple reconciles to the various methods we use in calculating intrinsic value at Berkshire.

The worst-case scenario once assembling all of the variables has Berkshire's shares compounding at 6.6%. That extreme is shown is the lower left scenario where Berkshire earns 10% on equity, spends half of annual income buying shares at 200% of book value (that's another touchdown for the great Buffett) and trades for 13x terminal earnings. At the other extreme seen in the upper right, Berkshire earns 12% on equity, spends half of profit buying shares at half of book and the stock trades for 20x. Shares outstanding decline 72% and the shareholder makes 26.7% a year. Ain't going to happen, although in many aspects that *is* what happened during the first 33 years under Warren's, and later both Warren's and Charlie's, stewardship. Berkshire *was* buying shares at half of book at times. The business *was* earning high-20s returns on equity and the stock became very expensive by 1998. A repeat would be sweet but with \$571 billion in shareholder's equity and over \$1 trillion if firmwide assets, in the words of President H.W. Bush and Dana Carvey, "Not gonna' do it."



If we had to bet, and with over \$150 million invested in the company you could say we are, the middle of the page is where our expectation falls. Berkshire likely earns between 10% and 12% and repurchases some meaningful number of shares between 120% and 150% of book value. If the stock trades at a mid-teens multiple (it's 14.2x today), the investor gets a low-double-digit return. It's almost as simple as if the business earns 11%, with no valuation change the shareholder makes 11%. Next year I can save 70 pages and lots of trees and just say that. It shouldn't be complicated.

**Ten-Year Expected Return at Year-End 2033 With ROE at 10% and 12%
Share Repurchases With 50% of Normalized Annual Profits Illustrated
2023 Initial Valuation: 9.65x P/E, 14.2x P/B**

Repurchase with 50% of profits at 50% of BV					Repurchase with 50% of profits at 50% of BV				
10-Year: 2033 10% ROE (\$55.1B base)					10-Year: 2032 12% ROE (\$55.1B base)				
	13x	15x	18x	20x		13x	15x	18x	20x
Market Cap	1,152	1,329	1,594	1,772	Market Cap	1,505	1,736	2,084	2,315
Net Income	88.6	88.6	88.6	88.6	Net Income	115.8	115.8	115.8	115.8
Share count	503	503	503	503	Share count	401	401	401	401
Repurchase with 50% of profits at 50% of BV	P/E	13	15	18	P/E	13	15	18	20
	Earnings Yield	7.7%	6.7%	5.6%	Earnings Yield	7.7%	6.7%	5.6%	5.0%
	Stock Price Change	322%	387%	485%	Stock Price Change	591%	697%	857%	963%
	Annual Gain Per Year	15.5%	17.2%	19.3%	Annual Gain Per Year	21.3%	23.1%	25.3%	26.7%
	Share Count Reduction	65%	65%	65%	Share Count Reduction	72%	72%	72%	72%
	Annual Share Reduction	10.0%	10.0%	10.0%	Annual Share Reduction	12.0%	12.0%	12.0%	12.0%
Repurchase with 50% of profits at 100% of BV					Repurchase with 50% of profits at 100% of BV				
10-Year: 2033 10% ROE (\$55.1B base)					10-Year: 2033 12% ROE (\$55.1B base)				
	13x	15x	18x	20x		13x	15x	18x	20x
Market Cap	1,152	1,329	1,594	1,772	Market Cap	1,505	1,736	2,084	2,315
Net Income	88.6	88.6	88.6	88.6	Net Income	115.8	115.8	115.8	115.8
Share count	863	863	863	863	Share count	776	776	776	776
Repurchase with 50% of profits at 100% of BV	P/E	13	15	18	P/E	13	15	18	20
	Earnings Yield	7.7%	6.7%	5.6%	Earnings Yield	7.7%	6.7%	5.6%	5.0%
	Stock Price Change	146%	184%	241%	Stock Price Change	257%	312%	395%	450%
	Annual Gain Per Year	9.4%	11.0%	13.0%	Annual Gain Per Year	13.6%	15.2%	17.3%	18.6%
	Share Count Reduction	40%	40%	40%	Share Count Reduction	46%	46%	46%	46%
	Annual Share Reduction	5.0%	5.0%	5.0%	Annual Share Reduction	6.0%	6.0%	6.0%	6.0%
Repurchase with 50% of profits at 120% of BV					Repurchase with 50% of profits at 120% of BV				
10-Year: 2033 10% ROE (\$55.1B base)					10-Year: 2033 12% ROE (\$55.1B base)				
	13x	15x	18x	20x		13x	15x	18x	20x
Market Cap	1,152	1,329	1,594	1,772	Market Cap	1,505	1,736	2,084	2,315
Net Income	88.6	88.6	88.6	88.6	Net Income	115.8	115.8	115.8	115.8
Share count	942	942	942	942	Share count	863	863	863	863
Repurchase with 50% of profits at 120% of BV	P/E	13	15	18	P/E	13	15	18	20
	Earnings Yield	7.7%	6.7%	5.6%	Earnings Yield	7.7%	6.7%	5.6%	5.0%
	Stock Price Change	125%	160%	212%	Stock Price Change	221%	271%	345%	394%
	Annual Gain Per Year	8.5%	10.0%	12.1%	Annual Gain Per Year	12.4%	14.0%	16.1%	17.3%
	Share Count Reduction	35%	35%	35%	Share Count Reduction	40%	40%	40%	40%
	Annual Share Reduction	4.2%	4.2%	4.2%	Annual Share Reduction	5.0%	5.0%	5.0%	5.0%
Repurchase with 50% of profits at 150% of BV					Repurchase with 50% of profits at 150% of BV				
10-Year: 2033 10% ROE (\$55.1B base)					10-Year: 2033 12% ROE (\$55.1B base)				
	13x	15x	18x	20x		13x	15x	18x	20x
Market Cap (billions)	1,152	1,329	1,594	1,772	Market Cap	1,505	1,736	2,084	2,315
Net Income	88.6	88.6	88.6	88.6	Net Income	115.8	115.8	115.8	115.8
Share count	1,027	1,027	1,027	1,027	Share count	958	958	958	958
Repurchase with 50% of profits at 150% of BV	P/E	13	15	18	P/E	13	15	18	20
	Earnings Yield	7.7%	6.7%	5.6%	Earnings Yield	7.7%	6.7%	5.6%	5.0%
	Stock Price Change	107%	138%	186%	Stock Price Change	189%	234%	301%	345%
	Annual Gain Per Year	7.5%	9.1%	11.1%	Annual Gain Per Year	11.2%	12.8%	14.9%	16.1%
	Share Count Reduction	29%	29%	29%	Share Count Reduction	34%	34%	34%	34%
	Annual Share Reduction	3.3%	3.3%	3.3%	Annual Share Reduction	4.0%	4.0%	4.0%	4.0%
Repurchase with 50% of profits at 200% of BV					Repurchase with 50% of profits at 200% of BV				
10-Year: 2033 10% ROE (\$55.1B base)					10-Year: 2033 12% ROE (\$55.1B base)				
	13x	15x	18x	20x		13x	15x	18x	20x
Market Cap	1,152	1,329	1,594	1,772	Market Cap	1,505	1,736	2,084	2,315
Net Income	88.6	88.6	88.6	88.6	Net Income	115.8	115.8	115.8	115.8
Share count	1,119	1,119	1,119	1,119	Share count	1,063	1,063	1,063	1,063
Repurchase with 50% of profits at 200% of BV	P/E	13	15	18	P/E	13	15	18	20
	Earnings Yield	7.7%	6.7%	5.6%	Earnings Yield	7.7%	6.7%	5.6%	5.0%
	Stock Price Change	90%	119%	163%	Stock Price Change	161%	201%	261%	301%
	Annual Gain Per Year	6.6%	8.1%	10.1%	Annual Gain Per Year	10.1%	11.7%	13.7%	14.9%
	Share Count Reduction	22%	22%	22%	Share Count Reduction	26%	26%	26%	26%
	Annual Share Reduction	2.5%	2.5%	2.5%	Annual Share Reduction	3.0%	3.0%	3.0%	3.0%

The Heart of the Ten-Year Expected Return Table:

Berkshire PE Multiple -->		13x	15x	18x	20x
Book Value of Repurchase	50%	15.5%	17.2%	19.3%	20.6%
	100%	9.4%	11.0%	13.0%	14.2%
	120%	8.5%	10.0%	12.1%	13.2%
	150%	7.5%	9.1%	11.1%	12.3%
	200%	6.6%	8.1%	10.1%	11.3%
		Shaded Average = 10.6%			

13x	15x	18x	20x
21.3%	23.1%	25.3%	26.7%
13.6%	15.2%	17.3%	18.6%
12.4%	14.0%	16.1%	17.3%
11.2%	12.8%	14.9%	16.1%
10.1%	11.7%	13.7%	14.9%
Shaded Average = 14.5%			

The Stock Portfolio

Berkshire's stock portfolio produced an estimated 21.4% total return (with dividends) in 2023 versus 26.3% for the S&P 500. It was the only year of the last five where the portfolio lagged the index.

Berkshire's stock portfolio compounded by nearly 30% for three decades through 1998. By mid-1998 the portfolio traded for more than 40x earnings. Berkshire itself traded for three times book value. The stock portfolio was 115% of firm book value. Berkshire bought General Reinsurance that year and in doing so absorbed a large bond portfolio and shrunk Berkshire's stock allocation to 69% of book value without paying a dime in taxes. Evaluating the stock portfolio alone from that point, time was required to work off excessive overvaluation. Despite a total return of 2.0% in 1999 versus 21.1% for the index, Berkshire would outperform the index for the next two decades. Still, from the end of 1998, Berkshire's stocks compounded at 7.9%, beating the S&P's 7.6%, also expensive in the late 1990s as discussed earlier in the letter.

Berkshire Hathaway Stock Portfolio

Year		Berkshire 13F Portfolio Total Return	CAGR from 2023	CAGR from 1999	Berkshire Portfolio Total Return	CAGR from 2023	CAGR from 1999	S&P 500 Total Return	CAGR from 2023	CAGR from 1999
1999*	25yrs	2.0%	7.9%	2.0%	2.0%	8.6%	2.0%	21.1%	7.6%	21.1%
2000	24yrs	8.6%	8.2%	5.2%	8.6%	8.9%	5.2%	-9.1%	7.0%	4.9%
2001	23yrs	-17.4%	8.2%	-2.9%	-17.4%	8.9%	-2.9%	-11.9%	7.8%	-1.0%
2002	22yrs	0.2%	9.5%	-2.1%	0.2%	10.3%	-2.1%	-22.1%	8.8%	-6.8%
2003	21yrs	27.5%	10.0%	3.2%	30.7%	10.8%	3.7%	28.7%	10.5%	-0.6%
2004	20yrs	5.6%	9.2%	3.6%	5.5%	9.9%	4.0%	10.9%	9.7%	1.3%
2005	19yrs	6.0%	9.4%	3.9%	8.0%	10.1%	4.5%	4.9%	9.6%	1.8%
2006	18yrs	18.5%	9.5%	5.6%	21.7%	10.2%	6.6%	15.8%	9.9%	3.4%
2007	17yrs	1.3%	9.0%	5.1%	7.2%	9.6%	6.6%	5.5%	9.6%	3.7%
2008	16yrs	-24.4%	9.5%	1.7%	-24.3%	9.7%	3.0%	-37.0%	9.8%	-1.4%
2009	15yrs	19.6%	12.3%	3.2%	22.6%	12.5%	4.7%	26.5%	14.0%	0.9%
2010	14yrs	15.0%	11.8%	4.2%	13.1%	11.8%	5.4%	15.1%	13.1%	2.0%
2011	13yrs	6.5%	11.5%	4.3%	5.1%	11.7%	5.3%	2.1%	13.0%	2.0%
2012	12yrs	14.7%	12.0%	5.1%	15.0%	12.2%	6.0%	16.0%	13.9%	2.9%
2013	11yrs	28.8%	11.7%	6.5%	29.0%	12.0%	7.4%	32.4%	13.8%	4.7%
2014	10yrs	7.7%	10.1%	6.6%	7.3%	10.4%	7.4%	13.7%	12.0%	5.2%
2015	9yrs	-4.5%	10.4%	5.9%	-4.1%	10.8%	6.7%	1.4%	11.9%	5.0%
2016	8yrs	13.1%	12.4%	6.3%	12.9%	12.8%	7.0%	12.0%	13.2%	5.4%
2017	7yrs	15.3%	12.4%	6.7%	15.9%	12.7%	7.5%	21.8%	13.4%	6.2%
2018	6yrs	-13.6%	11.9%	5.6%	-13.6%	12.2%	6.3%	-4.4%	12.1%	5.6%
2019	5yrs	39.8%	17.8%	7.0%	39.2%	18.3%	7.7%	31.5%	15.7%	6.7%
2020	4yrs	20.7%	12.9%	7.6%	22.2%	13.5%	8.3%	18.4%	12.0%	7.2%
2021	3yrs	29.3%	10.4%	8.5%	29.2%	10.8%	9.1%	28.7%	10.0%	8.1%
2022	2yrs	-15.8%	2.0%	7.3%	-15.2%	2.6%	8.0%	-18.1%	1.7%	6.9%
2023**	1yr	23.5%	23.5%	7.9%	24.1%	24.1%	8.6%	26.3%	26.3%	7.6%

*Internally estimated BRK portfolio return

**Holdings as 12/31/23

Source: Berkshire Hathaway; Semper Augustus Calculations; Bloomberg Data

The table above includes returns from Berkshire's non-13F holdings that we have been able to identify. Precise sales proceeds can only be estimated and as method defaults to the market value at the prior quarter end before the position was known to be sold. Our return presentation for Berkshire's common stock portfolio in past letters and appearing in the left portion of the table was derived from Berkshire's SEC form 13F filings. There are nuances to the 13F that don't paint a complete picture of Berkshire's total portfolio.

Berkshire controls a number of entities that aren't required to file a 13F. A primary difference involves the requirement to disclose only securities listed and traded on U.S. stock exchanges. The Semper portfolio, for example, owns ten internationally headquartered companies, but we are only required to disclose three of them. Berkshire, likewise, owns and has owned a number of positions not requiring disclosure. These include current positions in BYD, Diageo, and five Japanese trading companies: Itochu, Mitsubishi, Mitsui, Sumitomo and Marubeni. A small position in Australian insurer IAG was recently sold in 2022 as a policy renewal no longer compelled Berkshire to own a position. The BYD position, held inside BH Energy, has been reduced by 62% with sales beginning in 2022 and continuing through late 2023. Recall the original BYD investment in 2008 was 225 million shares for \$230 million. I'm not sure they saw the position growing to more than \$8 billion. God love Charlie.

Since 2003, Berkshire formerly owned shares in PetroChina, POSCO, Tesco, Sanofi, Swiss Re and Munich Re. We track Berkshire's non-13F holdings as a separate portfolio and adjust holdings as we learn of any additions or deletions, either in whole positions or in position size. Over the last 25 years, Berkshire's 13F holdings returned 7.9% per year on average versus 7.6% for the S&P 500. Inclusion of Berkshire's non-13F holdings brings its total return over the same period up to 8.6% per year. Some of these investments were home runs, PetroChina and most recently BYD and the Japanese trading companies materially added to overall return.

Don't scoff at Berkshire only earning 7.6% without the international businesses or 8.6% with them over the last 25 years. Beating the S&P over that period was quite a feat given the portfolio valuation in 1998, particularly its concentrated investment in Coca-Cola. On a \$1.3 billion investment made in the aftermath of 1987's stock market crash, Coke quickly grew to 40% of the portfolio and 46% of Berkshire equity by 1998, trading for nearly 50x earnings. If there had ever been a time to sell Coke, that was it. Despite being a thirteen-bagger in a decade and extremely overvalued, the thought of sending 35% of any gain realized to Washington was unappealing, so the purchase of General Re was the next best thing, ultimately even better. The Coke holding reached \$17.4 billion in 1998 and is now only \$23.6 billion at year-end 2023. 25 years of working the multiple down by more than half, coupled with little business growth, yielded a mediocre result for what was by far Berkshire's largest holding. Viewing it as a bond yielding 4% is a reasonable way to view the position.

Identifying Berkshire's non-13F holdings is going to become more difficult. Regular readers of the Chairman's letter found conspicuously absent from the 2022 letter the longstanding table of top equity holdings with their respective shares outstanding, market values and cost basis. There are nuances to the 13F. Berkshire has reporting entities, Mr. Buffett's personal holdings for example, small as they might be relative to the portfolio, that are included in the filing. New England Asset Management holdings appear as well as some pension and rabbi trust assets at BHE. Often the holdings are the same but there are occasionally slight nuances between the SEC filing and Berkshire's much-appreciated table. At the moment, we believe the only non-13F holdings are the Japanese Holding Companies and Diageo.

A proxy voting rule is coming later this year that requires disclosure of how votes on executive compensation in proxy voting for each company held on a new form N-PX. Semper may wind up having

to disclose our seven internationally headquartered companies that we are not required to do so at this time. Berkshire may fall victim to the rule as well. We aren't sure of the interpretation but it appears the requirement supersedes SEC 13F exclusions. We are determining if exclusions for international holdings remain exempt. It makes no sense why the SEC would care how U.S. institutional investors vote on compensation at non-U.S. companies. Stay tuned. You can be certain in the meantime if a board of directors awards 20% of a company in an option package to a CEO that we will vote no and probably write about it in this letter, never mind a form N-PX, or whatever.

Berkshire's common stock portfolio is far too large to run circles against the S&P 500 anymore. If the occasional Apple or Coca-Cola come along then fantastic. The advantage to the stock portfolio is not



because it will beat some index anymore, though it has and often by quite a bit. The advantage of the stock portfolio is because it *is* a stock portfolio. The degree of overcapitalization in Berkshire's insurance operation allows for ownership of a much larger allocation to common equities (and even to an entire railroad every now and then). Most insurers own bonds. Because Berkshire buys durable and growing earning power and does not generally overpay, the earnings yield on the stock portfolio is often higher than yields on bonds. Bonds pay interest and don't reinvest retained earnings. If stocks return more than bonds over time, then Berkshire's dominance of the insurance game only grows. It grows and spits out surplus capital to Omaha for reinvestment throughout the empire. We

have Mount Berkshire and also Mount BNSF, Mount BHE, Mount Pilot (you are either old or live in North Carolina if you get this one), and the list goes on.

With approximately 80% of Berkshire's stock portfolio invested in its five largest positions and with 50% alone in Apple, as go these Fab Five – Apple, Bank of America, Chevron, Coca-Cola and American Express – so goes the portfolio. Each of the investments were acquired at the right prices. Will they beat the S&P 500? It really doesn't matter. I'd guess from year-end 2023 prices most likely not. Four have enormous embedded long-term capital gains and each of the four appear well-positioned. Returns on the stock portfolio prospectively are not why Berkshire is likely to outperform over the next decade and beyond. As a side note, the size of the Apple position or of concentration in Berkshire's own Big Five are often compared to just the stock portfolio or to book value. That's the wrong way to look at it. Measure size against total assets and/or intrinsic value, now both over \$1 trillion and growing.

[I'm inserting this paragraph for personal reference. I often can't precisely recall the varying rates at which the dividend received deduction applies to property casualty companies. Instead of searching Google, if you ever want the quick answer, just reach for your copy of the latest Semper letter and flip to the stock portfolio section. Fun reading here: Take note of the way dividends are taxed and retained earnings are presumed taxed. Dividends received by corporations from other U.S. companies receive a 50% dividend received deduction on holdings less than 20% owned. Thus, at the 21% Federal tax rate, corporations pay a 10.5% rate on dividends received. For businesses more than 20% owned, the deduction is 65% making the rate 7.35%. However, for property and casualty companies, 25% of the deduction is disallowed under a proration rule. Thus, 62.5% of dividends received, and not 50% received, are taxed at 21%, making the tax rate on dividends from U.S. companies less than 20% owned 13.125%. Dividends are already taxed by the distributing company, hence the deduction. Mr. Buffett has mentioned Berkshire's blended tax rate on dividends received is about 13% from all sources.]

Berkshire Hathaway Intrinsic Value Update

Berkshire grew per-share intrinsic value by 12.8% in 2023. The stock returned 15.8%. The price return exceeded intrinsic value growth but lagged it last year. Over time, the measures will grow together but over short intervals will see wide disparities. That's our friend, Mr. Market, occasionally making the shares too rich for large investment but at other times allowing us to back up the proverbial truck. It won't be a rusting Cybertruck, that's for certain. Ignore once or add to dictionary? Delete?



The shares are less undervalued heading into 2024 than a year ago. However, at 75 cents on the intrinsic value dollar, we expect to earn Berkshire's return on equity over time and if the valuation gap to intrinsic value closes, we make more. If the valuation gap widens, we make less. Against a S&P 500 trading at 22.4x earnings capitalized on high margins, we like Berkshire at 14.2x our measure of economic earnings.

Ongoing analysis of Berkshire involves several methods, tweaked and refined each year. I've followed the company closely since 1996 when the year B shares were offered to the public. Semper first acquired shares of Berkshire in February 2000, after the stock was cut in half following its purchase of General Re during the tech bubble. We bought our initial large position for \$43,707 per A share, or 105% of then book value per share. Semper's understanding of Berkshire grows each year when I take the better part of a week during the January and February letter-writing process to update my models and think about valuation. I'm relieved that after countless hours across the years reconciling and assigning myriad data points it now allows for what I believe is a fairly accurate depiction of where capital exists among the major groups and the portion of normalized profit derived from each.

The balance of this section will be somewhat repetitive for regular readers of our annual letter. Those interested in Berkshire's key subsidiaries and groups of assets may find the detail interesting. I am beyond pleased each year with the feedback, particularly from those who learn a bit about accounting, tax or just about how Berkshire is constructed and operated. Warren and Charlie said many times over the years that Berkshire became what it was as a fluke. Mr. Buffett could have bought National Indemnity for himself and his limited partners. Instead, here we are as partners with Warren, and Charlie in spirit, as owners of the finest insurance operation in the world and the collection of durably profitable enterprises that are collected over time. That understanding is complicated is probably favorable for us as shareholders. It's favorable for us because we always have cash to work and are always looking to increase our ownership. A deep understanding of how the business is constructed allows us to worry about most anything other than what happens at Berkshire. Derailing the business can't be done overnight and if we are approaching a turn at too-high speed, we should know it far in advance.

Berkshire's consolidated financial statements include two primary segments: (1) Insurance and Other and (2) Railroad, Utilities and Energy. Insurance and Other consists of Berkshire's entire insurance operation including GEICO, Berkshire Hathaway Reinsurance (a combination of National Indemnity and its affiliated subsidiaries along with General Re, purchased in 1998), and a variety of primary insurers writing commercial business lines. The insurance operation is among the world's largest insurers by premiums but by far the largest by capital. As crazy as it may sound, in addition to the vast insurance operation Insurance and Other also includes a collection of dozens of wholly-owned operating companies under a "Manufacturing, Service and Retail" umbrella, plus the roll-in of a smaller but hugely profitable group of leasing and finance companies. Insurance and Other finally includes a constantly evolving number of assets and liabilities held at the holding company level.

