

THE JOURNAL OF
**INVESTMENT
CONSULTING**

A reprinted article from Volume 24, Number 1, 2025

THE MASTERS SERIES

Jeremy Siegel, PhD:
Reflections on Growth, Inflation,
and Investment Returns



INVESTMENTS & WEALTH INSTITUTE®



Jeremy Siegel, PhD

REFLECTIONS ON GROWTH, INFLATION, AND INVESTMENT RETURNS

Jeremy Siegel is the Russell E. Palmer Professor Emeritus of Finance at The Wharton School of the University of Pennsylvania. He earned a BA in mathematics and economics from Columbia University in 1967, earned a PhD in economics from the Massachusetts Institute of Technology in 1971, and spent one year as a National Science Foundation Post-Doctoral Fellow at Harvard University. Siegel taught for four years at the Graduate School of Business of the University of Chicago before joining the Wharton faculty in 1976.



Jeremy Siegel, PhD

Siegel has written and lectured extensively about the economy and financial markets and appears frequently on CNN, CNBC, NPR, and other networks. He has contributed articles to the Wall Street Journal, Barron's, Financial Times, and other national and international news media. He served for fifteen years as head of economics training at J. P. Morgan. For the past thirty years, he has been the academic director of the U.S. Securities Industry Institute.

Siegel is the author of numerous professional articles and three books. His best-known book, *Stocks for the Long Run*, in its sixth edition, was named by the Washington Post as one of the ten best investment books of all time. His book, *The Future for Investors: Why the Tried and the True Triumph over the Bold and New*, was named one of the best business books published in 2005 by Businessweek, the Financial Times, and Barron's magazine.

Siegel has received many awards and citations for his research and excellence in teaching. In November 2003, he was presented with the Distinguished Leadership Award by the Securities Industry Association. In May 2005, he was presented the prestigious Nicholas Molodovsky Award by the Chartered Financial Analysts Institute to "those individuals who have made outstanding contributions of such significance as to change the direction of the profession and to raise it to higher standards of accomplishment."

Past awards also include the Graham and Dodd Award for the best article published in the Financial Analysts Journal in 1993 and the Peter Bernstein and Frank Fabozzi Award for the best article published in the Journal of Portfolio Management in 2000.

In 1994, Siegel received the highest teaching rating in a worldwide ranking of business school professors conducted by BusinessWeek magazine. In March 2015, he was awarded The Adam Smith Distinguished Leadership Award for the individual who exemplifies an outstanding level of leadership, deep commitment to public service, and strong devotion to furthering economic initiatives among today's youth. He received the Investments & Wealth Institute Investment Consulting Impact Award in 2020.

In October 2025, Inna Okounkova, Journal of Investment Consulting editor-in-chief; Mark Anson, The Commonfund; Edward Baker, EthicalFin; Geoffrey Gerber, TWIN Capital Management; and Arun Muralidhar, Alpha Engine Global Investment Solutions spoke with Siegel about long-term equity investing, U.S. exceptionalism, inflation, and the role of financial advisors.

INNA OKOUNKOVA: What were the major factors that helped to shape your career? What do you regard as your major achievement as well as your biggest mistake or disappointment?

JEREMY SIEGEL: I was always very interested in the financial markets. I was good at math. I was a math major before turning to economics, and I double majored in those subjects at Columbia College. Once I took economics, I knew I loved it. Back in the sixties, finance was an undeveloped field. Advisors said, "If you want to understand about markets, you should go to a PhD program in economics." MIT had a PhD program in finance, but finance was very different then. The capital asset pricing model or the Sharpe ratio was being developed at that time and was not in the curriculum. There wasn't even the Black-Scholes model when I went to graduate school.

If I was born maybe ten years later, I would have pursued a finance PhD. In hindsight, I think taking economics gave me a good perspective because I approached finance from a macro standpoint. Some prominent financial advisors make mistakes because they don't always understand the macro context. Even though I didn't have a formal finance degree, I think my course of study was beneficial for me.

My greatest contribution is *Stocks for the Long Run*. I won't go into the details about what prompted me to write it, but I was an unknown author at the time. But the book received rave reviews. The first edition came out in 1994, and the book is now in the sixth edition. I think it's sold almost a half a million books over this thirty-year time span. The book tries to explain the market from an integrated macroeconomics-finance point of view.

What I documented in *Stocks for the Long Run*—and one of the things I think made this book so popular—was that, although stocks tend to be volatile in the short run, they are less volatile than bonds, in terms

of purchasing power, in the long run. I emphasized that this asset class gave a higher return for long-term investors with less volatility than bonds. It was a real breakthrough to explain why investors with long-term horizons should have a heavy equity market allocation.