The second group, Railroad, Utilities and Energy is a bit more straightforward. It includes the Burlington Northern Santa Fe Railroad (BNSF) which operates one of the largest railroad systems in North America

with over 32,500 route miles of track in 28 states. The reporting group also consists of Berkshire's 92% ownership interest in Berkshire Hathaway Energy (BHE), which operates three domestic regulated utilities – PacifiCorp, MidAmerican Energy and NV Energy. BHE also owns regulated electricity distribution businesses in Great Britain and Canada. Natural gas pipelines consist of five domestic regulated interstate natural gas pipeline systems with 21,100 miles of pipeline with capacity of 21 billion cubic feet of natural gas per day. Other assets include independent power projects, a partial interest in a liquefied natural gas export, import and storage facility which is operated and consolidated for reporting purposes (now 75% owned up from 50%), and the largest residential real estate brokerage firm in the U.S. plus one of the largest residential real estate brokerage franchise networks in the country.

Among the two groups' myriad collection of subsidiaries, a vast array of deferred tax assets and liabilities are created. These are consolidated as a stand-alone line item, "Income taxes, principally deferred," on Berkshire's consolidated balance sheet. An analytical framework attempting to identify each primary group's profitability measured against the capital employed in each group is faced with quite a challenge.

Berkshire made the task manageable from 2003 to 2016 when the Chairman's letter included an extremely useful supplemental financial presentation of Berkshire's main subsidiaries. This presentation disappeared from the 2017 annual report and more granular data was distributed among the MD&A, the footnotes to the financial statements, supplemental segment reporting of a handful of measures and finally a summary financial statement of holding company figures not directly allocated to the subsidiaries.

Combination of insurance and holding company assets and liabilities along with Berkshire's Manufacturing, Service and Retail group is a complicated collection to unwind. The analytical task grew ever more complicated in 2018 when the separately reported finance operation rolled into the MSR group. Several investments in common stocks are not held by the insurers and over time exist at different subsidiaries. Minutia for sure but assessing Berkshire's MSR group is an extremely important component to understanding where profitability waned for a number of years and is finally recovered.

Returns on equity within the MSR group ground downward from nearly 10% in the mid-2000s to 6.2% in 2016, the final year group financials were presented. Equity of the MSR group totaled \$56.8 billion in 2015. Paying \$37.2 billion including debt for Precision Castparts made the new subsidiary a material piece of MSR. The new equity balance in MSR was presumably north of \$90 billion but no longer singly identified. Immediate weakness in PCC's turbine business, already strained pre-merger, negatively impacted the MSR group's return on equity which declined from 8% to an inadequate 6%. Subsequent inclusion of the finance group likely masked deterioration among much of Berkshire's MSR group. Clayton Homes in particular knocked the cover off the ball for years and grew into one of Berkshire's more profitable and important non-stand-alone subsidiaries.

The Semper letter includes an annual summary financial statement for the MSR group, despite known data shortcomings. Isolating cash, debt, other intangibles, and deferred-tax liabilities, which are reported unassigned to any group as a standalone item on Berkshire's consolidated balance sheet, made the job of getting the numbers correct very difficult. It's still no walk in the park and requires numerous assumptions and prorations involving reported segment figures. The presentation table you will find in this section is finally close to what Berkshire would see internally and allows for a better reconciliation across all key groups. The very good news is by 2021 the MSR group was earning far healthier returns than it was in 2018 and 2019. Despite high inflation in 2022 and into 2023 which caused volume declines among many MSR companies, the group's aggregate profitability stands at a record not only in dollar profit but more importantly a record return on equity since Berkshire first broke out the segment on a stand-alone basis in 2003.

There is a renewed focus on profitability and operations among many MSR businesses. Benches are deeper. Greg Abel spent the past several years immersing himself into the non-insurance group. Whether for Greg's involvement or simply for Berkshire having great people, results among Berkshire's MSR companies are much improved. It looks like the MSR group earned over 11% on both equity and on capital in 2022 and 2023 (return on capital is slightly higher than return on equity because I have modestly more cash than debt assigned to the group). Regardless, even when adding \$10.6 billion written down for PCC in 2020 back to equity, return on equity still adjusts to 10.2%.

I remain embarrassed for having criticized Berkshire's lack of adequate disclosure. More diligence on my part and the puzzle pieces were largely there all along, if not with precision. Enough data existed to make reasonable assumptions as to assignment of key figures. Earlier attempts weren't far off, but lacking specific data points I lacked a filter and chose criticism when none was warranted. As Berkshire grows, more and more granular data will roll into the segments for reporting purposes.

Methods Employed in Assessing Intrinsic Value

Berkshire followers often conflate earnings power and balance sheet nuances by double counting or under counting in places. Our analysis reconciles across methods. Measurement of economic earning power is preferred, primarily our GAAP adjusted financials and sum of the parts approaches. Both favored methods are joined at the hip, requiring adjustments to the published financial statements. The balance, simple book value per share and the classic two-pronged methods, are reconciling tools, and are also more impacted in the short term by swings in the publicly traded stock portfolio, more than 95% of which is held in Berkshire's overcapitalized insurance group.

Net Income Basis

Net Income Basis – 2023 Year-End Estimated (*dollars in billions*)

	Pre-Tax Income	After-Tax Net Income
Operating Groups		
Berkshire Hathaway Energy (Net of all NCIs)	\$2.9	\$4.6
BNSF (depressed by \$1.5B net)	6.8	5.5
Manufacturing, Service, Retail and Finance	16.7	12.8
Pilot Travel Centers	1.0	0.7
Operating Group Subtotal	<u>\$27.4</u>	<u>\$23.6</u>
Insurance and Investment Income		
Insurance Underwriting Normalized Gain	5.5	4.3
Insurance Investment Income	26.9	23.7
Holding Company Income	<u>4.5</u>	<u>3.6</u>
SAI Pension Expense	-0.0	<u>-0.0</u>
Insurance and Investment Income Subtotal	<u>36.9</u>	<u>31.6</u>
Totals	<u>\$64.3</u>	<u>\$55.1</u>

Source: Semper Augustus; Totals may not sum due to rounding

Profit figures for Berkshire's primary operating groups are derived in concert with our sum of the parts analysis and the normalization of GAAP earnings approach utilized to remove certain aspects of volatility from reported results. Not captured is the degree any subsidiary or group is over or under earning.

The Manufacturing, Service and Retail group, which now includes the former Finance and Financial products (leasing mostly) group, was hammered during much of the pandemic year. Much of retail closed entirely for a time. Supply chains suffered and non-essential manufacturing likewise slowed or stopped. In all, the pandemic took a toll on the group, with pre-tax income declining from \$12.3 billion in 2019 to

\$10.9 billion, with after-tax profit declining 15% to \$8.1 billion. Much of the group is recovered. Sale and restructuring of some underperforming subsidiaries combined with a robust recovery and operating efficiencies drove pre-tax and after-tax profits to an estimated record \$16.7 and \$12.8 billion in 2023. Any analysis beginning with depressed figures in 2020 will make objects in the mirror appear larger than in real life. We find measuring profits across Semper's holdings from at least as far back as 2019 to the present most useful and conservative. Berkshire's subsidiaries send the vast majority of profit among these MSR companies to Omaha for capital allocation elsewhere. Recognize that growth in this collection of businesses largely comes with no reinvested capital.

BNSF has been weak for several years. The railroad was naturally hammered in 2020, with volumes substantially lower. Railroads are blessed with lots of variable costs, so profits only declined 6% in 2020. The railroad shipped 9.5 million carloads in 2020, down 7.2% from 2019. Volumes recovered to 10.1 million by 2021 but then began to decline again. Carloads in 2022 were not much higher than in 2020 at 9.55 million. Volumes remained weak throughout 2023's first nine months as operating revenues fell 7.7% on 8.7 lower volume. We estimate rail profits are \$1.5 billion below a normalized state. Total carloadings in 2023 will be below the pandemic year and may fall below 9 million when reported. Lower coal shipments from the Powder River Basin is only partly to blame. Until very recently most commodity groups shipped lower volumes.

BNSF is likely to report \$5.2 billion GAAP profit for 2023, down from \$5.9 billion in 2022. We adjust economic net earnings \$300 million above GAAP reported net income reflecting cash profits benefitting from the use of accelerated depreciation on capital spending. Sizable "growth" capital improvement took place from 2009, when Berkshire bought the railroad, through 2016. Recently the degree to which capital spending outpaces depreciation charges is slowing, necessitating a reduction in the ongoing benefit. Our figure is now lower by \$500 million than it was in recent years, reflecting the lack of opportunity to "grow" the rail. The railroad is unlikely to add to track miles. It does have room to add significant volumes and we'd expect higher profitability in coming years. Its position in the western U.S. is favorable. Population growth and trade with Asia advantage the western Class 1 rails in North America.

BH Energy is booming (as far as regulated utilities and distribution assets can boom). Already discussed was the enormous capital opportunity in the utility and energy businesses. Retaining capital instead of paying dividends to Omaha and having a bounty of greenfield and expansionary projects producing attractive, regulated returns is a major source of value creation. Much of BHE's spending on capital projects are tax incentivized, and there is no better group of businesses to seize the opportunity to expand. Tax credits for wind and solar provide so much benefit to have driven the tax rate downward to where it is remarkably deeply negative. We may see a negative 138% tax rate in 2023, providing \$1.9 billion in tax benefit. How many businesses do you see where net income is larger than pre-tax income? The allowed use of accelerated depreciation for tax purposes by regulators further rewards spending of capital beyond maintenance levels for the benefit of society. Accelerated depreciation further drives the Semper-adjusted cash tax rate well below the GAAP-reported tax rate. The deferred-tax liability balance for PP&E is \$12.5 billion at BHE and \$34 billion for all of Berkshire. Both will march higher in the years to come. An updated reconciliation between cash taxes and GAAP taxes is again included in the appendix.

For the time being, the capability of spending enormous sums on renewables and the building of the grid is a huge competitive advantage for the group. BH Energy should be Berkshire's second most valuable group next to insurance in the next four or five years.

You can see in our Net Income Basis presentation above normalized \$5.5 billion pre-tax and \$4.3 billion after-tax underwriting gain for 2023. Our method for measuring insurance underwriting assumes an average 5% pre-tax underwriting profit over time. We also exclude loss accruals on retroactive insurance and periodic payment annuity business. Large premiums are booked up front and losses develop and are

paid slowly. In both lines Berkshire is ahead of projections and should be very profitable. They have the use of the float for a long time, but loss accruals mask underlying profitability of these lines. Berkshire likely lost money underwriting in 2022 due to catastrophe and other losses from Hurricane Ian and elsewhere, plus high inflationary loss costs repairing cars and people at GEICO. 2023 turned on a dime. Strong pricing and operational improvement at GEICO, acceptance of large cat volumes for the first time in years and a quiet storm season combined to send underwriting profits deeply into the black. Our method strips volatile underwriting results, just like we strip quarterly and annual gains on marketable securities. Both are replaced with a more normalized estimate for profitability expected to be earned over a number of years. The analyst not agreeing with an assumed 5% pre-tax underwriting profit and our exclusion of retroactive reinsurance and periodic payment annuity accruals can plug in whatever estimate they choose or stick with the lumpy reported results. I find capitalizing lumpiness to be very difficult. Understanding insurance cyclicalities has served Semper very well over the past quarter century.

Other Methods for Valuing Berkshire

Below is a summary table for our intrinsic valuation by market capitalization and share price. Prior year figures are included and an updated set included as well to update Berkshire's reported (and adjusted per Semper methodology) results and also to demonstrate the degree to which our expectations were off.

2022 Intrinsic Value by Market Cap and Per Share

	Market Capitalization	Price Per A Share	Price Per B Share
Sum of the Parts Basis	\$928 billion	\$634,951	\$423
GAAP-Adjusted Financials	965 billion	660,267	440
Simple Price to GAAP Book Value	828 billion	566,365	378
Two-Pronged Approach (Ours)	970 billion	663,688	442
Simple Average	\$923 billion	\$631,359	\$421

2022 Intrinsic Value by Market Cap and Per Share: Updated for Reported Results

	Market Capitalization	Price Per A Share	Price Per B Share
Sum of the Parts Basis	\$928 billion	\$635,733	\$424
GAAP-Adjusted Financials	945 billion	647,379	432
Simple Price to GAAP Book Value	843 billion	577,463	385
Two-Pronged Approach (Ours)	1,004 billion	687,579	458
Simple Average	\$930 billion	\$637,039	\$425

2023 Intrinsic Value by Market Cap and Per Share: EXPECTED

	Market Capitalization	Price Per A Share	Price Per B Share
Sum of the Parts Basis	\$1,046 billion	\$725,786	\$484
GAAP-Adjusted Financials	995 billion	690,551	460
Simple Price to GAAP Book Value	999 billion	693,338	462
Two-Pronged Approach (Ours)	1,102 billion	764,642	510
Simple Average	\$1,035 billion	\$718,579	\$479

Source: Semper Augustus

A simple average of our four valuation methodologies values Berkshire at \$1.035 trillion, up \$105 billion over the estimate a year ago. Intrinsic value grew 12.8% in per-share terms and 11.3% in dollar terms. The difference is due to Berkshire buying back an estimated 1.3% of its outstanding shares. They repurchased 1.1%, in both years, a lower cadence than in 2000 and 2001. We expect \$9.3 billion in share repurchases for the year with \$2.3 billion acquired in the fourth quarter. One of the methods in particular understated intrinsic value by a wide margin in 2022. It should be easy to spot. The big decline in Berkshire's stock portfolio that year sent book value downward to a low valuation. 2023 saw a recovery so the book value measure is no longer depressed. If Apple winds up being ridiculously overvalued then book value is overstated. An equal weighting of the four measures gets us to our valuation for 2023.

Some methods are more conservative at times and less so at others. The Two-Pronged Approach, used intermittently by Berkshire and with changing methods since 2005 makes no judgment about the degree to which the stock portfolio is under or over-valued. It likewise makes no determination if operating earnings are likewise deviant from "normalized" levels. Use of a Simple Price to GAAP Book Value methodology will also lose efficacy over time as share repurchases made above book value will shrink book value per share proportionally more than book value itself. Also, many assets are fully depreciated or carried at values well below a conservative assessment of replacement cost. 2023's 22% price increase in the stock portfolio was largely responsible for a 20.1% increase in book value per share. Two years ago, we estimated the stock portfolio was \$50 billion overvalued largely due to overvaluation in Berkshire's Apple position that totaled 46% of the stock portfolio. Apple produced a 26.4% loss in 2022, wiping out the discount. We assume the stock portfolio is fairly valued today despite 2023's recovery in Apple to new highs. As stated earlier, Apple's valuation at 30x to earnings offsets the other half of the portfolio's 13.6x multiple, making the entire portfolio perhaps reasonably valued at 18.7x. 2022's intrinsic valuation excluded the simple price to book method for equity portfolio undervaluation. Book value then was a better book value (meaning more likely to understate true value). The two-pronged no longer understates intrinsic value.

Semper's methods of valuation are described *briefly* below. Past letters delve into more detail of each. In total, Berkshire trades at a considerable discount to intrinsic value. The A and B shares closed 2023 at \$542,625 and \$356.66 respectively. Using the average of methods, at \$718,579 and \$479 per share, Berkshire's shares trade at 75% of fair value, giving us 33.3% upside to fair value. The shares trade at 14.2x our estimate of economic earning power

Of the four methods for valuing Berkshire, the Sum of the Parts Basis and GAAP Adjusted Financials approach should be more heavily emphasized. Some assumptions and adjustments made top-down in the GAAP Adjusted Method are likewise incorporated at the group level. When earnings are neither depressed nor above normal profitability, the two approaches should yield similar results. Any valuation figures are not meant to imply precision. The methods are assumption based and modeled to yield a normalized, smoothed result such that when profits or investments bounce around with significant volatility, our figures will move with less deviation. As a simple example, an investment earning 7% made with cash earning nothing will have nearly zero impact on our profitability assessment. With T-bills now yielding more than 5%, investments today similarly have nearly no impact on normalized profitability. More on why this is the case to come.

Sum of the Parts Basis

Sum of the Parts Valuation (dollars in billions)

Operating Groups	2018	2019	2020	2021	2022	2023 (e)
Berkshire Hathaway Energy	\$50 - 57	\$50 - 58	\$62 - 72	\$75 -86	\$81-86	\$81-86
BNSF	95 - 105	100 - 110	100 - 110	115 – 135	117-137	120-140
Manufacturing, Service and Retail	140 – 150	170 – 180	170 – 180	200 – 210	228-241	230-244
Finance and Financial Products	30 - 33	In MSR	In MSR	In MSR	In MSR	In MSR
Pilot Travel Centers						12-14
Operating Group Subtotal	\$315 - 345	\$320 - 348	\$332 - 352	\$396 - 431	\$426-464	\$443-484
Underwriting Norm Capitalized Value	33	36	39	41	49	65
Operating Group and Underwriting	\$348 - 378	\$356 - 384	\$371 - 391	\$437 - 472	\$475-513	\$508-549
Investments						
Insurance Investments	241	330	372	453	415	490
Investments Premium/Discount	34	-19	-39	-50	None	None
Holding Co Investments (Net of debt)	21	34	32	28	19	27
Investments (Insurance/HoldCo) Total	\$296	\$345	\$365	\$431	\$434	\$517
TOTAL VALUATION	\$644 - 674	\$701 - 729	\$736 - 756	\$868 - 903	\$909 - 947	\$1,025 – 1,066

*Excludes Investments and Cash in Operating Groups
Source: Semper Augustus

Valuing Berkshire through a sum of the parts assessment is the best approach to understanding the company. Four primary operating groups – Berkshire Hathaway Energy, BNSF, a collection of businesses under the Manufacturing, Service, Retail and Finance umbrella, and the greatest collection of property/casualty insurance and reinsurance companies in the world – are each among the largest businesses in the world on a standalone basis. Berkshire’s holding company also owns a collection of investments and liabilities not specifically assigned or owned by the subsidiaries.

Profits at the railroad and most MSR businesses are sent to Omaha for reinvestment elsewhere. Some of these businesses have slight opportunities to reinvest incremental capital. However, if good returns on equity capital can be maintained, even with no or little growth, these businesses serve their purpose of creating free cash above Berkshire’s cost of capital. Surplus capital accumulated by the insurance operation over the years financed nearly everything at Berkshire outside of issuance. The energy businesses are growing in value and retained all profits since Berkshire bought MidAmerican Energy in 1999. Retained earnings are matched with traditional gearing, growing Berkshire’s far faster than most in the creation and distribution of power.

Berkshire Hathaway Energy

Berkshire Hathaway Energy is a collection of three Western U.S. regulated electric utilities and distribution assets throughout the U.S. as well as Alberta and Great Britain. The regulated utilities, MidAmerican Energy, Nevada Energy and PacifiCorp (Pacific Power and Rocky Mountain Power) serve customers in Iowa, Nevada, Oregon, Washington, Northern California, Utah, Wyoming, and Idaho, with growing renewable energy production assets in a growing roster of additional states. The territories served by Berkshire grow faster than the overall U.S. population. The group produces more than 34,000 megawatts of power per year providing energy substantially below the U.S. national average cost and far cheaper in markets with direct competition. Distribution assets include more than 21,000 miles of natural

gas pipelines transporting 15% of natural gas consumed in the U.S. An ongoing \$18 billion investment is modernizing and building electrical grid capacity in the Western U.S. and Canada.

Half of BHE's owned and contracted generating capacity comes from renewables, a figure that will grow materially higher. Cumulative renewables investments total nearly \$40 billion to date. Wind and solar production assets are built in geographically disparate locations where much of the grid does not exist.

Berkshire's energy operation, BH Energy, will report very low earnings in 2023, only in small part due to lower volumes of power at the electric utilities but mostly for an accrual for losses relating to wildfires in Oregon and Northern California. During 2023 BHE increased its accrual from \$400 million to \$2.3 billion, net of about \$500 million in reinsurance recoverable. The pre-tax charge is \$3 billion, not insignificant to a business that earns close to \$5 billion (gross of Berkshire's interest) in a normal year. While the accruals are non-cash in nature (for the moment), reported earnings will be net of the accruals. Hence, BHE will report much lower profits than economic earning power suggests.

Including the loss accruals, the energy group likely earned \$1.4 billion in pre-tax income in 2023 and \$2.6 billion after taxes and non-controlled interest for Berkshire's benefit. The larger net figure is not a typo. BHE's tax rate will run negative 138% this year, or thereabouts, earning sizable production and investment tax credits which help Berkshire in whole. Use of accelerated depreciation also drives the current tax rate downwards. Since the acquisition of MidAmerican in 1999, Berkshire's growing roster of energy businesses have *never* sent a dime of profit to Omaha, instead retaining all profit to grow the asset base. For the last 19 years, BHE spent an estimated \$92.4 billion in capital expenditures against only \$36.2 in depreciation charges. Capex at BHE will total \$9.5 billion and likely rise to \$10 billion and growing over the next several years. A table breaking down annual and cumulative capex and depreciation for BHE, BNSF and the whole of Berkshire can be found in the appendix. Where Berkshire's energy operation retains all profit and adds a like amount of debt to finance growth, competitors send 75% of profits, on average, to shareholders as dividends. To the extent competitors want to grow, they must find new capital to replace funds sent out the door. The difference is a huge competitive advantage in Berkshire's favor, as is Berkshire's willingness to spend massive sums growing the energy operation.

BHE has \$50 billion in equity capital (including non-controlling interests and what was a big investment in BYD that Berkshire began liquidating in 2022). Equity capital will more than double in size over the next decade. BHE has a number of non-controlling assets as a result of a number of natural gas distribution assets and the LNG export terminal acquired from Dominion two years ago already discussed that BHE now owns 75% of, up from 50%. In addition, Berkshire itself only owns 92% of BHE. As a result of these layers of non-controlling interests, Berkshire's share of total equity is only \$47.6 including BYD and a few other stocks in rabbi trusts and \$44.8 billion excluding these investments.

Berkshire Hathaway Energy (92.0% owned)	
Revenues Total	\$26.4 B
Energy Operating Revenue	\$21.7 B
Real Estate Operating Revenue	\$4.2 B
Other Income (Loss)	\$0.45 B
Pre-tax Income (Excludes gain/loss BYD and invest.)	\$1.4 B
Income Tax Expense (Benefit)	\$-1.9 B
Net Income (GAAP)	\$3.3 B
Non-Controlling Interests of BHE Subs	\$0.4 B
Net Earnings Attributable to BHE	\$2.9 B
Non-Controlling Interests	\$2.29 B
Preferred Stock Dividend to BRK	\$0.80 B
Net Earnings Attributable to BRK	\$2.6 B
Net Earnings Attributable to BRK (Adjusted for cash taxes)	\$3.4 B
Net Earnings Attributable to BHE (Adjusted for cash taxes)	\$4.1 B
Net Earnings BHE Adjust Pacificorp Wildfires 1.6B pretax	\$5.364 B
Net Earnings BRK Adjust Pacificorp Wildfires	\$4.56 B
Reported Tax Rate (Derived MD&A-not cash adjusted)	-138.0%
Cash Tax Rate (Deferred taxes exceed reported tax)	-194.0%
Goodwill (From BHE 10-Q, 10-K)	\$11.5 B
Deferred Tax Liability (Including \$1.7B for investments)	\$12.5 B
Amortization of Intangibles	\$0.135 B
Depreciation	\$3.9 B
Capital Expenditures (Mgt. Estimate)	\$9.5 B
BYD and Other NDC Trust Stocks; BYD \$6.868B)	\$3.3 B
BHE Equity (Including BYD, NDCs, Rabbi and Non-Control)	\$50.0 B
BHE Non-Controlling Interests (50% ETT, 50% Iroquois)	\$1.3 B
BHE Equity Net of BHE Non-Controlling Interests	\$48.7 B
BHE Equity Net of NCI and Net of BYD/Investments	\$45.4 B
BRK Non-Controlling Interests	\$3.9 B
BRK Equity in BHE	\$44.8 B
BRK Equity (Including \$3.5 B Investments Net of DTL)	\$47.6 B
BRK Equity (Excluding \$3.5 B Investments Net of DTL)	\$44.8 B
Total Assets (Including BYD and Investments)	\$137 B
Debt	\$54.3 B
Cash	\$3.0 B
Interest	\$2.391 B
After-Tax Interest	\$1.889 B
ROE GAAP w/ % DTL Includes \$9.7 billion goodwill)	6.7%/10.7%*
ROE (Adjusted for cash taxes)	8.2%/12.2%*
ROC Net of Cash	5.9%/7.9%*
Estimated BHE Value (Gross of BRK NCI and With Investments)	\$91-98 B
Estimated BRK Value With BYD Net of Tax and NCI	\$84-90 B
Implied P/E	15-16

*Higher Return Excludes 2023 Pacificorp Wildfire Loss Accruals

Assets of more than \$137 billion are nearly 13% of Berkshire total assets. It should surpass the railroad in value to Berkshire within the next four or five years, maybe sooner, and using a conservative valuation may pass the passive investment in Apple in size, even assuming no further sales of Apple shares. Either side of that bet would be a good one.

Coal is being deemphasized outside of China and India, putting BHE far ahead of the curve in the transition of the grid to renewables. Only 5% of BHE net property and equipment was related to coal generation. The three regulated utilities closed 16 coal-fired plants from 2006 to 2021, will close another 16 by 2030 and phase out its final 14 by 2049. 22 of the remaining coal units are owned by PacifiCorp. BHE further intends to retire all of natural gas-fired production units by 2050. Our infrastructure growth, here and abroad, cannot be fueled exclusively with alternatives, making Berkshire's energy assets in the U.S., Canada and the U.K. increasingly valuable in a world inclined to not make large investments in "dirty" assets. Underinvestment alongside a growing population will make evident the attractiveness of this terrific group. You should expect to see the utility and energy businesses grow and grow in importance to Berkshire's shareholders. The collection of assets will generate very good returns in a world of low to moderate interest rates for years to come.

An oddity of Berkshire's structure is within which subsidiaries various investments are made. Two such creatures exist within BHE. In addition to the energy operation, MidAmerican energy houses what is now the country's largest residential real estate brokerage firm and equally large brokerage franchisee networks. Home Services of America (or BHHS as it's known in the industry) is rolling up many of the nation's major metro market high-end residential brokerages. Some are formally rebranded as BHHS while others retain their original branding. Huge by revenues but skinny by margin, the real estate business will do \$4.2 billion in revenues (16% of BHE total) on more than \$125 billion in sales volume. Volumes and profits are way down with higher mortgage rates and very little refinancing activity. HSA is a capital-lite business with huge volumes and top-line revenues. Rising interest rates from the second half of 2021 through 2023 crushed demand for mortgage refinance activity and volume, and thus profits. Mortgage rates rising from less than 3% to as high as 8%, coupled with what was rapidly rising housing prices made housing affordability quite poor. The industry still has a shortage of supply, but demand has materially softened.

BHE's other oddball investment is a \$232 million investment at cost in BYD, a Chinese electric vehicle and battery manufacturer, which soared to \$7.7 billion at year-end 2021. Berkshire began trimming the position, leaving \$2.0 billion in market value at year-end 2023. We set aside the BYD position in analyzing BHE's utility and energy operations. Investments in common stocks are not assets included in the utility rate base.

Net of the investment in BYD we value BHE between 15x and 16x earnings. Debt cost of capital is 4.4% pretax. Utilities in recent years were typically valued at higher multiples and lack the opportunity set BHE possesses to reinvest profit. Industry market valuations weakened with rising interest rates. On a GAAP basis the business, ex gains or losses in BYD, earned 6.7% on equity in 2023, including goodwill, and 5.9% on capital. Excluding the accruals at PacifiCorp for the 2020 wildfires, return on equity and capital normalize closer to 10.7% and 7.9%, respectively. We estimate profitability higher for the economic use of accelerated depreciation, at 12.2% in adjusted return on equity.

BNSF

Berkshire acquired the 77.5% of BNSF it didn't already own in 2009. The deal cost Berkshire \$34.5 billion, for which it paid \$15.9 billion cash, \$10.6 billion in Berkshire shares trading for 1.3x book value and assumed \$8 billion debt. The equity piece of the purchase was \$34 billion, which was marked up to reflect a \$1.1 billion on the original \$6.6 billion investment that was worth \$7.7 billion at the valuation of the deal. Berkshire "really" paid \$33 billion. The acquisition added \$15 billion in goodwill to the BNSF balance sheet. Regardless, since BNSF joined Berkshire in February 2010, *nearly all* profits earned by the railroad were and are sent to Omaha. The rail retained no profit for more than a decade, and our valuation of the business is in a range of \$120 to \$140 billion. With 32,500 route miles of track in 28 western states, the railroad is closely comparable in size to Union Pacific, which closed 2023 with a \$150 billion market cap.

Revenues and profit are very similar between BNSF and Union Pacific. Comps can be dangerous with Mr. Market doing his thing. With equity ironically precisely matching BNSF's \$50 billion, only \$14.5 billion higher than at year-end 2010, the rail will earn a very depressed 10.3% on equity, 10.9% with our shrinking tax adjustment, and 8.9% on capital. Our higher normalized returns are listed in the table.

BNSF	
Revenues	\$23.7 B
EBIT	\$7.8 B
Pre-tax Income	\$6.8B
Net Income (norm tax rate now 24.0%)	\$5.2 B
Net Income (cash tax adjusted)	\$5.5 B
Normalized Net Income	\$7.0 B
Goodwill (BNSF SEC and STB filings)	\$16.4 B
Equity (estimated from STB and GAAP filings)	\$50.0 B
Total Assets	\$95.5 B
Debt (ex-lease)	\$23.5 B
Cash	\$3.0 B
Interest	\$1.035 B
After-Tax Interest	\$0.818 B
Deferred Tax Liability	\$15.3 B
Equities as an Investment (None now)	n/a
Depreciation and Amortization	\$2.6 B
Capital Expenditures	\$3.8 B
ROE GAAP Net Income	10.3%
ROE Adjusted for Cash Taxes 14.0% Normalized	10.9%
ROC Net of Cash 11.1% Normalized	8.9%
Estimated Value	\$120-140 B
Implied P/E (on net adjusted for cash taxes)	17-20

BNSF is likely to report \$5.2 billion in GAAP income on \$23.7 billion in revenues for 2023. Like BHE, a portion of capital expenditures at the railroad benefit from use of accelerated depreciation, creating a large deferred-tax liability (estimating \$15.3 billion now). On a cash tax basis, BNSF earns closer to \$5.5 billion and on normalized earnings nets \$7.0 billion. As stated earlier, the degree to which capex exceeds depreciation is in decline. You can't add track miles to a mature network, and much of the improvements in additional track in high-traffic corridors and tunnel expansion to accommodate intermodal's double stacking of containers has largely run its course. We'll see where this heads prospectively. Freight trains can be four times more fuel efficient than trucks.

Operating revenues across all mixes of freight shipped were weak in 2023 with the exception of new autos and trucks. Consumer, industrial and agricultural products all saw weak volumes. Coal will no doubt phase out in the U.S. and Europe, but perhaps more slowly than those racing to net-zero carbon believe we can get there. It's a product category that will weaken which BNSF will have to replace or lose that portion of volume over time. BNSF further benefits from a lack of new pipeline construction. Shipping oil by rail is far less efficient than by pipeline. Thank goodness the rail network is already in place.

Despite perhaps fewer avenues for growth capex at BNSF, modernization in network and assets continues, and like the energy businesses, the rail benefits from its location in the faster growing west. Trade with Asia, depressed for several years, finally picked up late in 2023. The industry was a *huge* beneficiary of the TCJA tax code change at the end of 2017 on myriad fronts.

BNSF is naturally hostage to economic growth but has also been late to adopt logistical efficiencies that its peers already implemented or are in the process of doing so. Specifically, all the major Class 1 rails except BNSF adopted "Precision Scheduled Railroading" which in a nutshell runs trains on a fixed

schedule between points on the network (similar to the way Southwest Airlines operates), regardless of number of cars, or units. It essentially replaces a hub and spoke method of delivering freight. Observing operating ratio improvement at the competition will likely compel BNSF to adopt PSR despite the growing pains that would come with any major logistical change. It's likely a more difficult logistical tool to implement in a more geographically distributed footprint, but cost and efficiency benefits are likely to compel adoption.

Manufacturing, Service, Retailing and Finance

2023 was another record year for Berkshire's collection of businesses in its Manufacturing, Service, Retailing and Finance group. Great strides were taken over the last several years focused on operating efficiencies among this eclectic assortment of businesses. The group should report \$169 billion in

revenues for 2023. The group grows in line with GDP. Many of the businesses here are mature and don't see much more than modest price and volume increases over time. Some are in decline. A focus on cost and operational execution will see group profits at a record \$12.8 billion.

After-tax profit grew about 3.6% annually since 2019. Most top-line group is organic due to little profit retained in the group. The collection of MSR businesses is performing at the highest level in two decades. Given a higher confidence that group equity is now \$114.1 billion, return on net unleveraged equity at 11.1% is the second highest to 2022 since Berkshire reported group results in its 2003 Chairman's letter.

Even adding back 2020's \$10.6 billion write-down for underperforming Precision Castparts, return on equity is 10.2%. Recall 2017's tax code change which lowered the corporate federal tax rate from 35% to 21%, an immediate 21.5% boost to the bottom line, presuming an increased level of profitability is durable and not subject to being competed away. Among more industries than I would have imagined the benefit seems to have largely stuck. Fully adjusting backward for the write-down and tax benefit, group return on equity is still at least a two-decade record. Sure, there are some individual components needing attention, closure or delivery to private equity, but there appears to be some good blocking and tackling going on. We are going to skip a subsidiary review of the MSR group this year. Volumes across many of the businesses are somewhat weak. All in, this is a decent collection of businesses that with proper focus earn good but not great returns. Private equity would have a field day with many of these as Berkshire runs the group generally with no or little net leverage.

MSR Businesses + Finance & Financial Products	
Revenues	\$169.0 B
Pre-Tax Income	\$16.7 B
Pre-tax Margin	9.9%
Net Income at 23.4% assumed tax rate	\$12.8 B
Profit margin	7.6%
Goodwill (net of 2020 PCP \$10B write-down)	\$34.4 B
Other Intangibles (net of 2020 PCP \$600m write-down)	\$26.9 B
Total Assets (Identifiable + Intangibles)	\$188.0 B
Equity (Write-down 10.0 and 0.6 PCC 2020)	\$114.1 B
DTL (Unallocated estimate)	\$14.5 B
Depreciation of Tangible Assets	\$3.4 B
Capital Expenditures	\$4.3 B
Total Debt (allocated interest expense Ins & Other & Unallocated to Subs)	\$23.7 B
Cash (Offset to Debt; Balance to HoldCo)	\$21.9 B
Interest	\$0.923 B
After-Tax Interest	\$0.778 B
ROE (If equity 10.6B higher for PCP writedown: 8.8%)	11.1%
ROTE (excluding goodwill & other intangibles)	23.8%
ROC Net of Cash	11.7%
Estimated Value	\$230-244 B
Implied P/E	18-19

Berkshire's Barely-Legible Manufacturing, Service, Retail and Finance Group 2003 – 2022

Assets	2023E	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Cash and Equivalents	\$21,923	\$17,813	\$17,863	\$27,830	\$19,547	\$18,313	\$13,519	\$8,073	\$6,807	\$5,765	\$6,625	\$5,338	\$4,241	\$2,673	\$3,018	\$2,497	\$2,080	\$1,543	\$1,004	\$899	\$1,250
Accounts and Notes Receivable	\$43,056	\$41,181	\$35,388	\$32,681	\$33,711	\$32,332	\$28,881	\$11,183	\$8,886	\$8,264	\$7,749	\$7,382	\$6,584	\$5,396	\$5,066	\$5,047	\$4,488	\$3,793	\$3,287	\$3,074	\$2,796
Inventory	\$24,755	\$25,366	\$20,954	\$19,208	\$19,852	\$19,069	\$17,366	\$15,727	\$11,916	\$10,236	\$9,945	\$9,675	\$8,975	\$7,101	\$6,147	\$7,500	\$5,793	\$5,257	\$4,143	\$3,842	\$3,656
Other current assets	?	?	?	?	?	?	?	\$1,039	\$970	\$1,117	\$716	\$734	\$631	\$550	\$625	\$752	\$470	\$363	\$342	\$254	\$262
Total current assets	\$89,734	\$84,360	\$74,205	\$79,719	\$73,110	\$69,714	\$59,766	\$36,022	\$28,579	\$25,382	\$25,035	\$23,129	\$20,431	\$15,720	\$14,856	\$15,796	\$12,831	\$10,956	\$8,776	\$8,069	\$7,964
Goodwill and other intangibles	\$61,301	\$60,919	\$60,422	\$61,358	\$72,219	\$70,611	\$71,503	\$71,473	\$30,289	\$28,107	\$25,617	\$26,017	\$24,755	\$16,976	\$16,499	\$16,515	\$14,201	\$13,314	\$9,260	\$8,362	\$8,351
Fixed assets	\$20,378	\$20,378	\$20,834	\$21,200	\$21,438	\$20,628	\$19,868	\$18,915	\$15,161	\$13,806	\$19,389	\$18,871	\$17,866	\$15,421	\$15,374	\$16,338	\$9,605	\$8,934	\$7,148	\$6,161	\$5,898
Other assets (Equipment Held for Lease)	\$16,517	\$15,584	\$14,918	\$8,360	\$8,215	\$9,307	\$9,391	\$3,183	\$4,445	\$3,793	\$4,274	\$3,416	\$3,661	\$3,029	\$2,070	\$1,248	\$1,685	\$1,168	\$1,021	\$1,044	\$1,054
Total assets	\$187,930	\$181,241	\$170,379	\$170,637	\$174,982	\$170,260	\$160,528	\$129,593	\$78,474	\$71,088	\$74,315	\$71,433	\$66,713	\$51,146	\$48,799	\$49,897	\$38,322	\$34,372	\$26,205	\$23,636	\$23,267
Liabilities and Equity																					
Notes payable	\$907	\$1,310	\$342	\$1,062	\$1,472	\$1,857	\$1,832	\$2,054	\$2,135	\$965	\$1,615	\$1,454	\$1,611	\$1,805	\$1,842	\$2,212	\$1,278	\$1,468	\$1,469	\$1,143	\$1,593
Accounts Payable	\$33,865	\$33,201	\$30,376	\$29,279	\$27,611	\$31,314	\$26,545	\$12,464	\$10,565	\$9,734	\$8,965	\$8,527	\$15,124	\$8,169	\$7,414	\$8,087	\$7,652	\$6,635	\$5,371	\$4,685	\$4,300
Total current liabilities	\$34,772	\$34,511	\$30,718	\$30,341	\$29,083	\$33,171	\$28,377	\$14,518	\$12,700	\$10,699	\$10,580	\$9,981	\$16,735	\$9,974	\$9,256	\$10,299	\$8,930	\$8,103	\$6,840	\$5,828	\$5,893
Deferred taxes (net)	\$14,461	\$11,449	\$9,756	\$9,900	\$12,325	\$10,100	\$9,550	\$12,044	\$3,649	\$3,801	\$5,184	\$4,907	\$4,661	\$3,001	\$2,834	\$2,786	\$828	\$540	\$338	\$248	\$105
Term debt and other liabilities	\$22,828	\$23,835	\$17,521	\$17,795	\$16,215	\$16,247	\$19,810	\$10,943	\$4,767	\$4,269	\$4,405	\$5,826	\$6,214	\$6,621	\$6,240	\$6,033	\$3,079	\$3,014	\$2,188	\$1,965	\$1,890
Total liabilities	\$72,061	\$69,795	\$57,995	\$58,036	\$57,623	\$59,518	\$57,737	\$37,505	\$21,116	\$18,769	\$20,169	\$20,714	\$27,610	\$19,596	\$18,330	\$19,118	\$12,837	\$11,657	\$9,366	\$8,041	\$7,888
Non-controlling interests	\$920	\$729	\$921	\$635	\$607	\$572	\$570	\$579	\$521	\$492	\$456	\$2,062	\$2,410	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Berkshire equity	\$114,949	\$110,717	\$111,463	\$111,966	\$116,752	\$110,170	\$102,221	\$91,509	\$56,837	\$51,827	\$53,690	\$48,657	\$36,693	\$31,550	\$30,469	\$30,779	\$25,485	\$22,715	\$16,839	\$15,595	\$15,379
Equity w/ PCP \$10.6B W/D Added Back	\$125,549	\$121,317	\$122,063	\$122,566																	
Income Statement																					
Revenues	\$168,966	\$167,293	\$153,012	\$134,097	\$142,675	\$148,809	\$126,533	\$120,059	\$107,825	\$97,689	\$95,291	\$83,255	\$72,406	\$66,610	\$61,665	\$66,099	\$59,100	\$52,660	\$46,896	\$44,142	\$32,106
Operating expenses	\$151,491	\$150,293	\$137,874	\$122,410	\$129,332	\$128,501	\$117,026	\$111,383	\$100,607	\$90,788	\$88,414	\$76,978	\$67,239	\$62,225	\$59,509	\$61,937	\$55,026	\$49,002	\$44,190	\$41,604	\$29,885
Net interest expense	\$770	\$781	\$586	\$798	\$416	\$265	\$264	\$214	\$103	\$109	\$135	\$146	\$130	\$111	\$98	\$139	\$127	\$132	\$83	\$57	\$64
Pre-tax income	\$16,705	\$16,219	\$14,552	\$10,889	\$12,365	\$12,308	\$9,243	\$8,462	\$7,115	\$6,792	\$6,742	\$6,131	\$5,037	\$4,274	\$2,058	\$4,023	\$3,947	\$3,526	\$2,623	\$2,481	\$2,157
Non-Controlling Interest	\$110	\$107	\$63	\$63	\$64	\$64	\$61	\$53	\$65	\$64	\$57	\$249	\$310	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Income taxes	\$3,829	\$3,600	\$3,340	\$2,526	\$2,929	\$2,880	\$2,974	\$2,778	\$2,367	\$2,260	\$2,455	\$2,183	\$1,688	\$1,812	\$945	\$1,740	\$1,594	\$1,395	\$977	\$941	\$813
Net Income	\$12,766	\$12,512	\$11,149	\$8,300	\$9,372	\$9,364	\$6,208	\$5,631	\$4,683	\$4,468	\$4,230	\$3,699	\$3,039	\$2,462	\$1,113	\$2,283	\$2,353	\$2,131	\$1,646	\$1,540	\$1,344
Income Tax Rate	22.9%	22.2%	23.0%	23.2%	23.7%	23.4%	32.2%	32.8%	33.3%	33.3%	36.4%	35.6%	33.5%	42.4%	45.9%	43.3%	40.4%	39.6%	37.2%	37.9%	37.7%
Profit Margin	7.56%	7.48%	7.29%	6.19%	6.57%	6.29%	4.91%	4.69%	4.34%	4.57%	4.44%	4.44%	4.20%	3.70%	1.80%	3.45%	3.98%	4.05%	3.51%	3.49%	4.19%
Return on Equity																					
Return on Equity	11.11%	11.30%	10.00%	7.41%	8.03%	8.50%	6.07%	6.15%	8.24%	8.62%	7.88%	7.60%	8.28%	7.80%	3.65%	7.42%	9.23%	9.38%	9.77%	9.87%	8.74%
Return on Tangible Equity	23.80%	25.13%	21.84%	16.40%	21.05%	23.67%	20.21%	28.10%	17.64%	18.84%	15.07%	16.34%	25.45%	16.89%	7.97%	16.01%	20.85%	22.67%	21.72%	21.29%	19.12%
Return on Capital	11.68%	11.39%	10.56%	8.93%	8.63%	8.91%	5.96%	6.19%	8.73%	9.09%	8.48%	7.82%	8.19%	7.25%	3.59%	7.06%	9.36%	9.36%	9.59%	9.59%	8.79%
ROE w/ \$10.6B PCP W/D Added Back	10.17%	10.31%	9.13%	6.77%																	

Insurance

Berkshire's insurance operation is the best in the world. There isn't a close second. Berkshire's collection of insurers underwrites property/casualty insurance and reinsurance through three groups and combined is the highest rated insurance operation in the world. GEICO underwrites directly marketed private passenger auto insurance and is the third largest auto underwriter in the U.S. with 13.8% market share. The Berkshire Hathaway Primary Group includes an assortment of commercial insurers writing medical malpractice, workers' compensation, auto, general liability, and several property and specialty coverages for businesses of all sizes. The Berkshire Hathaway Reinsurance Group writes excess-of-loss and quota-share coverages through National Indemnity since 1967 and General Reinsurance since 1998. The reinsurance group also underwrites life and health reinsurance coverages. The reinsurance group is the fourth largest reinsurance operation in the world by premiums written but by far the largest by surplus, or book value. Berkshire acquired Alleghany in October 2022. Alleghany operated Trans Re, a \$5 billion premium volume reinsurer, and RSUI and CapSpecialty who write \$2 billion in combined specialty premium volume.

GEICO

The private passenger auto insurance industry experienced the most unusual four-year period. The pandemic took cars off the road for a year. Fewer drivers mean fewer accidents, so claims frequencies

were far below historical and thus actuarially assumed levels. Offsetting fewer claims was an increase in severities. Fewer cars on the roads, and the perception of fewer ticket-writing police, encouraged speeding and reckless driving, hence more expensive claims paid to fix cars and people. With a welcome surprise of far lower frequencies of claims, GEICO initiated a “giveback” program of crediting policyholders with discounts on renewals. Some insurers simply cut checks as refunds to policyholders. Auto insurance is written on an admitted basis, whereby underwriters file rate applications with each state insurance commission for approval. Regulators were not going to let the industry reap a huge one-time economic benefit at the expense of drivers on the roads for fewer miles than presumed.

Refunds and credits drove reported written and earned premiums downward for the duration they were in place, reducing premiums by \$2.9 billion. In GEICO’s case the givebacks ran through a portion of the fourth quarter in 2020. Once clear of the givebacks, premiums earned rose 18% over 2020 through 2021. Underwriting results in 2021 produced a satisfactory 96.7% combined ratio (losses and underwriting expenses combined as a percentage of premiums earned – essentially a profit margin). Not unexpectedly, claims frequencies rose in tandem and by the second half of 2021 severities rose substantially again. Competitors likewise saw a deterioration in margins due to the same inflationary factors. Inflation is a real thing in auto repair and medical expenses. Both rose very quickly and eviscerated private passenger auto underwriters in 2022. The industry bled money, exacerbated by capital hits from both declining bond and stock prices on the investment front.