I would say my biggest regret is that I did not see the beginnings of the financial crisis of 2008 and 2009. I was complacent. I didn't know all these bad loans were part of the balance sheets of these banking institutions. Neither did Alan Greenspan, then the chairman of the U.S. Federal Reserve. However, I made an excellent call a few years earlier when I nailed the peak of the stock market during the dot-com bubble of 2000.

INNA OKOUNKOVA: You were a key inspiration for investors to see equities as a more reliable path to long-term growth rather than short-term speculation, me included. Edward McQuarrie of Santa Clara University extended the data backwards. He claims that asset return patterns you documented in your book, *Stocks for the Long Run*, do not generalize to the nineteenth century. In your view, should this expanded historical data set influence how we present long-term opportunities to investors today?

JEREMY SIEGEL: I'm very acquainted with, and appreciate, Ed's work. He is a careful researcher who got into the weeds of that older data. Equity returns since 1871 come from the Cowles datasets, which Ed and all others say is accurate.¹ He said researchers, including me, overstated our conclusions based on pre-1871 data. He further maintained we didn't consider the failure of the First and Second Banks of the United States, which was a big part of the market in those early years.² Once you include those, the first sixty to seventy years of my sample, ranging from 1802 to 1871, equity market returns were not as good as I or others had indicated. However, there's no question about the data I used from 1871 onward, which is more than 150 years of data.

The bonds that McQuarrie uses in this early period are not what we would call the bonds of today. They were extremely risky and had a high correlation with the stock market. They were more like junk bonds with an equity-like return. That's why the bond returns he used for earlier years were much higher than mine. Today, of course, government bonds have a negative beta with the stock market rather than a positive beta. They are what we economists refer to as the risk-free rate of interest. His early bonds are not the same type of what we now call risk-free instruments. From 1871 onward, our bond returns are virtually the same. I stick with my thesis that equity returns are still not only superior, but more stable. If memory serves, his article in the *Financial Analysts Journal* ends with the great bull market of bonds in 2021 that then crashed in 2022 (McQuarrie 2023).

INNA OKOUNKOVA: Thank you for clarifying that. Following up on the bond crash, you were one of the people who provided insights into the cause of that crash. You spoke at the Q Group seminar where you explained how the money supply, as measured by M2, increased by 40 percent in

two years, which caused high inflation. Given the high rate of inflation, returns on bonds, and even T-bills, declined as much as 45 percent in real terms over the course of two years or so. Given that inflation subsequently decreased, do we still need to be concerned about inflation risk going forward?

JEREMY SIEGEL: I was shocked by the Fed's profligate behavior during the pandemic. The excesses began in March 2020, the month that COVID hit. Government spending ramped up and the Federal Reserve just printed money and handed it to the government. We had the biggest two-year increase in money supply in 150 years. I was absolutely convinced substantial inflation would result and prices would not come down. It wasn't going to be temporary. The Federal Reserve slammed on the brakes hard after that episode, almost causing a recession.

Since 2023 the money supply has been growing at a modest rate of 4 percent per annum.³ That's why I am not worried about inflation in the near term. The Trump tariffs will put a small bump to inflation because they are really a consumption and production tax.

If we look ahead, we know the budget deficit is not controlled in the long term. This means we could face the threat of inflation to be sure. It's something we all must consider. However, at the present time, we are in a very different world than we were during 2020-2022. I think inflation in the near term is going to be controlled.

GEOFFREY GERBER: Jeremy, I remember crossing paths with you on Locust Walk in the early 1980s when I was a graduate faculty member at Penn. How has your perspective on markets evolved from the 1980s to now, especially considering recent economic cycles? Do demographic trends alter your long-term return expectations? Are there still big misconceptions about stock market investing you encounter among investors today?

JEREMY SIEGEL: Your question relates to the major thesis of *Stocks for the Long Run*. The short run is different than the long run. I've been critical of much portfolio analysis because we calculate one-year standard deviations of asset returns and then construct efficient frontiers for all holding periods. Years ago, I asked: "Well, what happens if you have a thirty-year horizon?" The profession's answer was: "Oh, we can prove that if asset prices are random walks, it doesn't matter what your horizon is. The horizon of your portfolio will not affect your allocation."

That was the prevailing wisdom, but, when you look at long-term stock returns, as I did, you observe the mean-reversion property of these equity returns. They are not random walks. When you have a mean-reverting series, its long-term volatility is much lower, relative to a random walk. Therefore, you cannot use one-year standard deviations. I pointed this out in the first edition of my book. This is why I emphasized why longer-term investing does involve a much higher allocation to equities. Notably, other researchers were beginning to get similar results even before *Stocks for the Long Run*.