As is typical in private passenger auto insurance, when the industry bleeds due to high losses, it gets price. It got it sporadically in 2022 and 2023. Certain markets like California were slow to award sufficient price to insurers and many lost money for longer in the state than in others. 2023 saw a reversal of that lag and now insurers in most markets are reporting strong profits. GEICO will flip from a \$1.9 billion underwriting loss on \$39 billion in premium earned in 2022 to likely earning \$3 billion or more on similar premiums earned in 2023, a 7.7% underwriting margin. GEICO and Progressive shoot for 4% on average. A certain mutual fund manager believes Tesla can underwrite and sell insurance at a 40% margin. There, I went and said it.

GEICO and Progressive are both taking market share from State Farm, who not long ago had 25% of the auto market in the U.S. Both companies are likely to pass State Farm’s 16.8% share in the next three or four years. GEICO operates largely with no agents or brokers involved in distribution. Paying a gecko is cheaper than paying commissions, thus GEICO’s underwriting expenses are at a far lower portion of premiums earned than the competition. For this cost advantage, they tend to incur higher losses. Losses have been too high; thus, Berkshire shook management, placing Todd Combs temporarily in the CEO role, also retaining management responsibilities for a matching portion of Berkshire’s equity portfolio managed by Ted Weschler. Tony Nicely had run GEICO for 25 years before retiring in 2018.

GEICO remains behind Progressive in using technology in underwriting and claims management but is focused on closing the gap. Progressive leads in telematics, or the use of GPS in monitoring cars and driving habits to help properly rate risk and in setting premium. While the gap can be closed, Progressive has been more profitably gobbling up market share and passed GEICO last year as the second largest private passenger auto insurer in the U.S. GEICO maintains a huge cost advantage over the field but needs to solve losses that are running too high.

The good news about auto insurance is it’s very short-tail in nature. Premiums are reset every six or twelve months and losses develop quickly. Roughly 60% of losses are settled in the first year subsequent to a claim being filed. Nearly 100% of losses are developed and paid by five years. Inflation in auto parts, vehicle replacement, medical costs and litigation expenses are running at very high levels. GEICO and its competitors are benefiting from several rounds of price increases granted by most state insurance commissioners during 2022 and through 2023. Again, in states and markets where regulators were slow to

award price, the industry is getting it even into early 2024. Price tends to fix problems quickly, but it will take great ongoing effort on GEICO's part to regain its low-cost provider position versus Progressive. Progressive tends to lead when filing for rate increases. There exists a natural lag in profitability between the two. It will take more than a bunch of rate hikes to fix GEICO's loss of competitive advantage. Making a bunch of money in 2023 and into 2024 eases the pain.

BH Primary

Berkshire's Primary Group includes its long-held Homestate Companies, MedPro, GUARD, National Indemnity Primary, U.S. Liability, Central States Indemnity and MLMIC. The largest company in the mix is Berkshire Hathaway Specialty which Berkshire seeded on a de novo basis (started from the ground up) in 2013 with a management team hired away from AIG, specifically Lexington Insurance, AIG's excess and surplus division. It quickly became the largest company in the Primary group of commercial insurers. It's always worth keeping an eye on new insurers charging ahead in the capture of market share. Berkshire is famous for a willingness to walk away from underwriting when prices are inadequate. BH Primary saw 2023 written premium up 11.3% through September led by BH Specialty and BH Direct. Underwriting margins were a solid 8.3% for the nine months against close to breakeven a year ago. As with reinsurance, a mild catastrophe year helped results. Two of Alleghany's insurers joined this group in 2022, RSUI and CapSpecialty. Between them they write over \$2 billion in premium.

Reinsurance

Berkshire insures and reinsures against a large and diverse number of loss events. Prior pandemics and epidemics, particularly the SARS outbreak in 2003, heightened the insurance industry's awareness of the risk posed by a widespread global outbreak. Business interruption coverage is often sold as part of a business owner's policy and covers damage to property or equipment. It is a *property* cover. SARS is/was a highly contagious and lethal coronavirus, much more so than COVID-19. The SARS outbreak spread to 29 countries and fortunately killed fewer than 1,000 people, none in the U.S. Despite being a property cover, policy language then often didn't specifically exclude pandemics, viruses and communicable diseases. Even if an outbreak does physically cause the closure of a place of business, a restaurant for example, loss claims are limited to loss of income and remediation over the short period of time to clean and disinfect the property. Subsequent to SARS, most of the industry specifically included exclusions with clarifying policy language.

When the degree of activity suspended by the pandemic was made apparent, it became clear that insurers would be challenged legally, furthered by some public policy makers suggesting that even though business interruption is a property line that the industry should be responsible for its "fair share" of the cost of business losses. It became apparent that even though the industry had learned their lesson with SARS and others, (MERS, H1N1/Swine Flu, Ebola, Zika and the bird flu) there were policies in force with loosely written or non-exclusionary policy language. Several European reinsurers writing in the Lloyd's market were at big risk of loss. Berkshire likewise had some exposures that would likely be challenged. In aggregate, given policy limits and Berkshire's extremely diversified book of insurance business, it was in far better shape than most from the outset.

Industry losses developed (so far) far better than many expected in the teeth of the pandemic. Swiss Reinsurance, the largest reinsurance company in the world by net reinsurance premiums written suggested industry losses might approach \$100 billion. Losses are still developing but it looks like COVID-19 will be half as expensive, but still the third largest catastrophe behind Hurricane Katrina and the 9/11 terrorist attacks on the U.S.

In response, rates materially hardened for the three years 2021 through 2023. Berkshire's reinsurance property/casualty's premiums written rose 6.4% in 2021, 16.7% in 2022 and likely 3.7% in 2023. Reported results include Alleghany's reinsurer, TransRe, which was writing \$5 billion in premium volume prior to the acquisition and slightly more for the first three quarters in 2023. The year just ended was the mildest for catastrophes in several years. Coupled with higher volumes, profitability soared. Net income in property/casualty reinsurance will double to over \$4 billion in 2023, a portion due to the inclusion of TransRe.

Berkshire maintains a stronger capital base than any in the reinsurance industry and is massive in scale. Berkshire's combined statutory surplus (conservatively defined as equity or book value) against which it writes business dwarfs all players. Expect Berkshire's statutory surplus to total \$330 billion at year-end 2023, up from \$272 billion in 2022 and \$301 billion in 2021. The large swings down and then back up were due to both stock market declines and gains in 2022 and 2023, respectively, and also to high insurance losses in 2022 with far fewer last year.

GEICO writes more premium volume than any of Berkshire's insurance companies, \$39 billion in 2023, but requires by far the least amount of capital, no more than \$15 billion. Private passenger auto insurers write on an admitted basis and can write \$3 in premiums for every \$1 in statutory surplus. GEICO *could* write current volume with only \$13 billion in capital. They more likely assign \$25 to \$30 billion to GEICO, thus write at 1.5x or less, leaving loads of surplus capital.

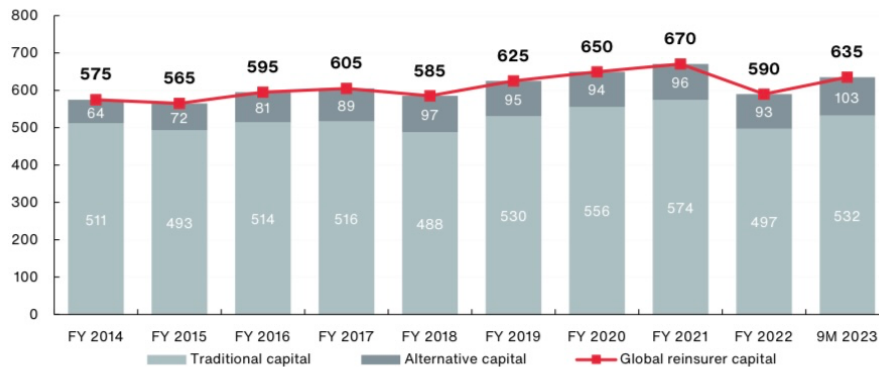
BH Primary will write just over \$18 billion in premiums in 2023. This group of insurers requires more capital per dollar of business written than in auto, but with \$18 billion in annual premiums requires perhaps 5% of Berkshire's combined insurance capital. Primary could write current volume with \$18 billion in statutory surplus, but for conservatism's sake, assign it \$30 billion, thus writing roughly 60 cents of premium per dollar of capital.

The reinsurance operation at Berkshire, National Indemnity (including retroactive reinsurance and periodic payment annuity), General Reinsurance and now Alleghany's TransRe holds and requires most of the insurance capital. Berkshire Hathaway Reinsurance Group, as the combined entity is now known, likely wrote \$27 billion in premiums during 2023 with reinsurance surplus of at least \$270 billion (ascribing more capital to GEICO and the primary group than is needed). Thus the reinsurance group wrote perhaps 10 cents of premium for each dollar of statutory capital on the books. I don't know what impact the transfer of BNSF will have on statutory surplus. I'd guess very little, despite \$50 billion in equity capital for the railroad as ratings agencies would assign little capital to a privately held railroad. Makes no sense, but what does these days?

By comparison, the entire global reinsurance industry has a combined surplus of roughly \$635 billion at September 30, 2023 when including \$103 billion in alternative capital such as catastrophe bonds and insurance-linked securities. The industry will write roughly \$350 billion in premiums. **Berkshire writes less than 8% of combined reinsurance industry premium volume but has *HALF* of industry traditional equity capital and 43% when including alternative capital.** If anybody wonders how Berkshire can have so much of its insurance companies' investments in common stocks instead of fixed-income securities, look no further.

Reinsurance industry capital stumbled back some in 2023 from the beating it took in 2022. A pummeling of most investment asset classes in a year with bad catastrophes is a bad combination. Healing in 2023 can be attributed to retained earnings, improved bond and stock prices and the arrival of new alternative capital. The industry faced inflation levels not seen in four decades which pushed interest rates upward (and bond prices downward). A deteriorating global economy compelled a widening of credit spreads. Real estate prices plateaued and fell in some markets. Total industry capital plummeted 17% in nine

Exhibit 1: Global Reinsurer Capital (USD Billions)



Sources: Company financial statements / Aon's Reinsurance Solutions / Aon Securities Inc.

months from year-end 2021 to September 30, 2022 before recovering 7.6% in 2023. With many insurers writing maximum business that capital would allow, pricing could only go one way,, hence, pricing was strong during most of the last two years. My understanding is January 1, 2024 renewals were strong but not at the same rates of growth in

2023. It has been a good time to be the big dog with the fortress balance sheet. A number of companies don't have the balance sheet strength to write as much business as they would like. The awful market for capital combined with a bad catastrophe year, Berkshire was teed up for 2023. It assumed large volumes of catastrophe risk which it hadn't taken in some time. Unlike the rest, you will *never* hear Berkshire say they wrote the *maximum* business that capital would allow.

Underwriting requires reserves to cover losses. Equities are a risk asset (railroads even more so). North American reinsurers excluding Berkshire allocate more than two-thirds of invested assets to investment grade fixed-income and nearly 10% to cash. Risk assets comprise less than a quarter and in addition to common stocks of public companies include non-investment grade bonds and alternatives such as private equity, real estate, venture capital and hedge funds. Markel, Fairfax, and formerly Alleghany, are often compared to Berkshire in structure, but none come close to Berkshire by surplus capital. Of all North American Reinsurers, Fairfax and Markel come closest to Berkshire in asset mix, but with only a third or so of invested assets in risk assets. Fairfax writes more premiums than equity but must lean heavily on the retrocessional market to do so. Earned premiums were \$8 billion less than written and three times equity in 2022. Written premium volume was unchanged in 2023 but they retained more business. Stocks are less than 15% of investment assets. Fixed income and cash exceed written premium. It's a similar story at Markel, where risk assets comprise roughly a third of invested assets. Markel retains more premium volume and premiums earned match statutory capital. Stocks comprise one-third of investments with bonds and cash totaling the remaining two-thirds. Several investments in private businesses are made largely with surplus capital but will necessitate having the preponderance of investments in fixed income and cash until capital relative to premiums earned grows.

The two largest insurers in the world by premium written are Swiss Re and Munich Re. Where Berkshire's reinsurers typically write less than 10 cents per dollar of capital, Swiss Re writes more than a dollar, Munich Re typically writes a dollar. Equities are 4% of investment assets at each. At neither has equity grown for a decade. These are leveraged bond portfolios requiring new capital at every major catastrophe.

Berkshire will likely end 2023 with \$346 billion in equity securities, 71% of its \$415 billion investment portfolio. Total insurance group premiums earned for all of Berkshires insurers will total \$82 billion in 2023, or 27% of average statutory capital over the course of 2023. Reinsurance premiums earned are less than 10% of reinsurance capital.

Insurance Operations - Estimated at December 31, 2023		Insurance Investments (December 31, 2023 estimated)	
Premiums Earned (Excludes Retroactive Premiums Earned)	\$82.0 B	Equity Securities (Includes \$10.7B OXY Warrants/Preferreds)	\$345.5 B
Statutory Surplus (Equity) \$237B 2020; 301B 2021; 272B 2022)	\$330 B	Fixed Income Securities	\$22.5 B
Book Value GAAP (Reconciling to Subs - likely inaccurate)	ny	Cash	\$120.0 B
Float (147B '21; 164B 2022)	\$168 B	Other (\$0.850 BHE Pfd: Was 3.75, 1.45 paid 21, 800 paid 22; Seritage Term Loan)	\$2.0 B
Losses Paid	\$52 B	Total Investment Assets (326.1 Y/E 2019; 363.1 2020; 446.3 Y/E 2021; 414 Y/E 2022)	\$490.1 B
Expected After-Tax Underwriting Gain 2023:	\$6.580 B B	<u>Investment Income and Earnings (to reconcile)</u>	
Normalized Underwriting Margin: 5% Pre-tax (Ex Retro and PPA Amortization)	\$4.1 B	Dividends (Annualized at 12/31; Excludes OXY Pfd) Tax at 13.125% for less than 20% owned	\$5.0 B (1.45% div yield)
Normalized Retroactive and Periodic Payment Annuity Margin Adjustment	\$1.4 B	Retained Earnings of Common Stocks; Tax at 3%	<u>\$13.5 B (3.89% REY)</u>
Combined Normalized Pre-tax Underwriting Profit	\$5.5 B	Total Earnings of Common Stocks	\$18.5 B (18.74 P/E; 5.34% EY)
Normalized Underwriting Net Profit	\$4.3 B		
Goodwill (Includes \$3.1 B from Alleghany)	\$16.5.0 B	Divs on OXY Preferred (Recently paid as cash)	\$0.624
Other Intangibles (All from Alleghany)	\$2.659 B	Interest on Fixed Income and Cash; Tax at 21%	\$7.0 B
DTL (Investment Gain+Def Charges Reins-Unpaid Losses/LAE-Unearned Premiums)	\$51.0B		
Insurance Estimated Value		Total Pre-Tax Earnings of Investments (\$17.3B 2019)	\$26.1 B
Total Investment Assets	\$490 B	Optionality of Cash > One-Year Losses Paid #	\$0.760 B
Stocks premium/discount 15% 2021 (-19B 2019; -39B 2020; 50B 2021; 0 2022)	\$0 B	Pre-tax Earnings with Optionality of Surplus Cash **	\$26.86 B
Capitalized Value from Underwriting	\$65 B	Paid and Hypothetical Taxes (11.0% blended; RE of stocks 3%)	\$3.177 B
Estimated Value	\$555 B	Investment Net Income	\$23.7 B

Berkshire's insurance group's intrinsic value at year-end 2023 is estimated at \$555 billion, 54% of Berkshire's total intrinsic value per our sum of the parts method. After-tax normalized underwriting profit is capitalized at only 15x earnings, or \$65 billion. It's the highest proportion of intrinsic value in several years. Surplus surplus (stop it damn spellchecker I meant to say that) capital is upstreamed to Omaha as dividends periodically for empire building elsewhere. The appraisal of Berkshire's insurance operation presumes a 5% pre-tax underwriting profit, so \$4.1 billion on \$82 billion of earned premium in 2023. As discussed, we also exclude loss accruals for retroactive reinsurance and periodic payment annuity business for its unique accounting treatment where on a GAAP reported basis, yearly reported losses will nearly always pull downward overall underwriting margins, even if over time the benefit of the use of float greatly exceeds actual losses paid. Losses are capped as well and our method ignores any upfront profitability from premiums earned. We formerly did not exclude the loss accruals but found ourselves explaining why Berkshire's overall reported insurance profitability wasn't higher. Now it's in.

Those doing their own work can use whatever assumptions they like for underwriting profitability. In aggregate, our capitalized value for insurance underwriting is small relative to earning power from the insurance investment portfolio and absolutely small relative to all of Berkshire. Whether Berkshire underwrites at a pre-tax 5% or at breakeven really doesn't matter. Where underwriting drives the profitability bus at most insurers, investments drive it at Berkshire's massively overcapitalized insurance operation while underwriting finances its growth for free or less than free.

Finally, when assessing the earning power of the insurance enterprise, annualized investment income at year-end 2023 consists of interest and dividends received totaling \$12.6 billion pretax (including \$640 million in dividends on an Occidental preferred). The balance comes from ignoring unrealized gains and losses and recognizing retained earnings of the stock market holdings, totaling \$13.5 billion today. Adding \$5.0 billion in dividends from the stock portfolio to \$13.5 billion in retained earnings totals \$18.5 billion of earnings on the stock portfolio. The earnings yield of 5.3% is the only amount derived in the appraisal of group earnings from the stock portfolio. If the portfolio earns more than 5.3% over time, then the appraisal is conservative. A 10.3% return on Berkshire's stocks adds an additional \$17.3 billion to earning power above the earnings yield on the portfolio. No wonder everyone in the insurance game wants to be Berkshire.

Pilot Travel Services

Pilot Flying J is a great, now complete, acquisition. With 800 locations across the US and Canada, the travel center business generates \$55 billion in revenues. Pilot is opening new locations, presumably financed internally with retained cash flow. Pilot Flying J's website identifies new location information. Most are smaller format centers located away from the interstate highway system. In late 2019 Pilot launched the "One9 Fuel Network," which gives drivers and smaller truckers access to personalized credit and consolidated rewards points at smaller locations under the Speedway, Mr. Fuel, Pride and Stamart travel center brands. 250 locations will either be acquired or partnered with, with Pilot operating the stores. The bulk of the stores are/were under the Speedway umbrella, owned by Marathon Petroleum. Pilot owns a fleet of tanker trucks, an LNG business, and partnered with GM to install 2,000 charging stations at each of its travel centers.

Pilot Travel Centers	
Revenues	\$55.0 B
Cost of Good Sold	\$50.6 B
Operating and Other Expenses	\$3.0 B
Interest Expense	\$0.434 B
Pre-tax Earnings	\$0.966 B
Income Tax and Noncontrolling Interests	\$0.367 B
Net Earnings to BRK	\$0.600
PPE	\$8.2 B
Goodwill	\$13.2 B
Other Assets Acquired	\$7.0 B
Notes Payable	\$5.9 B
Other Liabilities	\$4.8 B
Noncontrolling Interests, Redeemable	\$3.37 B
Equity (Gross of \$3.0 B non-tax Remeasurement)	\$14.4 B
Equity (Net of \$3.0 B non-tax remeasurement)	\$11.4 B
Return on Equity (Normalized Net Margin 1.5-2.5%)	7.8%
Return on Equity (Net of \$3.0 B non-tax remeasurement)	9.9%
Estimated Value	\$15-17 B
BRK Estimated Value	\$12-14 B
Implied P/E	15-17

Berkshire originally invested \$2.8 billion for 38.6% of the company in 2017 and last January 2023 bought its next 41.4% for \$8.2 billion (the entire business wasn't for sale in 2017). I estimated at the time of the 2017 acquisition that the entirety of Pilot Flying J was valued at \$7.2 billion. The remaining 20% of Pilot Travel Centers was just acquired in January of this year. Between the initial investment, Pilot retained a portion of income to build out its network of truck stops.

We don't know what the final purchase price was but guess it's somewhere just north of \$3 billion. It appears Pilot is headed to BH Energy for reporting purposes but in the meantime will have its own reporting segment at least in the footnotes and MD&A. We have a summary financials table later in the intrinsic value section of this letter and some figures in the appendix. For entertainment value don't miss the recap of the hijinks surrounding Berkshire's purchase of the remaining 20% which can be found in the "Fun Facts" section earlier in the Berkshire write-up.

Holding Company Assets and Liabilities

Berkshire controls several assets and houses certain liabilities at the holding company level that don't get assigned to the subsidiaries. Assets include a sizable portion of cash and Berkshire's interest in several partially owned companies where Berkshire owns more than 20% and is deemed in a control position. This latter group are carried with accounting treatment known as the equity method, which essentially adds pro rata profit to cost basis and likewise subtracts any portion of profits received as dividends. The Semper

HoldCo	
KHC 26.5%; 325,635m shares (MV 12,042 2023; cash cost \$9.8 B)	\$13.196
KHC Market Value Adjustment	-\$1.154
Additional KHC Deferred Tax Liability/Asset not on BS	\$0
OXY 27.8% common; 224,129m shares (MV \$13,382; cash cost \$ 13.5)	\$14.133
OXY Market Value Adjustment	-\$0.751
Additional OXY Deferred Tax Liability/Asset not on BS	\$0
Other Equity Method (Berkadia, ETT(in BHE))	\$0.436
Itochu, Mitsubishi, Mitsui, Sumitomo, Marubeni) (\$19.7B in Insurance)	\$0
Diageo \$606M, IAG AU Sold, Taiwan Semi Sold (In Insurance)	\$0
BHE Holdings (BYD \$2.394B; Rabbi Trusts/NDCs \$0.830B in BHE)	\$0
Cash (MSR cash assumed to offset MSR debt; Annual in HCO financials)	\$19.010
TOTAL HOLDCO ASSETS	\$44.870
Debt	\$17.206
Additional HoldCo Deferred Tax Liability (All balance to MSR)	<u>\$1.000</u>
HoldCo Net Assets	\$26.664
KHC Eq Method Earnings (increase cost basis; (e) full 21% tax difference)	\$0.952
Divs KHC (\$527m; Reduce basis; Not an offset to Income)	\$0
OXY Equity Method Earnings Normalize \$6B (increase cost basis; (e) full 21% tax	\$0.945
Divs OXY (\$179m; Reduce basis; Not an offset to Income)	\$0
Other Equity Method Earnings	\$0.156
Distributions Received Other Eq Method (\$65m; Reduce basis; Not an offset)	\$0
Intangible Amortization 90% Taxed at 21%	\$1.560
Interest Income; tax 21%	\$0.951
Retained Earnings of BYD/other BHE Stocks; Tax 7%; Not attributed to BHE	\$0.167
Optionality of holdco cash with \$30B permanent: \$4.8B @ 7% - 4%; tax 21%	\$0.000
Interest Expense (Not allocated to subs; 1.45% interest rate!!!)	-\$0.249
Normalizing Net Pension Expense for GAAP Adjustment (Expect Fully Fd 2023)	-\$0.001
Net Investment Income Pre-Tax	\$4.481
Net Investment Income After-Tax	\$3.563
Estimated Value (Investments - HoldCo Debt)	\$26.7

Sum of the Parts method for valuing Berkshire uses the holding company group as a reconciling catch-all when we can't assign certain items directly to the subsidiaries. Summary holding company financials are reported annually.

Using our method, liabilities include \$17.2 billion in debt not assigned to any subsidiary and a nominal \$1.0 billion portion of Berkshire's total net deferred tax liability, likewise unassigned. 2023's annual reconciliation has \$26.7 billion of net asset value held at the holding company producing \$3.6 billion of Berkshire's \$53.1 billion normalized profit for the year.

Equity Method Investments

Kraft Heinz

Kraft Heinz's common shares posted a -5.1% total return loss for 2023, including dividends. As an equity method investment, the decline isn't reflected in Berkshire's financial statements. Berkshire owns 325.6 million shares of Kraft Heinz, 26.5% of the outstanding shares. The cash cost basis is \$9.8 billion. Carrying value under the equity method reflects a tax value markup (non-cash) when Heinz bought Kraft, with book carrying value increased quarterly for Berkshire's proportionate share of reported earnings minus dividends received. Kraft Heinz has also taken writedowns, which Berkshire proportionally reflected. On December 31, 2023, equity method carrying value will be \$13.2 billion and the market value of the position was \$12.0 billion. Carrying value includes Berkshire's proportional share of Kraft's earnings, even if retained by Kraft, and are added to cost basis. Basis is reduced by cash dividends received, \$130 million in 2023. Our holding company value includes a mark-to-market adjustment reflective of market value. Effectively, equity method accounting is a decent proxy for the way we value Berkshire's profits. By stripping market value movement but picking up dividends and retained earnings by the investee, you get to a similar place. No deferred-tax liability is created on unrealized gains using the equity method.

Occidental Petroleum

As mentioned above, Berkshire began accumulating common stock shares of Occidental during the first six months of 2022. During 2023 Berkshire acquired additional shares pushing ownership of Occidental voting rights above 20%. Berkshire thus adopted equity method treatment of the common stock position as of August 4, 2022, and included the investment as an equity method holding on September 30, 2022. Semper journaled the position from an insurance investment to the holding company where we house all equity method investments. Berkshire owned 224.1 million common shares of Occidental at yearend with a \$13.4 billion market value. We estimate cash cost at \$13.5 billion. Because Berkshire is picking up their pro rata share of Occidental's net income, basis is \$14.1 billion which was reduced during 2023 by \$40 million dividends received on the common shares.

We moved ETT to BHE from the holding company for Semper's records. Right or wrong, we treat equity method income at the holding company level. For those reconciling Berkshire's stock market investments to its quarterly SEC 13F filings, know that the Kraft Heinz and Occidental common stock positions remain publicly traded. Our holding company assets include a quarterly mark-to-market adjustment to reflect the current market price.

Berkadia

Berkshire owns what began as a 50% interest in a commercial real estate loan servicer with Jefferies as the partner and operator. Long-standing clients will remember we had owned Leucadia, run by two outstanding investors, Ian Cumming and Joe Steinberg. The duo had no succession plan, so they bought Jefferies, making the investment bank's CEO Dick Handler the succession plan. Berkadia purchased Capmark Financial Group's mortgage loan and servicing business for \$437 million in 2009. Over the years, Berkshire provided a secured commercial paper credit facility of \$1 billion, later increased to \$1.5 billion, to fund mortgage loans, servicer advances, purchase servicing rights and to fund working capital. We rounded up summary figures from Leucadia and then Jefferies for Berkshire's share of carrying values and earnings to infer Berkshire's piece. Initially Berkadia was structured at a 50/50 joint venture. When Berkshire provided the commercial paper facility, its proportional share of rights to net income and distributions increased. We think Berkshire's share increased to 55% from 2020-2022 and to 56.4% in 2023. We are not certain that equity matches income rights. It makes sense that it would. However, until we are more confident the table does not have a roll forward of Berkshire's equity piece. With Pilot wholly-owned, Berkadia, Occidental and Kraft Heinz are now the only equity method investments. Accordingly, we think Berkshire's equity carrying value of Berkadia is \$415 million on September 30, 2023. Since we are down to but one material equity method investment, we'll move Berkadia's income progression here from prior years' appendix.

Year	Berkadia Net Income	Berkadia Distributions
2009	\$20.8	\$0.0
2010	\$16.2	\$29.0
2011	\$29.0	\$23.6
2012	\$38.0	\$37.6
2013	\$84.7	\$69.0
2014	\$101.2	\$72.9
2015	\$78.1	\$89.6
2016	\$94.2	\$100.8
2017	\$93.8	\$67.4
2018	\$80.1	\$41.0
2019	\$88.2	\$65.1
2020	\$84.2	\$45.3
2021	\$159.7	\$70.9
2022	\$152.1	\$85.3
2023	\$67.9	\$75.2

Iroquois Gas Transmission System

Berkshire indirectly owns several equity method investments that are likewise equity method investments at BH Energy. These are pipelines, storage facilities and BHE's now 75% interest in the Cove Point LNG terminal. We do not consider these Berkshire holding company equity method investments but properly treat them as such at BHE.

In addition to Cove Point, equity method assets owned by BHE include; 50% of Iroquois, which owns and operates an interstate natural gas pipeline in New York and Connecticut; 50% of JAX LNG, which is an LNG supplier in Florida serving the growing marine and truck LNG markets; and two-thirds of Bridger Coal, which is a coal mining joint venture that supplies coal to the Jim Bridger generating facility.

Our subsidiary appraisals are conservative, and we have not fully moved multiples upward to capture the full effect of the tax code change. Even without the tax changes, our valuations are very conservative. If the subsidiaries were publicly traded, they would generally command much higher valuations.

The valuations for each operating group are included in the Net Income Basis table seen at the beginning of this section. More granular data for each reporting group is in the appendix.

Simple Price to GAAP Book Value Basis

Simple Per-Share Price to Book Value Basis- "A" Share Data										
	BVPS	Avg BVPS	1x BVPS	1.2x BVPS*	1.75x BVPS	2x BVPS	High	Low	Range vs.	Avg
1994	10,083	9,469	10,083	12,100	17,645	20,166	20,800	15,150		
1995	14,426	12,255	14,426	17,311	25,246	28,852	30,600	20,250	250%	165%
1996	19,011	16,719	19,011	22,813	33,269	38,022	38,000	31,000	227%	185%
1997	25,488	22,250	25,488	30,586	44,604	50,976	48,600	33,000	218%	148%
1998	37,801	31,645	37,801	45,361	66,152	75,602	84,000	45,700	265%	144%
1999	37,987	37,894	37,987	45,584	66,477	75,974	81,100	52,000	214%	137%
2000	40,442	39,215	40,442	48,530	70,774	80,884	71,300	40,800	182%	104%
2001	37,920	39,181	37,920	45,504	66,360	75,840	75,600	59,000	193%	151%
2002	41,727	39,824	41,727	50,072	73,022	83,454	78,500	59,600	197%	150%
2003	50,498	46,113	50,498	60,598	88,372	100,996	84,700	60,600	184%	131%
2004	55,824	53,161	55,824	66,989	97,692	111,648	95,700	81,150	180%	153%
2005	59,337	57,581	59,337	71,204	103,840	118,674	92,000	78,800	160%	137%
2006	70,281	64,809	70,281	84,337	122,992	140,562	114,500	85,400	177%	132%
2007	78,008	74,145	78,008	93,610	136,514	156,016	151,650	103,800	205%	140%
2008	70,530	74,269	70,530	84,636	123,428	141,060	147,000	74,100	198%	100%
2009	84,487	77,509	84,487	101,384	147,852	168,974	108,450	70,050	140%	90%
2010	95,453	89,970	95,453	114,544	167,043	190,906	128,730	97,205	143%	108%
2011	99,860	97,657	99,860	119,832	174,755	199,720	131,463	98,952	135%	101%
2012	114,214	107,037	114,214	137,057	199,875	228,428	136,345	113,855	127%	106%
2013	134,407	124,311	134,407	161,288	235,212	268,814	178,900	136,850	144%	110%
2014	145,619	140,013	145,619	174,743	254,833	291,238	229,374	163,039	164%	116%
2015	154,935	150,277	154,935	185,922	271,136	309,870	227,500	190,007	151%	126%
2016	171,542	163,239	171,542	205,850	300,199	343,084	249,711	187,001	153%	115%
2017	211,750	191,646	211,750	254,100	370,563	423,500	299,360	238,100	156%	124%
2018	212,503	212,127	212,503	255,004	371,880	425,006	335,900	279,410	158%	132%
2019	261,417	236,960	261,417	313,700	457,480	522,834	341,785	287,000	144%	121%
2020	287,031	249,767	287,031	344,437	502,304	574,062	352,450	239,440	141%	96%
2021	342,622	302,020	342,622	411,146	599,589	685,244	454,550	341,820	151%	113%
2022^	329,979	308,505	329,979	395,975	577,463	659,958	544,389	393,012	176%	127%
2023^	396,193	369,408	396,193	475,432	693,338	792,386	563,073	442,765	152%	120%

Source: Semper Augustus; Berkshire Hathaway

Berkshire's shares closed 2023 trading at 137% of expected year-end book value. A year ago, the shares traded at 142% of 2022 year-end book value. Despite the lower multiple to book value the stock is slightly more expensive than a year ago. Factors discussed earlier in the Berkshire section of the letter explain how book value per share declined during 2022 while the stock rose 4% but gains in economic earning power and intrinsic value outstripped all measures. The opposite happened in 2003. Book value per share rose faster than Berkshire's stock price (and per-share intrinsic value).

Said differently, book value per share is a more overstated book value relative to economic reality than a year ago. It's a worse book value. The valuation of the stock portfolio is higher; As a simple example, if an asset is worth \$100 and declines in price by 50%, if the price paid for the asset remains the same, is the underlying value lower, the same or higher? If the same asset doubles in price while value is constant, is it more or less attractive?

The shares traded in a range of 120% to 152% of average book value during 2023. The shares traded in a range from 0.5x to 3.0x book value over the past 57 years. In its earlier years, the lower end of the range more closely approximated intrinsic value at the time, while three times book value in 1998 most certainly did not. A 1.75 multiple has approximated fair value in recent years. Book value was depressed a year ago and more reflective of asset values today. In any given year, book value can get ahead of itself or behind, largely due to period volatility in the stock portfolio. It can also get distorted at times such as year-end 2017 when the new marginal tax rate saw deferred-tax liabilities rerated downward and deferred tax assets revalued upward. Berkshire properly points out that if it is going to become a large repurchaser of its shares at premiums to book value, then book value and book value per share will decline. Subsequent repurchases at increasing premiums will further and more quickly erode book value.

In a normalized steady state Berkshire conservatively earns at least 10% on unleveraged net equity. Thanks to the durability and knowability of the earning power we are comfortable with a 75% premium to book as a reasonable valuation. The multiple should be higher when book value is understated. If the sustainable return on equity as projected changes, upward or downward, the valuation would be affected. Likewise, if book value becomes so diminished, it will properly be eliminated as a valuation proxy, looking to ongoing absolute profitability relative to retained and past profit. Price to book value should be excluded at present if using a constant 175% at the proper multiple.

Two-Pronged Approach

Two-Pronged Basis # (dollars in millions)																				
	Per-Share Pre-Tax Earnings	Per-Share Investments										Pre-Share Investments + Capitalized		Pre-Tax Earnings		Market Cap Intrinsic Value		5% UW		Add Cap UW
		10x	12x	13.5x	15.4x ^		plus 10x	plus 12x	plus 13.5x	plus 15.4x^	shares out M	at 10x	at 12x	at 13.5x	at 15.4x^	Capped				
2005	2,441	24,410	29,292	32,954	37,591	74,129	98,539	103,421	107,083	111,720	1.541	151,849	159,372	165,014	172,161	10,998			176,012	
2006	3,625	36,250	43,500	48,938	55,825	80,636	116,886	124,136	129,574	136,461	1.543	180,355	191,542	199,932	210,559	11,982			211,914	
2007	8	80	96	108	123	90,343	90,423	90,439	90,451	90,466	1.548	139,975	140,000	140,018	140,042	15,891			155,909	
2008	3,921	39,210	47,052	52,934	60,383	77,793	117,003	124,845	130,727	138,176	1.549	181,238	193,385	202,495	214,035	12,763			215,258	
2009	2,250	22,500	27,000	30,375	34,650	90,885	113,385	117,885	121,260	125,535	1.552	175,974	182,958	188,196	194,830	13,942			202,138	
2010	5,926	59,260	71,112	80,002	91,261	94,730	153,990	165,842	174,732	185,991	1.648	253,776	273,308	287,958	306,513	15,375			303,333	
2011	6,990	69,900	83,880	94,365	107,646	98,366	168,266	182,246	192,731	206,012	1.651	277,807	300,888	318,199	340,126	16,038			334,237	
2012	8,085	80,850	97,020	109,148	124,509	113,786	194,636	210,806	222,934	238,295	1.643	319,787	346,354	366,280	391,519	17,273			383,553	
2013	9,116	91,160	109,392	123,066	140,386	129,253	220,413	238,645	252,319	269,639	1.644	362,359	392,332	414,812	443,287	18,342			433,154	
2014	10,847	108,470	130,164	146,435	167,044	140,123	248,593	270,287	286,558	307,167	1.643	408,438	444,082	470,814	504,675	20,627			491,441	
2015(S)	11,562	115,620	138,744	156,087	178,055	148,675	264,295	287,419	304,762	326,730	1.643	434,237	472,229	500,724	536,817	20,647			521,371	
2015(B)	11,186	111,860	134,232	151,011	172,264	159,237	271,097	293,469	310,248	331,501	1.643	445,412	482,170	509,377	544,657					
2016(S)	10,421	104,210	125,052	140,684	160,483	168,902	273,112	293,954	309,586	329,385	1.643	448,723	482,966	508,649	541,180	22,941			531,590	
2016(B)	11,718	117,180	140,616	158,193	180,457	186,520	303,700	327,136	344,713	366,977	1.643	498,979	537,484	566,363	602,944					
2017(S)	11,123	111,230	133,476	150,161	171,294	190,161	301,391	323,637	340,322	361,455	1.644	495,427	531,995	559,420	594,160	25,199			584,619	
2017 (B)	15,002	150,020	180,024	202,527	231,031	202,322	352,342	382,346	404,849	433,353	1.644	579,180	628,500	665,491	712,345					
2018(S)	13,037	130,370	156,444	176,000	200,770	174,846	305,216	331,290	350,846	375,616	1.641	500,838	543,623	575,713	616,359	33,000			649,359	
2018(B)	14,697	146,970	176,364	198,410	226,334	188,626	335,596	364,990	387,036	414,960	1.641	550,689	598,923	635,098	680,920					
2019(S)	14,052	140,520	168,624	189,702	216,401	235,822	376,342	404,446	425,524	452,223	1.625	611,540	657,208	691,459	734,843	36,000			770,843	
2020(B)	14,309	143,090	171,708	193,172	220,359	253,676	396,766	425,384	446,848	474,035	1.625	644,728	691,231	726,108	770,286					
2020(S)	13,399	133,990	160,788	180,887	206,345	297,636	431,626	458,424	478,523	503,981	1.644	666,431	707,788	738,820	778,126	39,000			817,126	
2020(B)	13,924	139,240	167,088	187,974	214,430	314,600	453,840	481,688	502,574	529,030	1.544	700,711	743,707	775,954	816,801					
2021(S)	18,011	180,110	216,132	243,149	277,369	333,785	513,895	549,917	576,934	611,154	1.475	758,227	811,376	851,238	901,729	41,000			942,729	
2021(B)	18,127	181,270	217,524	244,715	279,156	347,815	529,085	565,339	592,530	626,971	1.475	780,640	834,131	874,249	925,065					
2022	22,826	228,260	273,912	308,151	351,520	336,059	564,319	609,971	644,210	687,579	1.460	823,755	890,395	940,375	1,003,682	-			1,003,682	
2023 est	24,065	240,650	288,780	324,878	370,601	394,349	634,999	683,129	719,227	764,950	1.441	915,159	984,523	1,036,547	1,102,444	-			1,102,444	

Source: Semper Augustus; Berkshire Hathaway

You will notice a change in the table for 2022 and 2023, made largely for the sake of simplification and saving time (mine). No longer are both the Semper and Berkshire methods for calculating intrinsic value using the Two-Pronged Approach included. The approach begins with two simple figures, per-share pre-tax earnings of all subsidiaries excluding gains and income from marketable securities and a per-share value for all marketable securities. It serves as an extremely useful, albeit simple, method for estimating Berkshire's value by capitalizing earnings excluding any from marketable securities and then separately providing (and adding) aggregate marketable securities held at all subsidiaries at market value.

Berkshire provided the two per-share figures for the better part of two decades to help investors assess fair value. The figures disappeared from the Chairman's letter for five years and then reappeared. The method proves durable but requires some understanding and adjustment of certain data points. The method was covered in detail in our 2016 letter and in the appendix to the 2017 letter. Our method differed from the one used by Berkshire and altered over the years. Berkshire's method included underwriting gains and losses, then did not, and then did again. Ours eliminated current underwriting from operating earnings but then substituted a capitalized value to a normalized underwriting profit margin. Now, we are including our *normalized* estimated underwriting profit in pre-tax operating earnings and no longer capitalizing at a different rate. Those using their own version of this method can use actual underwriting results but will find much more volatility to progression of intrinsic value.

Berkshire's method included cash held at non-insurance subsidiaries. Ours did not. The single method now used includes all cash held across Berkshire. We also use market values for Kraft Heinz and Occidental Petroleum instead of their equity method carrying values. It was nice to have a reconciling tool given occasionally changing Berkshire methods at various times requiring alteration to its original presentation beginning in 1995. It's a simple tool that happens to still get in the ballpark.

GAAP Adjusted Financials Approach

The GAAP or IFRS statement of earnings can only be a starting point for the investor seeking to measure economic profitability and the capital required to produce it. Reported profits only ever approximate economic profitability by coincidence at Berkshire. At some companies reported profits more closely align with genuine profitability. The majority of companies strive to cast their condition in the most favorable light, often distorting economic reality. Berkshire's financial reporting and the derivation of economic earning power proves a wonderful case study in how useless financial statements can be without diving deep into the footnotes and into the moving parts of the business. Berkshire's require so many adjustments that any student of investing should endeavor to understand the steps required in doing so. A great project for a summer intern would place a stack of Berkshire annual reports in front of the mentee and tell them to figure out what the company is worth. The uninitiated would require steady guidance, but what a teaching tool (just don't give them the Semper letter in advance). Our adjustments are by no means authoritative, and each can be debated as to merit. Much of the process serves to smooth volatility – distorting aspects that make Berkshire's GAAP consolidated financial statements, particularly the statement of income, of little utility.

Primary adjustments to the GAAP Statement of Earnings:

- Remove realized (and now unrealized) gains and losses on the investment portfolio of the insurance companies and other groups.
- Remove derivative contract gains and losses.
- Add retained earnings of equity investees in the investment portfolio (this is the offset to the removal of realized and unrealized gains and losses). It is a normalizing factor that assumes retained earnings will translate into at least an equal dollar of market value.
- Remove underwriting gains and losses.
- Add a normalized underwriting profit margin, now including loss accruals for retroactive reinsurance and periodic payment annuity accounting treatment.
- Add income for deferred-tax liabilities that are created with property, plant and equipment capital expenditures, reflecting the degree to which cash taxes paid are less than reported GAAP taxes.
- Add a portion of any amortization charges against intangible assets created in acquisitions not reflective of economic decay.
- Add the present value of an optionality premium to the portion of cash balances likely to be invested at higher yields in the near to intermediate future.
- Reduce net income to reflect a higher normalized pension expense and cash outlay than assumed.
- Other adjustments that are one-off are made as needed (the above are more recurring in nature).
 - 2020 saw a \$10.6 billion pre-tax and \$10.4 billion after-tax write-down of Precision Castparts. \$10 billion of the charge was a non-tax-deductible reduction of goodwill. The analyst should not be fooled by apparently higher future profitability by ignoring the charge.
 - 2017 required a \$28.2 billion non-taxable downward adjustment to restate net deferred-tax liabilities, which increased taxable income by the same non-taxable amount.

- The equity method treatment of Kraft Heinz required a one-time 2017 downward income adjustment of \$2.9 billion pre-tax, \$1.2 billion after-tax, reflecting investee Kraft Heinz's similar non-cash gain in net income for revaluation of net deferred-tax liabilities.
- 2023 excludes \$1.26 billion net of tax and reinsurance recoverable for wildfire loss accruals during the year. These will likely be paid as cash, a real diminution of loss of assets and value but should be excluded from any normalization of value exercise.

Balance sheet adjustments for things such as overvaluation or undervaluation in the common stock portfolio are separate from these adjustments to earnings. I can't tell you how many times analysts conflate things such as float with investment assets and earning power. Float is a *net* insurance liability. Investment returns are not earned on float. Liabilities must be paid but are not an offset to economic earning power.

The balance of this section is repetitive from last year's letter with updated figures for each 2023 adjustment. Consider it my contribution to little-changing footnote disclosures. The analyst can save time with a redline comparison!

Remove Realized and Unrealized Investment Gains and Losses

FASB rule ASU 2016-1 required the income statement under GAAP accounting to include unrealized gains and losses each quarter in the income statement beginning in 2018. Previously only realized gains and losses were included in income. Unrealized gains and losses were recognized on the balance sheet, net of a deferred-tax liability for taxes to be paid if, or when, holdings are sold. Unrealized gains and losses naturally remain a balance sheet item. In periods of price declines, as in 2018, the first quarter of 2020 and all of 2022, declines are offset by a correspondent reduction of the portion of deferred taxes no longer carried as a liability. These unrealized gains and losses are taxed as deferred at 21%, where prior to the 2017 TCJA tax change were taxed at 35%. In other words, investment securities move up and down in price, and the movement in either direction is offset by a 21% deferred tax liability now, with the net amount impacting shareholder's equity only by the net amount. Deferred taxes mute the impact of stock volatility on the balance sheet.

We remove a not insignificant \$75.6 billion pre-tax gain, \$59.7 billion after-tax, from the projected 2023 income statement for gains in Berkshire's investment portfolio, which included both realized gains and unrealized gains. The gain contributed \$15.9 billion to an increase in Berkshire's deferred tax liability on the investment portfolio. We expect Berkshire sold a net \$25.9 billion of common stocks during 2023. They had *realized* gains of \$5.4 billion at September 30. We make no assumptions about realized gains during the fourth quarter, so the entire portfolio gain as estimated is assumed unrealized.

Our treatment always removed *realized* gains and losses from the income statement. Their timing can be arbitrary and controlled by management. It's not uncommon to see a management book gains to mask a decline in profitability. Numerous companies mastered this trick over the years. Prior to the tax code change, realized gains always helped the reported result. Portfolios could decline in value and managements had the discretion to realize gains large enough to offset or more than offset any unrealized losses. Alternatively, you see subsidiaries or assets sold or accounted for as to be sold and excluded from "adjusted" results. The most redeeming aspect of marking to market unrealized gains and losses for income statement purposes was to limit the shenanigans of selecting gains in an investment portfolio to augment results. Companies would book gains and write checks for taxes just to boost short-term profits. There is zero history of Berkshire having done this. Rather, Berkshire historically goes out of its way to avoid paying cash taxes. The Jack Welch playbook on the other hand...

Including both realized and unrealized gains and losses in the income statement *is* more economically correct than excluding them as irregular. It's just that inclusion is correct but comes with volatility that can distort operating results. If stock prices reflect the earning power of the business over time, then inclusion of gains and losses, whether realized or unrealized, will be correct – over time. It's "over time" that's the problem. To satisfy the logic for removal, eliminating short-term price volatility, we must offset the removal with a better proxy for tracking economic gains and losses. To serve that purpose, we add the retained earnings not paid as dividends by Berkshire's investees in common stocks.

Add Retained Earnings of Holdings

Offsetting the removal of realized and unrealized gains, add back the portion of profits earned by Berkshire's publicly traded investees not paid as dividends. For 2023 we added back \$13.4 billion, which is net of assumed taxes paid at 3%. The de minimis 3% rate is used in recognition that taxes owed on realized gains will be paid *later* and probably many years in the future, if ever (it's discounting for the time value of the 21% tax rate). The deferred-tax liability assumes immediate liquidation of the portfolio, taxed at 21%. Berkshire minimizes realized gains paid as cash, and the present value aspect accounts for the difference in our assumption.

As discussed earlier, we'll see if Berkshire winds up being forced to pay a 15% alternative minimum tax on *unrealized* gains as prescribed under passage of the "Inflation Reduction Act of 2022." Companies reporting income of more than \$1 billion are liable for the tax over a rolling three-year period. Berkshire's insurance operation may be at risk of bearing the tax. The law is unclear about exemptions allowed by the Treasury Department. The tax treatment began in 2023. If Berkshire winds up liable and paying tax on unrealized gains, it's an enormous hit to profitability. Berkshire's \$346 billion common stock portfolio (at year-end 2023) held by its insurers earns \$5.0 billion from dividends and \$75.6 billion in unrealized gains as it did in 2023, the \$75.6 billion unrealized gain may be taxed at 15% (on a rolling-three-year basis) depending on the level of underwriting profit taxed at 21%. The tax payment on the unrealized gain is \$11.3 billion. Capitalized at 18x that's a potential \$203 billion hit to intrinsic value. If taxed, I'd expect a repeal within short order. An earlier corporate alternative minimum tax (albeit not taxing unrealized gains) was an unmitigated disaster and short lived. Discussion of any impact was purposely vague in Berkshire's recent SEC filings and they expect no material impact. Management may address the subject at the coming annual meeting. It was dodged a bit at last year's meeting, and perhaps purposefully so. The Chairman and sadly now gone Vice Chairman generally had opposing views on taxation, though Berkshire is very good at structuring its affairs to only pay minimum cash taxes. Stay tuned on this one.

The removal of gains and losses as irregular and unpredictable, whether realized or unrealized, requires an offset when assessing earnings power. The offset is the addition to reported earnings of the retained earnings of publicly traded companies not paid to Berkshire as dividends. Profits retained should (and need to) inure for the ultimate benefit of the shareholder. It is simply a reinvestment of shareholder profits, a choice made by others if you happen to not be in control. This is a normalizing factor that assumes retained earnings will ultimately translate into at least an equal dollar of market value. At Berkshire, these retained earnings are a significant component of Berkshire's overall profitability. The stock portfolio will likely total 35% of Berkshire's total assets at yearend, near the highest level since totaling 65% prior to Berkshire's acquisition of General Re in 1998 (stocks were 38% of assets at year-end 2021). As a percentage of overall profit, \$13.5 billion (\$13.1 billion net of tax at 3%) in retained earnings represents a quarter of total normalized profit. As a mental reconciling item, when \$13.5 billion in retained earnings is added to after-tax dividends received, "earnings" from the stock portfolio total 34% of total after-tax earnings, very close to stocks as 35% of total assets.

Remove Derivative Contract Gains and Losses

This adjustment disappeared by the close of 2023's first quarter. Realized and unrealized gains and losses on derivative contracts were removed from GAAP earnings along with those on investment securities.

Berkshire wrote a series of put option contracts just prior to the financial crisis with several life insurance companies as counterparties. The life insurers write a type of annuity that guarantee a smaller percentage of the gain on named stock market indices accompanied by a base minimum annual return and a guarantee of either no loss or a loss capped at a certain percentage. Naturally the insurers lose big if the stock indices decline, and so look to hedge their downside exposure. For a price, Berkshire provided the protection. The options written were European style, meaning they are payable only at the expiration of the option, which in the case of those Berkshire wrote were all well over ten years. Berkshire received \$4.9 billion upfront as a premium between 2004 and 2008 and unwound 8 of the original contracts in 2010 at a gain of \$222 million. Several of the contracts subsequently expired worthless, which means Berkshire keeps the entire premium, plus the gains and income on invested float, and pays no losses. Most contracts are already expired. The balance of the contracts expired in January 2023 and contained no collateral posting requirements. The balance sheet liability was \$1.1 billion at the outset of 2021, only \$99 million a year later and is now gone. The liability reflected the undiscounted value of the amount Berkshire would have to pay out at a point in time calculated using the Black-Scholes option pricing formula to determine fair value. Declining European markets and surging volatility combined to balloon the liability in March 2020 as the market fell.

Few understood the incredibly remote likelihood of ever incurring an actual loss and what a great investment these were. The options were written "at the money," meaning the strike price was set at the market price of the indices at the time the contracts were written. The strike for all four (three were European indices) were written at a time when the S&P traded for no higher than 1,400. Changes in the currencies underlying the contracts also impacted the estimation of potential losses. Of course, the derivative contracts didn't look so good at the depths of the crisis – at year-end 2008, the liability on the contracts outstanding at the time was \$10 billion with a notional value of \$37 billion. The notional value would be the amount owed to the insurance companies if each stock market index was at *zero* at expiration.

We've always believed writing the contracts was brilliant, a great risk assumed. The length of the contracts and the fact that retained earnings over a long enough period invariably push share prices upward provided margins of safety. With the options being European style, the indices would have to be *below* the strike price on the *exact day* of exercise. These contracts were originally written with 12 to 19 years to maturity. Sure, markets were negative in price for more than 12 years before, and in fairness the options were written close to a cyclical/secular peak, but they would have to be negative on the specific day, *and* the contracts have staggered maturities.

There did exist a minute chance that Berkshire would have paid at expiration on some of the index put contracts. It wasn't a zero chance. We saw how quickly assets can lose value in March 2020 and during the Great Financial Crisis. Stock markets were negative for periods of 12 years or more in our markets several times. Japan just today (February 22, 2024) climbed back to 1989's peak, which is extraordinary. Our markets were negative from 2000 to 2012, traded consistently below 1966's high until 1982, and took 25 years to regain 1929's peak. The Japanese experience just matched the duration it took the Dow Jones Industrials to again reach 1929's peak...in 1954. With the strikes written at the money, to lose would have required material declines over most of the contract's lives to the precise day of expiration.

Writing the index puts was a *great wager* by Berkshire – a permanent collection of \$4.9 billion in put option premium, the use of the entire \$4.9 billion for 12 to 17 years and losses risked that would never be

paid. Lots of interesting conversations over the years since the contracts were written with some thinking these were terrible investments. In summary, **Berkshire pocketed the entire \$4.9 billion premium and enjoyed investment use of the capital for nearly two decades. Not a dime of losses was paid.** I recall “idiot” being called several times when stock prices declined and the stated balance sheet liability ballooned. At the end, laughter could be heard in Omaha on the journey to the bank. Add it to the list of the great investments made by Berkshire under Warren and Charlie, and Ajit in this case.

Adjust Earnings to Reflect Accelerated Depreciation Tax Treatment for Capital Expenditures

Berkshire spends enormous sums on capital expenditures, much of which takes place in its energy and railroad businesses. Deferred-tax liabilities are created on qualifying investments in property, plant, and equipment. Companies like railroads and utilities are incentivized to make infrastructure investments for the public good. The use of accelerated depreciation for tax purposes arises from higher depreciation of fixed assets allowed for tax purposes in the early years of amortizing an asset's life, made up for with lower tax-deductible depreciation expense in later years. The higher early depreciation results in lower taxes paid in the early years and consequently higher taxes in later years. The future higher taxes are carried on the balance sheet as a deferred liability. It's a present value benefit, and we adjust net income upward reflecting the benefit.

The 2017 TCJA tax code change more broadly expanded the allowed use of accelerated depreciation to most industries, instead of limited to those such as rails and regulated utilities. The code change allows for depreciable assets (excluding structures) to be expensed in one year instead of being amortized over many years, effectively accelerated depreciation on steroids for many businesses. Equipment must have been purchased after September 27, 2017, and by December 31, 2022 (with an additional year for longer production property and certain aircraft). The immediate 100% expensing was reduced by 20% annually beginning in 2023 and is to be phased out entirely after 2026. Regulated *public* utilities were largely excluded from the new benefit – having already applied the tax treatment, albeit over more years. With the change in the tax rate to 21% from 35%, regulators logically made downward adjustments to customer electricity rates or to the rate base to maintain allowed returns on equity. Said differently, the tail of lower future depreciation expense had been determined using a 35% rate. The new lower rate would have unfairly benefited a utility at the expense of the customer.

The recent election brings proposals to alter or eliminate many aspects of the tax changes introduced by TCJA. An early end of accelerated depreciation for non-rail and utility industries may transpire. We don't expect a change to current treatment for utilities (who already used the tax method but were compelled to refund or lower prospective rates due to the change in the tax rate applied to the carried deferred-tax liability). As of now it's too early to have any color on prospective changes.

For 2022 after-tax net income is increased by \$1.6 billion, up from \$1.4 billion reflecting growing investment at BHE offset by lower amounts of growth capital expenditures at BNSF. The deferred-tax liability for property, plant and equipment is expected to be \$32.4 billion when reported for 2022.

Over the last five years since TCJA, the use of accelerated depreciation benefitted not only the railroad, but also Berkshire's other non-regulated businesses that in many cases are also now enjoying the tax benefit of accelerated depreciation where previously they weren't. Berkshire's non-rail and energy businesses will have spent more than \$27 billion on capital expenditures, with much of that qualifying for one-year expensing. As assets depreciate over their actual useful lives, approximated by depreciation charges in the GAAP income statement, the beneficial tax benefit eventually runs its course, and in the later years of an asset's useful life, an even higher effective tax rate than the marginal rate will be applied for the tax books. Total capital expenditures will be \$19 billion in 2023 against \$10.0 billion GAAP depreciation expense. BH Energy and the rail will spend \$9.5 billion and \$3.8 billion respectively, \$6.9

billion above depreciation expense. Some of the capex is genuinely spent on maintenance, but in the case of the energy businesses largely increases the rate base, against which regulated utilities are allowed to earn up to an established return on equity.

Berkshire will continue spending large amounts of capital expenditures, much of which drives down the current cash tax bill. The appetite for capital expenditures above maintenance outside of the rail and energy businesses is likely to wane over the course of the phaseout beginning this year. For the balance of 2024 we should see large expenditures barring the passage of unfavorable tax legislation.

Remove Underwriting Gains and Losses; Add a Normalized 5% Underwriting Profit

Underwriting profits can be extremely volatile from year-to-year, not unlike stock prices. Our method for valuing Berkshire's insurance operations removes reported underwriting profits and replaces them with a normalized 5% pre-tax underwriting profit on premiums earned. It's a similar approach to removing investment gains and losses and replacing them with the retained earnings of the stock market holdings. The volatility of the underwriting cycle is stripped in favor of estimating what we think is a sustainable and achievable profit earned *over time*. Our 5% pre-tax underwriting estimate is a blended rate across all of Berkshire's insurers and types of business written *over time*. Over time is emphasized via an example. Catastrophe reinsurance can produce large underwriting gains for many years. A single year of large losses producing an underwriting loss must be averaged among the majority of years with gains.

A low interest rate environment makes underwriting at a profit imperative. Berkshire enjoys unusual advantages thanks to surplus capital built over the years. It can retain more business than its competitors and maintain much larger allocations to common stocks. Surplus capital derived from best-in-class underwriting and higher returns from longer duration investment assets allows dividend and capital distributions to the holding company and into its non-insurance businesses. We'll closely watch developments like GEICO's growing market share and the progress of the new specialty business. We may well alter our profit assumption. A more conservative approach would assume breakeven underwriting over time, which strips \$65 billion from the capitalized value of underwriting profit that's included in our appraisal of Berkshire's intrinsic value.

Berkshire has a history of including, then excluding, then including then dropping altogether underwriting profit in their dual yardstick method of calculating intrinsic value from 1995 to 2015. Our method of removing volatility and replacing it with what we think Berkshire will earn on underwriting allows us to determine the worth of the insurers, and the business at large, without having to think about the degree to which insurance profits are under or over a "normal" level of underwriting for a year or period of years.

When we analyze property casualty insurers and reinsurers, we spend a lot of effort trying to determine sustainable underwriting margins, which can be positive or negative depending on the type of insurance written and the economic climate, particularly with interest rates, inflation, capital required and competitive capacity.

Berkshire's collection of insurers will likely report a huge \$6.6 billion underwriting gain in 2023 versus a small \$90 million loss in 2022. 2021 saw a modest \$728 million, 1.0% underwriting gain that matched a 1.0% gain in 2020, 0.5% in 2019, 3.5% in 2018 and a loss of 6.5% in 2017. 2016's margin was 4.6%, close to target, an anomaly in any given year. The six years through 2022 were marked by higher-than-average catastrophe losses, largely from hurricanes and California wildfires, winter storms, Asian typhoons in 2018 and 2019, wildfires in Australia in 2019, a Mexican earthquake in 2017 and COVID-19 losses in 2020. 2023 was devoid of the big ones.

Mercifully Berkshire (and the reinsurance industry) escaped with no major storms in the second half of 2020 given early year pandemic losses. The first half of the year is conventionally the time to get fat in reinsurance. Despite six years of underwriting below our long-term estimate prior to 2023, aggregate profitability exceeded most industry participants across the lines that Berkshire writes. Beyond underwriting, Berkshire's outsized allocation of insurance reserves and capital to common stocks drives overall profitability far ahead of peers. Berkshire's insurers play the long investing game while competitors are forced to the short game of underwriting and market share. I'm sure I've said this at least three or four different ways in the letter.

For 2023, the first step of removing actual underwriting profit eliminates an estimated after-tax \$60.6 billion gain from GAAP earnings. The next step of adding our 5% normalized pre-tax underwriting profit adds \$4.1 billion pre-tax and \$3.2 billion after-tax underwriting profit on \$82.0 billion in anticipated premiums earned, up from \$74.6 billion in 2022. We now also add \$1.4 billion net in what will be reported as "losses" on BH Reinsurance group income for retroactive and periodic payment annuity business written in the past.

Add a Portion of Intangibles Amortization Expense to Income

Economic earnings are increased by \$1.2 billion to reflect the amortization of intangibles created in acquisitions that do not economically decay. Berkshire recognizes this reality each year, formerly in a supplemental presentation in the Chairman's letter and beginning two years ago in the MD&A segment presentation of the Manufacturing, Service and Retail group in the 10-K. Unlike many public companies, Berkshire does not present a pro-forma or supplemental set of financials excluding various expenses. The goodwill and intangibles footnote makes clear the types and amounts of intangibles being amortized. The balance of intangibles being amortized with no economic decay is now much larger and growing. We had been adding back 80% of the amortization charge for intangibles, which resulted in economic earnings being roughly \$600 million higher after-tax than GAAP profits for 2010 to 2015. We are now adding back 90% of the intangibles charge thanks to ongoing amortization and a lack of recent acquisition activity.

Net intangibles were \$37.2 billion on September 30, 2023 against \$52.4 billion gross. Accumulated amortization is \$15.2 billion. In addition to trademarks, intangible assets such as trade names and customer relationships generally lose little, if any, economic value over time.

Add an Optionality Premium to a Portion of Cash Balances

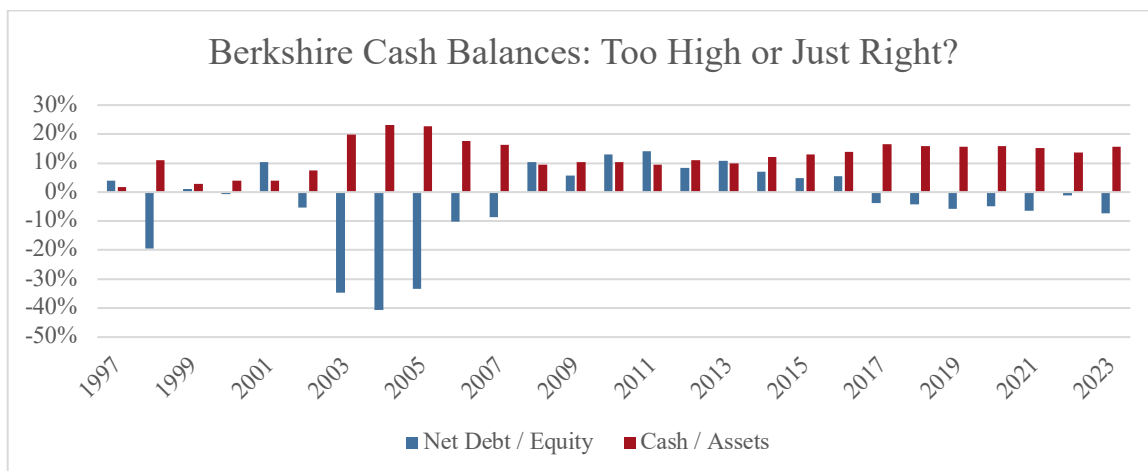
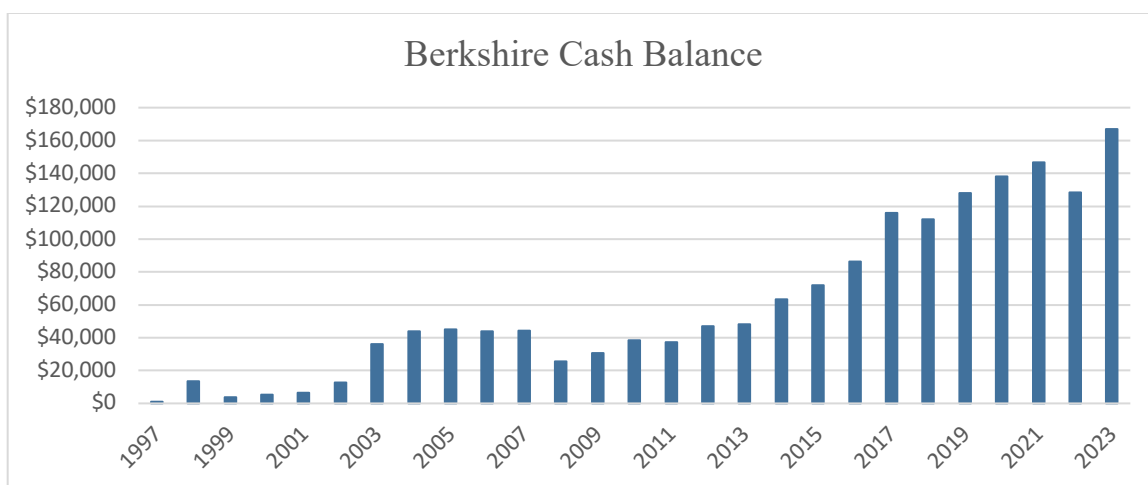
We make a generally material upward adjustment to Berkshire's reported profits that assumes much of Berkshire's cash will be put to good use, and reasonably soon. The adjustment added \$3.2 billion to 2021 adjusted GAAP earnings, a not insignificant 6.8% of \$46.9 billion in normalized earnings. The upward adjustment is earnings based only. It does not double count marketable securities or firm assets in a balance sheet analysis. The base assumption is that a portion of invested assets in cash are earning less than they will over time. Depending on whether higher-yielding investments are made and at what yields makes the adjustment worthy of critique, in whole or in part. The adjustment for 2022 fell to a measly \$154 million thanks to a sizable expenditure of cash and rising yields earned on cash and T-bill balances. The adjustment for 2023 is still nominal at \$749 million.

Berkshire's cash position merits more media attention than it deserves – cash recently earning nearly nothing in U.S. Treasury bills but at this writing at yields more than 5%. The cash balance will likely total roughly \$167 billion at year-end 2023, a record by dollars but not as a percentage of firm assets. Cash is 16% of firm assets but reached 23% in 2004 and 2005 (although cash averaged only \$44 billion over those two years). Mount Berkshire grows to the sky.

At 5.3% U.S. T-bill rates, pre-tax interest is now \$8.9 billion versus a scant \$154 million in 2021 when rates approached zero.

Berkshire states it will maintain cash on hand of \$30 billion as a permanent reserve. That leaves roughly \$137 billion for investment in longer duration assets. Our method also presumes the insurance operation will not allow cash to fall below one year's worth of insurance losses paid in cash, \$52 billion at today's level. \$120 billion cash in the insurance business dwarfs \$22.5 billion of fixed income. Combined the total far exceeds the minimum capital required to write \$82 billion annual premium. We are thus calling \$82 billion a more or less permanent cash reserve. We'll see if Berkshire is comfortable taking cash below that combined amount.

Below is an updated chart of Berkshire's cash position from 1997 through our 2022 estimate. Notice that cash tends to decline during years when stocks (good ones presumably) are on sale.



Source: Berkshire Hathaway; Semper Augustus

The top chart above takes the shape of a ski jump, causing anxiety among Berkshire watchers.

Berkshire's \$167 billion cash balance is within a normal range when measured against equity and assets since the General Re deal. Today's cash at 16% of total firm assets, up from 14% a year ago, is in line

with its 13% average since 1997. How about firmwide leverage? Berkshire maintains a net unleveraged but not too-cash-heavy capital structure. Net debt to equity at negative 7% demonstrates why the brass in Omaha refer to the Fort Knox balance sheet.

It's this historical perspective that allows doubt to creep into the method for assuming a higher return on much of the cash balance. The counterpoint is most of the leverage on the consolidated balance sheet is utilized in the railroad and the energy businesses. The debt in these groups is *not an obligation* of Berkshire – it's standalone to the subsidiary and not hypothecated to the parent. It's also geared at a proper level for those businesses. If you hold those two subsidiaries aside from consideration, then the rest of Berkshire is quite liquid and has room to invest a substantial portion of cash reserves. See the earlier capital allocation discussion.

Berkshire will undoubtedly invest a portion of its T-bill and cash balance in higher yielding assets. They may bag elephants, find more homes for capex, or repurchase more shares. The field of opportunity includes partial ownership of publicly traded companies (stocks), a control or shared equity interest in privately held businesses, or various iterations of higher yielding fixed-income or hybrid equity securities, such as warrant investments made since the financial crisis and most recently in Occidental Petroleum.

Progression of Berkshire Stock Portfolio as a Percent of Book Value and Assets

Year	Stocks	Cost Basis	Unrealized Gain/Loss	Realized Gain	Net Purchases	Net as % of Avg	Equity	Stocks as % of Equity	Total Assets	Stocks as % of Assets
1997	\$36,248	\$7,207	\$29,041	\$1,106	-\$1,302	-4.1%	\$31,455	115%	\$56,110	65%
1998	37,265	7,044	30,221	2,415	-2,823	-7.7%	57,403	65%	122,237	30%
1999	37,008	8,203	28,805	1,247	-691	-1.9%	57,761	64%	131,416	28%
2000	37,619	10,402	27,217	4,499	-2,725	-7.3%	61,742	61%	135,792	28%
2001	28,675	8,543	20,132	1,488	-2,806	-8.5%	57,950	49%	162,752	18%
2002	28,363	9,164	19,199	918	416	1.5%	64,037	44%	169,544	17%
2003	35,287	8,515	26,772	4,129	6,765	21.3%	77,596	45%	180,559	20%
2004	37,717	9,056	28,661	3,471	-578	-1.6%	85,900	44%	188,874	20%
2005	46,721	15,947	30,774	5,408	6,392	15.1%	91,484	51%	198,325	24%
2006	61,533	22,995	38,538	2,635	5,395	10.0%	108,419	57%	248,437	25%
2007	74,999	39,252	35,747	5,509	11,057	16.2%	120,733	62%	273,160	27%
2008	49,073	37,135	11,938	-7,461	3,300	5.3%	109,267	45%	267,399	18%
2009	59,034	34,646	24,388	787	-1,056	-2.0%	131,102	45%	297,119	20%
2010	61,513	33,733	27,780	2,346	-1,621	-2.7%	157,318	39%	372,229	17%
2011	76,991	48,209	28,782	-830	1,497	2.2%	164,850	47%	392,647	20%
2012	87,662	49,796	37,866	3,425	-712	-0.9%	187,647	47%	427,452	21%
2013	117,505	56,581	60,924	6,673	4,689	4.6%	220,959	53%	484,624	24%
2014	117,470	55,056	62,414	4,081	1,118	1.0%	239,239	49%	525,867	22%
2015	136,017	68,412	67,605	10,347	1,473	1.2%	254,619	53%	552,257	25%
2016	150,432	75,628	74,804	8,304	-11,596	-8.1%	282,070	53%	620,854	24%
2017	195,840	84,476	111,364	2,128	814	0.5%	348,296	56%	702,095	28%
2018	186,764	112,667	74,097	3,300	24,427	12.8%	348,703	54%	707,794	26%
2019	258,527	120,140	138,387	3,200	4,306	1.9%	424,791	61%	817,729	32%
2020	292,257	118,420	173,837	6,200	-8,595	-3.1%	443,164	66%	873,729	33%
2021	363,779	114,405	249,374	3,600	-7,401	-2.3%	506,199	72%	958,784	38%
2022	322,117	143,116	179,001	769	34,266	10.0%	472,360	68%	948,452	34%
2023	372,209	124,684	247,525	5,400	-25,918	-7.5%	570,922	65%	1,070,115	35%

Source: Berkshire Hathaway; Semper Augustus Calculations

Is it aggressive assuming a return that's not being earned currently? We don't think so. When Berkshire invested in Occidental preferreds at 8%, callable later at a premium (plus warrants), there was very little

net yield pickup at the time versus what was then our 6.9% optionality premium to bills. The optionality premium shrinks as T-bill rates rise. At 5% on bills, the optionality premium shrinks to 2%. If bills yield 7% there is no optionality premium (and at 7% lots of things will have broken in the meantime and we'd expect less cash). Similarly, when common stocks are purchased, Berkshire picks up the earnings yield, not counting whatever happens to the share price or future growth. Apple at 13x earnings is a 7.7% earnings yield. Of course, the annual gain on the Apple investment *far* exceeds both the earnings yield *and* the Semper opportunity cost yield. With more Apples, or BNSFs, or Pilots, the Semper 7%, or 5%, looks rather puny. Share repurchases are retired at Berkshire's earnings yield. The "income" picked up with the method breaks down if investable cash lingers permanently, a genuine risk if the two-decade range for cash to assets or net debt to equity are any barometer. In the grand scheme of things, we're talking about roughly half of current cash balance genuinely investable. At Berkshire's conservative presumption that cash won't fall below \$30 billion and our addition of one year of insurance losses paid as cash, \$85 billion remains available. That's 80% of total firm assets. One final thought: Today's U.S. Treasury yield curve is highly inverted. If longer-term yields rise from current levels, it wouldn't be surprising to see Berkshire increase fixed-income holdings in the insurance portfolio and reduce cash there. Maybe. Jimmy Buffett sang, "Math Sucks." Warren Buffett sings, "Bonds Suck."

Reduce Net Income to Reflect Higher Normalized Pension Expense

The pension adjustment methodology we've used for two decades was covered in past letters. Here we'll just overview the earnings adjustment for Berkshire in 2023 only for educational purposes. If you own or analyze companies with large legacy defined benefit plans, I encourage you to read our old letters. In a nutshell, we generally apply a 4% assumed rate of return on the fair value of pension assets versus Berkshire's 5.9% (down from 6.1% in 2022) and run the difference as an annual expense through the income statement. We do the same by amortizing the collective pension benefit obligation (PBO) underfunded status over ten years, assuming a full funding over a decade. The combination a year ago suggested Berkshire would commit an additional \$408 million pre-tax and \$322 million after-tax to its pension funds annually. 2023's market gains will eliminate any unfunded pension status meaning we assign no charge against normalized earnings.

This adjustment in Berkshire's case was never material. We don't try to figure out what any charge will look like until release of each year's annual report. Low interest rates combined with rich stock prices made our very long-standing 4% assumed return conservatively realistic when analyzing companies with large defined benefit plans. It's never been meaningful here because Berkshire's pension plans at the subsidiaries are small and it regularly assumes both lower expected investment returns and allocates more to public equities than most.

Our method is *far* from actuarially correct but has proven reliable. What the method has done is kept us out of old businesses where the pension plan rivals the business in size and importance. It captures the huge one-off funding that takes place periodically, with the CFO suggesting analysts *ignore* the \$4 billion we just borrowed and "invested" in the pension. No, no, no. Rather, \$400 million ought to have been contributed annually for a decade. With nearly all plans failing to achieve their return assumptions for more than twenty years, it's been a useful tool. Overall, the pension situation improved for investors. The number of companies with defined benefit plans is lower and return assumptions have come down from approximately 9% to 6.5%. With some companies it's a big deal. When interest rates require a microscope to identify and stock markets are at levels consistent with historical secular peaks, the issue is worth considering for the investor in companies with materially large pension fund obligations. It's been included in this letter for years and as part of our appraisal process as a teaching tool for young investors.

Other Non-Recurring Adjustments

From time-to-time additional adjustments are necessary. Non-tax adjustments at year-end 2017 for the TCJA can be seen in the five-year summary table below. One adjustment irregularly occurs if the stock portfolio trades at a level we find dramatically overvalued or undervalued, where market value is adjusted with a discount or premium. This adjustment does not impact our earnings-based approach.

2020 required a non-cash adjustment reflecting a non-cash, non-tax-deductible write-down of \$10 billion in goodwill at Precision Castparts, plus another \$400 million *after-tax* charge against other intangibles. These “expenses” were properly dismissed as non-operating but cannot be ignored. The analyst cannot ignore the write-down and apply current and future profitability against a now lower equity balance, crediting the sinning management that overpaid for the assets requiring the charge. “Thou shalt not forget the price paid for an acquisition.” Fortunately, you’d have to look and keep looking for these charges at Berkshire over the 57 years present management has run the place. They don’t exist. “Ignore the expense as non-cash,” suggests the convincing CFO, “but let me show you our return on equity, albeit written down.” Lest you think the charges are immaterial, in 2020 write-offs and write-downs amounted to 23% of operating earnings, shrinking book value of the index by 2.9%. I highly recommend taking a meat cleaver to the 20% return on equity of the index in 2023. 2023 write-offs were at a much more modest 9.5% and 10.0% in 2022, typical during good times. When charges are low, get ready for coming recessions and the big-bath, kitchen-sink write-offs that come with them.

2023 requires a \$1.3 billion after-tax adjustment for non-tax loss accruals at BH Energy’s PacifiCorp for 2020 wildfires, discussed earlier. Cash approximating the accruals will likely be paid, reducing cash and firm value, but including the accrual in BHE’s current profitability and capitalizing an understated earning power figure will understate firm valuation. Perhaps this is the equivalent of CFOs educating sell-side analysts and eager to “beat-the-number” investors the merits of community-adjusted EBITDA. However, ours is simply trying to get at normalized earning power and how well investments perform. That’s why we will always look to profitability at the MSR group by remembering how much Berkshire paid for Precision Castparts before writing-down the equity. Do this for the S&P and the ROE ain’t 20%.

Final periodic adjustments, and here they do reflect earning power, are made if a business or group is under earning or over earning relative to normalized potential. For several years, BNSF and a handful of the manufacturing and industrial businesses were adjusted upward because current profitability was depressed. These subsidiaries improved back to a normalized steady state as of 2018 and again in 2021. The pandemic harmed many MSR businesses badly during 2020. A trade war and pandemic jointly worked against the railroad. Combining the modestly depressed profits with the more severely impacted earnings at MSR, we measured normalized GAAP adjusted after-tax profitability as depressed by \$2.9 billion. The need for markup was gone in 2021, with nearly all Berkshire operations in high gear. At year-end 2022, only profitability at the railroad was modestly depressed. In 2023 the railroad is even more depressed. If the rail earns 14% normalized on equity, profits are perhaps \$1.9 billion understated. I’m not marking overall profitability higher at the moment given the majority of Berkshire’s subsidiaries are performing exceedingly well and cash yields are high. In places like GEICO, our underwriting normalization method allowed for improvement from what had been dismal results. When overearning, as now, we’ll mark down normalized profitability. Note these final adjustments are not made to our GAAP-adjusted results but at the subsidiary level.

The final adjustment under consideration to Berkshire’s GAAP financials (and beyond) is the degree to which improved profitability thanks to the TCJA tax changes will phase out, expire, and be competed away. We attempt to capture the decline in the benefit in our sum-of-the-parts method for calculating Berkshire’s intrinsic value. To date, little loss from competition is apparent, at least in the aggregate.

Summary of GAAP Adjustments to Economic Earnings

After-Tax GAAP Adjustments to Economic Earnings: 2023 Expected (in billions)							
	2017	2018	2019	2020	2021	2022	2023 (e)
Normalized Recurring GAAP Adjustment to Economic Earnings							
Add retained earnings of equity investees, taxed at 3% (1/7th of new 21% federal rate)	5.3	10.0	10.0	10.0	11.8	16.2	13.408
Add income for DTL's created with PP&E capex to reflect cash tax<GAAP tax	1.4	1.4	1.7	1.7	1.4	1.6	1.1
Add 90% of amortization charge for intangibles (was 80%)	0.9	0.9	0.9	1.1	1.1	1.1	1.232
Add optionality premium for near/intermediate investments with cash>(1-year insurance losses) + \$30 billion	2.7	2.3	3.8	5.5	3.2	0.2	0.749
<u>Reduce net income to reflect higher normalized pension expense</u>	<u>-0.5</u>	<u>-0.5</u>	<u>-0.4</u>	<u>-0.4</u>	<u>-0.4</u>	<u>-0.3</u>	<u>-0.001</u>
Normalized Recurring GAAP Adjustment to Economic Earnings (before removing realized g/l)	\$ 9.9	\$ 14.1	\$ 16.0	\$ 17.9	\$ 17.1	\$ 18.7	\$ 16.5
Periodic or Irregular in Amount or One-Time Adjustments to GAAP Net Income							
Remove realized and unrealized gains/losses, including from derivative liabilities; 21% tax rate beginning 2018	-1.4	17.7	-57.4	-31.6	-62.3	53.6	-60.643
Remove reported underwriting gain/loss	2.2	-1.6	-0.3	-0.7	-0.7	0.09	-6.58
Add normalized underwriting profit, retroactive reinsurance and periodic payment annuity losses	2.1	2.2	2.4	2.6	2.7	2.9	4.345
Berkshire TCJA Adjustment one-time non-cash	-28.2						
Kraft Heinz TCJA Adjustment one-time non-cash	-1.7						
Write-down after-tax of PCC 2020 (\$10B goodwill and \$0.4B net intangibles)				10.4			
PacifiCorp Wildfires Loss Accruals \$1.6B pretax noncash 2023							1.264
Total Periodic or Irregular in Amount or One-Time Adjustments to GAAP Net Income	\$ (27.0)	\$ 18.3	\$ (55.3)	\$ (19.3)	\$ (60.3)	\$ 56.6	\$ (61.6)
GAAP Net Earnings (From Income Statement)	\$ 44.9	\$ 4.0	\$ 81.4	\$ 42.5	\$ 89.8	\$ -22.8	\$ 100.417
Total Adjustment (assumes no 4Q18 gain/loss on investments or irregular underwriting gain/loss)	\$ (17.2)	\$ 32.4	\$ (39.3)	\$ (1.4)	\$ (43.2)	\$ 75.4	\$ (45.1)
Semper Adjusted Net Income; Economic Earnings ^*	\$ 27.8	\$ 36.4	\$ 42.1	\$ 41.1	\$ 46.6	\$ 52.5	\$ 55.291

Source: Semper Augustus; Berkshire Hathaway and Subsidiary SEC Filings

Annual adjustments are all over the map. Big movers are removing year-to-year gains and losses from investments and to a lesser degree short-term underwriting results, replacing each with logical normalization factors. Volatility in marketable securities and underwriting make analyzing the operations of Berkshire's reported results impossible. Assessing economic profitability requires an understanding of accounting strengths and weaknesses. Sometimes GAAP is CRAAP.

In total, the process eliminates the reported volatility that comes with owning a large portfolio of common stocks as well as the period-to-period swings in underwriting profitability among a diverse group of insurers. We capture the degree to which some intangibles do not decay in value; whether or when Berkshire will invest its cash reserves and into how much incremental earning power; the proper economic versus accounting treatment of insurance "float"; the difference between reported and cash taxes actually paid, now and prospectively. The process gets us to a durable appraisal of earning power.

Methods and granular estimates used in our process are open to debate. Berkshire is so diverse that the number of adjustments required in arriving at an understanding of durable earning power makes for quite an exercise. An equally important method for valuing Berkshire is through an analysis of its individual components, or at least large clusters of groups. A sum-of-the-parts analysis reconciles closely with GAAP adjustments made to the rolled-up consolidated financial statements because adjustments made within the "parts" are also incorporated top down. Accounting adjustments applied to the whole also apply individually to the segments. The analyst can choose to modify assumptions used at each step, adopt some, or dismiss the method entirely. The GAAP adjusted approach reconciling against other methods used discerns what we believe is a conservative appraisal of Berkshire Hathaway's intrinsic value. Following the adjustments allows for a straightforward method of converting GAAP reported quarterly and annual figures to normalized.

It's important that our clients understand how we view measurement of earning power at what has been Semper's largest holding for more than two decades. Any concern that a public presentation of the approach would drive the stock up to fair value and make the shares unbuyable has been proven not a concern. Warren Buffett and Charlie Munger long wondered at Berkshire's annual meeting why so few emulate a system that's worked so well for what's now a year shy of six decades. To the extent the shares trade with a sizable and persistent discount to a reasonable appraisal of intrinsic value suits us just fine. Price matters, but only if one appreciates value.

SUMMARY

What a year. Lots of reflection went on during the writing of the letter. Semper is celebrating its 25th anniversary. It's hard to believe a quarter century has passed since we took on our first clients. The market was raging for everything tech, media, telecom and internet, shunning everything else. It was clearly a bubble in some assets. It was clearly not in others, at least to us.

A few months in and we invested in Berkshire for the first time. The tech bubble was popping but nobody knew the top was already in. Chad and I made our way to Omaha for the annual meeting we'd heard about. There sat Warren at the old municipal arena, Charlie to his left. There was a buzz in the air, but also an insecurity among some in the room that they were missing out on something, that the old guys at the dais were out of touch. Then the Q&A began and soon got to why Berkshire didn't own tech. Couldn't it do better if it were willing to just own some. Warren answered, as he does, gracious as always and always with logic. When Charlie chimed in, we knew we were home.

Thus began a 24-year love affair, learning from and entertained at the same time by the smartest man in the room. What an extraordinary life. Any who have taken the time to really listen to Charlie have sought to be better in their own lives. Charlie was inspiring. His character, intellect, deep sense of right and wrong, his wit, rationality and infectious optimism were contagious and traits to emulate. What set him apart was the candor. There was no dancing around right or wrong. He was usually right, rational and quick to the point. You didn't have to read between the lines to know Charlie believed if you were invested in the mania, you would be burned. No empathy. Just logic. Both were correct.

Warren and Charlie have both said many times that they never had an argument. They would disagree on numerous issues, to which Warren famously said, "When we differ, Charlie usually ends the conversation by saying: 'Warren, think it over, and you'll agree with me because you're smart and I'm right.'" Twenty-five years running Semper and twenty-four of them as Berkshire shareholders. What a gift of an investment education the two of them delivered. Tuition was just getting to Omaha. I cherish the weekend and will for a long time. This year won't be the same. But the beat goes on, and Charlie's spirit will permeate Berkshire and its culture for a long time.

As investors we face real challenges over the coming years and decades. Inflated asset values sit on a powder keg of leverage. Complicit central bankers will do what they can to put off the inevitable and necessary unwinding of debt. China is now one of the biggest risk factors in the sea of brewing troubles. The wrong way to double GDP per capita is to cut your population in half but that's what's coming. The world's largest importer of every base commodity under the sun, and in turn the largest manufacturer of base goods for the world, is now in a decades-long decline. Sitting on more debt than their overleveraged trading partners, what was the growth engine of the world just hit the wall.

We are attuned to the risks of leverage and China. In 2000 we were attuned to the risks of leverage and the tech bubble. We've managed well the two secular peaks on our watch. The world is getting more complicated. Whether we have inflation, deflation, depression, hyperinflation – who knows? Just as the inflationary 1970s were awful for stock, bond and real estate holders alike, it was also a time of great opportunity for the nimble. Berkshire got rich in the 1970s. Patience is a virtue. Opportunities will arise as they did in 2023. We had the chance to move sizable portions of capital around and into what we think are unbelievable bargains. We are seeing the fruit of some of that labor already here early in 2024.

I want to thank all of you for taking the time to read this letter every year, at least in part! Only for the encouragement of some of our friends and clients do we share the letter publicly. We never intended for the letter to be a public document or widely read. The fact that so many of our clients find us only *after* reading the letter makes for wonderfully aligned relationships. Our clients are largely curious about investing. They are business owners and company executives. Many are sophisticated professional investors and others are experts in other areas of the capital markets. Others are professionals in fields totally unrelated to investing but share a common interest. I'm

happy the letter has grown beyond the clients and a few friends in the profession. That it finds its way to college campuses and is read by younger investors with a passion for learning is gratifying. Warren and Charlie had no obligation to dedicate a second of time to teaching. Instead they gave lifetimes doing so.

Believe me the production of this letter takes a monumental effort. An ongoing debt of gratitude is owed to Lincoln Minor. Lincoln, not a professional investor but more curious and smarter than almost anyone around, has edited for several years now. He doesn't just edit. He's in the tables overstuffed with numbers and invariably finds the tiniest of errors. Before the final draft hits the printer he's found *lots* of them. His grammar is better than the nuns at my Catholic grade school. If there are still contests for diagramming sentences he'd win the world championship. Plus, his redline drafts back to me are filled with sidebar comments, most too ribald for publication but it keeps the humor level cranked up. Thanks, again, Linc. Frank Manzella also pitched in again, this year with terrific thoughts on structure and organization. My wife always catches gads of errors. The team at Semper is remarkable – Chad, Tory, Lance, Jennifer, Emmie and Caleb – you are the best. We run the investment operation by day, but their help with data, tables, charts, reconciliation and overall production value is off the charts. There is no 9 to 5 so thanks to all.

The portfolio is in great shape. At 10.3x to earnings, less than half the multiple of the S&P 500, we enter 2024 at among the *lowest* initial yearly valuations in our 25 years. The portfolio likewise trades for less than half of the multiples to book value and sales, with far better balance sheets, outstanding managements, and excellent prospects to reinvest retained earnings. We are in good shape to hopefully match or exceed returns earned over the past quarter century. In Berkshire, our largest holding, we own a diversified, durably predictable business earning above an unleveraged 10% return on equity trading at a wide discount to intrinsic value. Net cash, extremely conservative accounting and outstanding governance are rare qualities. To have them all in one place at today's price suggests reliably predictable returns for years. The stock will not be our highest performing investment, but it is the most knowable. As our base measure of opportunity cost, it remains a perfect hurdle.

It's hard to believe we are 25 years into this thing we call Semper Augustus. Time flies. It was almost 24 years ago to the day that we bought Berkshire for the first time. Sitting in the audience in Omaha for the first time, Warren and Charlie were 69 and 76. Their enthusiasm for investing made them seem like kids on a playground. They were. Chad and I are 54 and 55. I like to think we are just warming up.

We owe an enormous debt of gratitude to the best clients in the world for 25 years of your confidence, support, encouragement and trust. Many are you are as much friends and colleagues as you are clients. Huge thanks to the entire team at Semper. We have the most talented people in the world. Each is a pleasure to work with. While our charge is stewardship of your capital, I'd be surprised if you'd find a group of people with better rapport and who provide better service to clients. All are deeply committed to the task at hand. Our charge as stewards of your capital comes with enormous responsibility. We will never approach the responsibility with anything but our undivided care, focus and respect.

I hope you enjoyed the letter, my annual labor of love. We look forward to catching up with everyone.

I also look forward to seeing many of you in Omaha. The weekend will be anything but a funeral. We will celebrate the life of a great man. Berkshire couldn't have become what it is without Charlie. His spirit will pervade the business for a long time to come. His spirit will be with us when we gather. Peace.

Christopher P. Bloomstran

Semper Augustus Investments Group
8000 Maryland Avenue; Suite 1165
St. Louis, Missouri 63105
cpb@semperaugustus.com

Appendix A: Key Business Segment Information – Berkshire Hathaway 2023 Expected

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Appendix B – Capital Expenditures and Depreciation; Deferred-Tax Liabilities

CAPITAL EXPENDITURES AND DEPRECIATION; DEFERRED TAX LIABILITIES																					
(Dollars in millions)																					
Berkshire Total (All Operating Businesses)																					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (E)	Total
Capital Expenditures	1,278	2,195	4,571	5,373	6,138	4,937	5,980	8,191	9,775	11,087	15,185	16,082	12,954	11,708	14,537	15,979	13,012	13,276	15,464	19,094	206,816
Depreciation	941	982	2,066	2,407	2,810	3,127	4,279	4,683	5,146	5,418	6,215	6,673	7,411	7,719	8,386	8,747	9,319	9,465	9,666	9,966	115,426
Difference	337	1,213	2,505	2,966	3,328	1,810	1,701	3,508	4,629	5,669	8,970	9,409	5,543	3,989	6,151	7,232	3,693	3,811	5,798	9,128	91,390
BHE																					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (E)	Total
Capital Expenditures			2,423	3,513	3,936	3,413	2,593	2,684	3,380	4,307	6,555	5,876	5,090	4,571	6,241	7,364	6,765	6,611	7,505	9,526	92,353
Depreciation			949	1,157	1,128	1,246	1,262	1,333	1,440	1,577	2,177	2,451	2,560	2,548	2,830	2,947	3,376	3,584	3,702	3,900	36,267
Difference	-	-	1,474	2,356	2,808	2,167	1,331	1,351	1,940	2,730	4,378	3,425	2,530	2,023	3,411	4,417	3,389	3,027	3,803	5,626	52,186
BNSF																					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (E)	Total
Capital Expenditures							1,829	3,325	3,548	3,918	5,243	5,651	3,819	3,256	3,116	3,608	3,063	2,910	3,532	3,812	50,630
Depreciation							1,221	1,480	1,573	1,655	1,804	1,932	2,079	2,304	1,890	2,350	2,423	2,406	2,479	2,500	28,096
Difference	-	-	-	-	-	-	608	1,845	1,975	2,263	3,439	3,719	1,740	952	1,226	1,258	640	504	1,053	1,312	22,534
BHE + BNSF																					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (E)	Total
Capital Expenditures			2,423	3,513	3,936	3,413	4,422	6,009	6,928	8,225	11,798	11,527	8,909	7,827	9,357	10,972	9,828	9,521	11,037	13,338	142,983
Depreciation			949	1,157	1,128	1,246	2,483	2,813	3,013	3,232	3,981	4,383	4,639	4,852	4,720	5,297	5,799	5,990	6,181	6,400	64,363
Difference	-	-	1,474	2,356	2,808	2,167	1,939	3,196	3,915	4,993	7,817	7,144	4,270	2,975	4,637	5,675	4,029	3,531	4,856	6,938	78,620
DEFERRED TAX LIABILITIES *																					
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 **	2018	2019	2020	2021	2022	2023 (E)	
Investments	11,020	11,882	14,520	13,501	4,805	11,880	13,376	11,404	16,075	25,660	26,633	36,770	27,669	24,251	17,765	32,134	40,181	55,437	41,150	57,475	
Def Ch Reinsurance Assumed	955	828	687	1,395	1,373	1,385	1,334	1,449	1,392	1,526	2,721	2,798	2,876	3,226	2,970	2,890	2,613	2,234	2,073	2,450	
PP&E	1,201	1,202	4,775	4,890	7,004	8,135	24,746	28,414	29,715	32,409	34,618	36,770	39,345	26,671	28,279	29,388	30,203	31,323	32,080	34,000	
Goodwill and Intang												2,770	11,344	7,204	7,199	7,293	6,753	6,748	7,010	7,700	
Other	1,174	1,165	2,591	2,743	4,024	4,236	5,108	6,378	6,485	6,278	6,396	4,555	5,550	3,216	3,187	3,144	3,736	4,094	4,695	4,900	
Total	14,350	15,077	22,573	22,529	17,206	25,636	44,564	47,645	53,667	65,873	70,368	83,663	86,784	64,568	59,400	74,849	83,486	99,836	87,008	106,525	

Source: Semper Augustus

Appendix C – Cash and GAAP Tax Reconciliation

CASH TAXES AND GAAP TAXES																						
	Cumulative	2023 (e)	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Earnings Before Tax	666,242	124,977	30,576	111,686	55,693	102,696	4,001	23,838	33,667	34,946	28,105	28,796	22,236	15,314	19,051	11,552	7,574	20,161	16,778	12,791	10,936	12,020
GAAP Taxes **	158,595	23,621	8,518	20,879	12,440	20,904	321	6,683	9,240	10,532	7,935	8,951	6,924	4,568	5,607	3,538	1,978	6,594	5,505	4,159	3,569	3,805
Net Income *	507,647	101,356	22,058	90,807	43,253	81,792	4,322	17,153	24,427	24,412	20,170	19,845	15,312	10,746	13,494	8,441	4,994	13,213	11,015	8,528	7,308	8,151
Tax Rate	23.8%	18.9%	27.9%	18.7%	22.3%	20.4%	-8.0%	28.0%	27.4%	30.1%	28.2%	31.1%	31.1%	29.8%	29.4%	30.6%	26.1%	32.7%	32.8%	32.5%	32.6%	31.7%
Current Taxes	95,208	8,668	4,815	5,326	5,052	5,818	5,176	3,299	6,565	5,426	3,302	5,168	4,711	2,897	3,668	1,619	3,811	5,708	5,030	2,057	3,746	3,346
Deferred Taxes	63,387	14,953	13,333	15,553	7,388	15,086	5,497	3,386	2,675	5,106	4,633	3,783	2,213	1,671	1,939	1,919	1,833	886	475	2,102	177	459
Total Tax	158,595	23,621	8,518	20,879	12,440	20,904	321	6,685	9,240	10,532	7,935	8,951	6,924	4,568	5,607	3,538	1,978	6,594	5,505	4,159	3,569	3,805
Current as Percent of Total Tax	60.0%	36.7%	-56.5%	25.5%	40.6%	27.8%	-1612.5%	49.3%	71.0%	51.5%	41.6%	57.7%	68.0%	63.4%	65.4%	45.8%	192.7%	86.6%	91.4%	49.5%	105.0%	87.9%
Deferred as Percent of Total Tax	40.0%	63.3%	156.5%	74.5%	59.4%	72.2%	1712.5%	50.7%	29.0%	48.5%	58.4%	42.3%	32.0%	36.6%	34.6%	54.2%	-92.7%	13.4%	8.6%	50.5%	-5.0%	12.1%
Current Tax Rate	14.3%	6.9%	-15.7%	4.8%	9.1%	5.7%	129.4%	13.8%	19.5%	15.5%	11.7%	17.9%	21.2%	18.9%	19.3%	14.0%	50.3%	28.3%	30.0%	16.1%	34.3%	27.8%
Deferred Tax Rate	9.5%	12.0%	43.6%	13.9%	13.3%	14.7%	-137.4%	14.2%	7.9%	14.6%	16.5%	13.1%	10.0%	10.9%	10.2%	16.6%	-24.2%	4.4%	2.8%	16.4%	-1.6%	3.8%
Total Tax Rate	23.8%	18.9%	27.9%	18.7%	22.3%	20.4%	-8.0%	28.0%	27.4%	30.1%	28.2%	31.1%	31.1%	29.8%	29.4%	30.6%	26.1%	32.7%	32.8%	32.5%	32.6%	31.7%

* Before earnings attributable to noncontrolling interests

** GAAP Taxes for 2017 exclude one-time nontaxable gain of \$28,200 for TCJA; Offset is deferred taxes as reported were (24,814) adjusted to \$3,386; the \$24,814 is a reduction of net DTL's

2020 Write-down Precision Castparts: \$10 billion Goodwill (not tax deductible); \$400 million after-tax other intangibles

Source: Semper Augustus

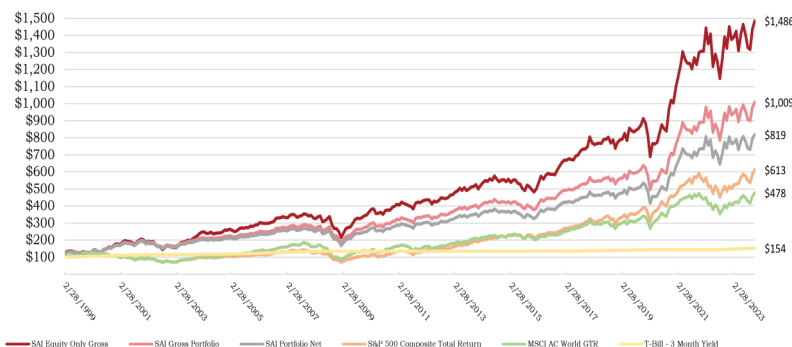
Composite Performance

Year End	Gross of Fees	Net of Fees	Gross of Fees Equities Only*	Net of Fees Equities Only*	MSCI All Country World Index	S&P 500
1999**	29.9%	28.8%	29.1%	28.1%	27.5%	19.9%
2000	26.8%	25.6%	30.7%	29.5%	-14.0%	-9.1%
2001	20.8%	19.7%	23.1%	22.0%	-15.9%	-11.9%
2002	-15.5%	-16.2%	-22.0%	-22.7%	-19.0%	-22.1%
2003	21.8%	20.8%	38.2%	37.1%	34.6%	28.7%
2004	9.2%	8.4%	16.3%	15.5%	15.8%	10.9%
2005	6.2%	5.4%	7.4%	6.6%	11.4%	4.9%
2006	14.2%	13.3%	18.4%	17.5%	21.5%	15.8%
2007	3.8%	3.0%	3.1%	2.3%	12.2%	5.5%
2008	-20.3%	-21.5%	-21.6%	-22.7%	-41.9%	-37.0%
2009	22.0%	20.8%	27.9%	26.7%	35.4%	26.5%
2010	12.8%	11.6%	14.4%	13.2%	13.2%	15.1%
2011	6.9%	6.1%	7.1%	6.3%	-6.9%	2.1%
2012	6.5%	5.7%	6.8%	6.0%	16.8%	16.0%
2013	15.5%	14.6%	17.3%	16.4%	23.4%	32.4%
2014	4.6%	3.8%	5.2%	4.4%	4.7%	13.7%
2015	-8.7%	-9.4%	-10.3%	-11.0%	-1.8%	1.4%
2016	22.1%	21.2%	27.7%	26.8%	8.5%	12.0%
2017	13.5%	12.6%	18.0%	17.1%	24.6%	21.8%
2018	-1.3%	-2.1%	-1.4%	-2.1%	-8.9%	-4.4%
2019	20.4%	19.5%	23.6%	22.7%	27.3%	31.5%
2020	11.2%	10.4%	11.9%	11.1%	16.8%	18.4%
2021	24.9%	24.0%	27.3%	26.4%	19.0%	28.7%
2022	1.9%	1.0%	2.1%	1.2%	-18.0%	-18.1%
2023	11.7%	10.8%	12.1%	11.1%	22.8%	26.3%

	Gross of Fees	Net of Fees	Gross of Fees Equities Only*	Net of Fees Equities Only*	MSCI All Country World Index	S&P 500
Cumulative Since Inception**	908.6%	719.3%	1385.9%	1107.0%	378.0%	512.7%
Annualized Since Inception**	9.8%	8.8%	11.5%	10.5%	6.5%	7.6%

* This is supplemental information

** Inception Date 2/28/1999. # Firm Assets at 12/31/2023 is \$597 million, at 12/31/2022 was \$477 million, at 12/31/2021 was \$390 million and at 12/31/2020 was \$305 million.



Firm Overview:

Semper Augustus Investments Group, LLC claims compliance with the Global Investment Performance Standards (GIPS®). For the purpose of complying with GIPS, SAI defines itself as Semper Augustus Investments Group, LLC, an independently registered investment adviser. For purposes of determining firm assets under management, SAI includes all discretionary and non-discretionary assets as well as all fee paying and non-fee paying.

Composite Description:

The Semper Augustus Fundamental Intrinsic Value Equity consists of portfolios managed for Semper Augustus' clients according to the firm's published investment philosophy. Semper Augustus employs a fundamental value investment strategy, identifying companies earning free cash returns in excess of a realistic estimate of the firm's cost of capital. Our firm defines risk as a permanent loss of capital, not as volatility around some mean. Portfolios have generally contained fewer than 30 holdings and are often concentrated in a small handful of businesses with high business quality and share prices at a significant discount to conservative appraisals of intrinsic business value. These dual margins of safety are crucial to the investment process, and lend themselves to generally long holding periods and low portfolio turnover. During periods of high volatility, turnover can be opportunistically higher. Investments are made across all market capitalizations, in both domestic and globally headquartered businesses. Our firm makes international investments in businesses domiciled in industrialized countries where the rule of law is strong and accounting standards are high. We are benchmark agnostic. Industry weightings are not a consideration. The composite includes the income and performance derived from various option-writing strategies in some client accounts. Allocations to cash are a byproduct of the investment process and not a permanent allocation. To be included in the composite, accounts must meet certain thresholds of equity securities purchased by SAI. This method generally excludes accounts that are managed as "balanced" accounts and client accounts that have not met the required threshold for inclusion. Cash and equivalents have been significant holdings at times.

Index Return Information:

The MSCI ACWI returns are gross of any fees required to replicate the index and are also pre-tax. The index is theoretically passive (unmanaged) but in reality, replication requires trading costs and some management fees. Fundamental Intrinsic Value Equity may differ materially from the index as the Fundamental Intrinsic Value Equity owns concentrated positions and the MSCI ACWI has a bias towards large cap stocks. Fundamental Intrinsic Value Equity has included varying investments in small, mid and large cap stocks in addition to investments in cash and short-duration fixed income securities. The MSCI ACWI is broadly used as an investment benchmark. The MSCI ACWI index is the benchmark for Fundamental Intrinsic Value Equity.

The S&P 500 returns are gross of any fees required to replicate the index and are also pre-tax. The index is theoretically passive (unmanaged) but in reality, replication requires trading costs and some management fees. The Fundamental Intrinsic Value Equity may differ materially from the index as the Fundamental Intrinsic Value Equity owns concentrated positions and the S&P 500 has a bias towards large cap stocks and holds only U.S. domiciled companies. Fundamental Intrinsic Value Equity has included varying investments in small, mid and large cap stocks, both foreign and domestic, in addition to investments in cash and fixed income securities. The S&P 500 is broadly used as an investment benchmark and is presented in this document to provide a clear measure of how the strategy did against the general stock market.

Composite Return Details:

Supervised assets are defined as assets acquired by SAI in client accounts based on the discretion granted in client agreements. This process involves the establishment of a model security and the dates whereby the security is held. For securities received into an account prior to or after the model period; directed purchases by a client; or corporate actions arising from non-model securities; these securities have been excluded from the supervised assets. SAI must have initiated the trade or the security was a model security when transferred into an account for its performance to be included in the composite.

Returns are presented both gross of management fee and net of management fees and performance fees and include the reinvestment of all income. The composite was created on March 1, 2018. The U.S. Dollar is the currency used to express performance.

Returns are presented net of all commissions and any margin interest expense incurred in the management of portfolio accounts. Composite management fees have been calculated as if the fees were charged each month based at the actual client contract rate on the month-end composite assets for each client. For family and employee accounts that do not pay a management fee, a fee of 1.25% was included in the composite management fees during the period when the accounts were included in the composite. Actual returns will be reduced by investment advisory fees and any other expenses that may be incurred in the management of the portfolio accounts. The collection of fees produces a compounding effect on the total rate of return net of management fees.

Gross of Fees Equities Only: Represents the actual performance of all equity securities included in the composite, including reinvested dividends. It is a pure equity only return and does not have any cash equivalents or fixed income securities included. Net of Fees Equity Only: Represents Gross of Fees Equities Only reduced by Composite management fees consistent with the net fee adjustment detailed above where Composite management fees have been calculated as if the fees were charged each month based at the actual client contract rate on the month-end composite assets for each client. For family and employee accounts that do not pay a management fee, a fee of 1.25% was included in the composite management fees during the period when the accounts were included in the composite.

Actual returns will be reduced by investment advisory fees and other expenses that may be incurred in the management of the account. The collection of fees produces a compounding effect on the total rate of return net of management fees. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) quarterly fee assessment, (b) \$1,000,000 investment, (c) portfolio return of 8% a year, and (d) 1.00% annual investment advisory fee would be \$10,416 in the first year, and cumulative effects of \$59,816 over five years and \$143,430 over ten years. The annual composite dispersion presented is an asset-weighted standard deviation. To obtain a GIPS Composite Report and/or the firm's list of composite descriptions, please contact Chad Christensen at csq@semperaugustus.com. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

Past performance is not indicative of future results.

COMPOSITE PERFORMANCE: COMPOUND ANNUAL GROWTH RATES (CAGR)
FROM INCEPTION AND LOOKING BACK TO INCEPTION

Year		Gross Portfolio	Gross Portfolio CAGR from 2023	Gross Portfolio CAGR from 1999	Portfolio Net	Portfolio Net CAGR from 2023	Portfolio Net CAGR from 1999	Equities Only Gross	Equities Only Gross CAGR from 2023	Equities Only Gross CAGR from 1999	Equities Only Net	Equities Only Net CAGR from 2023	Equities Only Net CAGR from 1999	MSCI AC World GTR	MSCI AC World GTR CAGR from 2023	MSCI AC World GTR CAGR from 1999	S&P 500 Composite Total Return	S&P 500 CAGR from 2023	S&P 500 CAGR from 1999
1999*	25yr	29.9%	9.8%	29.9%	28.8%	8.8%	28.8%	29.1%	11.5%	29.1%	28.1%	10.5%	28.1%	27.5%	6.5%	27.5%	19.9%	7.6%	19.9%
2000	24yr	26.7%	8.9%	31.2%	25.6%	8.0%	30.0%	30.7%	10.7%	33.1%	29.5%	9.8%	31.8%	-13.9%	5.7%	5.2%	-9.1%	7.0%	4.8%
2001	23yr	20.8%	8.2%	27.5%	19.7%	7.3%	26.3%	23.1%	9.9%	29.4%	22.0%	9.0%	28.2%	-15.9%	6.6%	-2.8%	-11.9%	7.8%	-1.4%
2002	22yr	-15.5%	7.7%	14.5%	-16.2%	6.8%	13.5%	-22.0%	9.4%	13.4%	-22.7%	8.5%	12.4%	-19.0%	7.8%	-7.3%	-22.1%	8.8%	-7.3%
2003	21yr	21.8%	8.9%	16.0%	20.8%	8.0%	14.9%	38.2%	11.1%	18.2%	37.1%	10.2%	17.1%	34.6%	9.2%	0.1%	28.7%	10.5%	-0.8%
2004	20yr	9.2%	8.3%	14.8%	8.4%	7.4%	13.8%	16.3%	9.9%	17.9%	15.5%	9.0%	16.8%	15.8%	8.1%	2.7%	10.9%	9.7%	1.1%
2005	19yr	6.2%	8.2%	13.5%	5.4%	7.4%	12.5%	7.4%	9.6%	16.3%	6.6%	8.7%	15.3%	11.4%	7.7%	3.9%	4.9%	9.6%	1.7%
2006	18yr	14.2%	8.4%	13.6%	13.3%	7.5%	12.6%	18.4%	9.7%	16.5%	17.5%	8.8%	15.5%	21.5%	7.5%	6.0%	15.8%	9.9%	3.4%
2007	17yr	3.8%	8.0%	12.4%	3.0%	7.1%	11.5%	3.1%	9.2%	14.9%	2.3%	8.3%	14.0%	12.2%	6.7%	6.7%	5.5%	9.6%	3.6%
2008	16yr	-20.3%	8.3%	8.6%	-21.5%	7.4%	7.6%	-21.6%	9.6%	10.5%	-22.7%	8.7%	9.6%	-41.8%	6.4%	0.3%	-37.0%	9.8%	-1.5%
2009	15yr	22.0%	10.5%	9.7%	20.8%	9.7%	8.8%	27.9%	12.1%	12.0%	26.7%	11.2%	11.0%	35.4%	10.8%	3.1%	26.5%	14.0%	0.8%
2010	14yr	12.8%	9.8%	10.0%	11.6%	8.9%	9.0%	14.4%	11.0%	12.2%	13.2%	10.2%	11.2%	13.2%	9.2%	3.9%	15.1%	13.1%	1.9%
2011	13yr	6.9%	9.5%	9.8%	6.1%	8.7%	8.8%	7.1%	10.8%	11.8%	6.3%	10.0%	10.8%	-6.9%	8.9%	3.0%	2.1%	13.0%	1.9%
2012	12yr	6.5%	9.7%	9.5%	5.7%	8.9%	8.5%	6.8%	11.1%	11.5%	6.0%	10.3%	10.5%	16.8%	10.3%	4.0%	16.0%	13.9%	2.9%
2013	11yr	15.5%	10.1%	9.9%	14.6%	9.2%	8.9%	17.3%	11.5%	11.8%	16.4%	10.7%	10.9%	23.4%	9.8%	5.2%	32.4%	13.7%	4.7%
2014	10yr	4.6%	9.5%	9.6%	3.8%	8.7%	8.6%	5.2%	10.9%	11.4%	4.4%	10.1%	10.4%	4.7%	8.5%	5.2%	13.7%	12.0%	5.2%
2015	9yr	-8.7%	10.1%	8.4%	-9.4%	9.3%	7.4%	-10.3%	11.6%	10.0%	-11.0%	10.7%	9.0%	-1.8%	8.9%	4.7%	1.4%	11.9%	5.0%
2016	8yr	22.1%	12.7%	9.1%	21.2%	11.8%	8.2%	27.7%	14.7%	10.9%	26.8%	13.8%	10.0%	8.5%	10.3%	4.9%	12.0%	13.2%	5.4%
2017	7yr	13.4%	11.4%	9.3%	12.6%	10.6%	8.4%	18.0%	12.9%	11.3%	17.1%	12.1%	10.3%	24.6%	10.6%	5.9%	21.8%	13.4%	6.2%
2018	6yr	-1.3%	11.1%	8.8%	-2.1%	10.2%	7.8%	-1.4%	12.1%	10.6%	-2.1%	11.3%	9.7%	-8.9%	8.4%	5.1%	-4.4%	12.1%	5.6%
2019	5yr	20.4%	13.7%	9.3%	19.5%	12.9%	8.4%	23.6%	15.0%	11.2%	22.7%	14.1%	10.3%	27.3%	12.3%	6.1%	31.5%	15.7%	6.7%
2020	4yr	11.2%	12.1%	9.4%	10.4%	11.2%	8.5%	11.9%	13.0%	11.2%	11.1%	12.1%	10.3%	16.8%	8.8%	6.5%	18.4%	12.0%	7.2%
2021	3yr	24.9%	12.4%	10.0%	24.0%	11.5%	9.1%	27.3%	13.3%	11.9%	26.4%	12.4%	11.0%	19.0%	6.2%	7.1%	28.7%	10.0%	8.1%
2022	2yr	1.9%	6.7%	9.7%	1.0%	5.8%	8.8%	2.1%	6.9%	11.5%	1.2%	6.1%	10.5%	-18.0%	0.4%	5.9%	-18.1%	1.7%	6.9%
2023	1yr	11.7%	11.7%	9.8%	10.8%	10.8%	8.8%	12.1%	12.1%	11.5%	11.1%	11.1%	10.5%	22.8%	22.8%	6.5%	26.3%	26.3%	7.6%

* Inception Date 2/28/1999.

SEC-registered investment advisory firms are now required to disclose 1-, 5- and 10-year returns, or the time period since performance composite or portfolio inception, if shorter. The new rule seeks to prevent “advertisers” from cherry-picking time periods that make returns appear more favorable. As short- and intermediate-term returns change frequently due to beginning and endpoint sensitivity, we have chosen to disclose *all* yearly intervals from the current 1-year return all the way back to inception. Intra-year periods will likewise be shown annually back to inception. Better, in our opinion, to provide more data than less. We are augmenting the mandated disclosure with the full data set – not to confuse – but if we must provide a few defined numbers, to the extent anybody uses them in decision making, we want you to have the information we’d want if our roles were reversed. The yearly return intervals are *italicized and shaded in blue*. Information presented herein was obtained from sources believed to be reliable, but accuracy, completeness and opinions based on this information are not guaranteed. Under no circumstances is this an offer or a solicitation to buy securities suggested herein. The reader may judge the possibility and existence of bias on our part. The information we believe was accurate as of the date of the writing. As of the date of the writing a position may be held in stocks specifically identified in either client portfolios or investment manager accounts or both. Rule 204-3 under the Investment Advisers Act of 1940, commonly referred to as the “brochure rule”, requires every SEC-registered investment adviser to offer to deliver a brochure to existing clients, on an annual basis, without charge. If you would like to receive a brochure, please contact us at (303) 893-1214 or send an email to csc@semperaugustus.com.