EVEN THOUGH THE MIX BETWEEN THE GROWTH OF HUMAN WORKERS AND ROBOTS OR TECHNOLOGICAL CHANGE MIGHT SHIFT, EITHER DEVELOPMENT PRODUCES GDP AND EQUITY GROWTH. BOTH ENHANCE EQUITY RETURNS AND TECHNOLOGICAL OPPORTUNITIES.

This principle has been repeatedly confirmed in all sorts of different market regimes. Things certainly have changed. We've had longer business cycles and longer expansions. COVID, which is a totally black swan event, put an end to the expansion after the financial crisis.

Another surprise is the continued pre-eminence of the United States in equity returns. Twenty to thirty years ago, U.S. equities represented one-third of the world's total world equity. I expected this fraction to continue to decline as China, India, and other countries came into the fore. In fact, the opposite happened due to the rise of U.S. technology stocks, such as the Magnificent Seven [MAG 7].⁴ In fact, the proportion of U.S. equities has increased worldwide to more than 50 percent now.

What produces economic growth? The answer is population growth and technology. On the population side, we are experiencing a slowdown. Birth rates have shrunk around the world. In the United States, we have a sharp slowdown in immigration, which is a drag on our population growth.

However, with AI [artificial intelligence], we have a possibility of a speed-up in productivity growth that could offset declining birth rates. Who knows? A robot might be able to do the work of a human, which you could count as a form of population growth. I'm still optimistic about GDP [gross domestic product] growing over time. Even though the mix between the growth of human workers and robots or technological change might shift, either development produces GDP and equity growth. Both enhance equity returns and technological opportunities.

GEOFFREY GERBER: How will these emerging technologies such as AI and cybersecurity tools influence macroeconomic trends and market productivity? How should investors think about adjusting their portfolios going forward?

JEREMY SIEGEL: I remain bullish on equities in the long run. I do think real returns on equities going forward may not be as robust as the 6.5-7-percent after-inflation return I determined from my 220-year dataset, covering 1802 to the present. If you take the past thirty or sixty years, or even just look at the Cowles Foundation period, long-term returns are almost always 6.5-7 percent. I think in the future we'll probably be closer to a 5-5.5 percent after-inflation rate of return. That's still good because the real return on bonds is much lower. So, the equity

premium, which is the excess return of stocks over bonds, is not going to change that much.

EDWARD BAKER: Given your thoughts about continuing economic growth but slowing population growth, does that combination translate into rising GDP growth per capita?

JEREMY SIEGEL: Yes, absolutely. That's the standard-of-living growth. More population produces GDP growth but not per capita growth. AI is more related to productivity. If we take the post-World War II trend—and we have quarterly productivity numbers going back to 1947—there has been a slight decline of productivity growth over time. This surprises a lot of people.

We had a lot of productivity growth, particularly in manufacturing, in the sixties and early seventies, etc. Will AI be able to give us a boost again? There is a lot of evidence that it might. The internet gave us a boost, but it was short-lived and we went back to the normal productivity growth. AI, I think, promises to be bigger and yield more durable productivity growth. If this happens, the standard of living and real wages will rise.

MARK ANSON: You made a comment earlier about the pre-eminence of the U.S. equity market that we all see. It's been an amazing run. At the same time, we've also seen many economic cycles, up, down, all around. In the U.S. equity market right now, we observe higher multiples being applied to cash flows, something that continues to create this U.S. exceptionalism. We call it U.S. exceptionalism because we don't have any economic theory to back it up. Have you ever seen anything like this before?

JEREMY SIEGEL: In the past fifteen years, we have never seen a cycle of growth stocks outperform value stocks for as long and by as much in the 100-year history of the CRSP [Center for Research in Security Prices] data series. People often ask me, "Jeremy, when is this going to end?" I say, "I have no idea and I don't think anyone else knows either." We can talk about the reasons for what you call U.S. exceptionalism.

MARK ANSON: What economic theory can possibly support this U.S. exceptionalism?

JEREMY SIEGEL: Let me relate several things that are going on here in the United States. I don't think there is any country in the world for which out-of-the-box thinking is more acceptable than in the United States. We revel in the creative destruction of the Schumpeterian model.⁵ There are forces in other countries, some being societal, where, if there is a big, prominent company that employs 80,000 people, you don't mess with it. You don't have an upstart that can destroy it.

We are a country that values mavericks like Tesla busting into the auto industry or an upstart taking on IBM. Recall IBM dominated 80 percent of the computers back in the sixties and seventies. We lionize monopoly-busters and innovators in a way no other society does.

This attitude is something that's in the blood of Americans. We question things. You're not demeaned for questioning assumptions.

I think that's why Bezos can come in and make Amazon into a powerhouse and Walmart can enter a local market and destroy smaller businesses. We could criticize entrepreneurs that lay waste to other businesses, but it does make consumers better off. We accept this competition more than most other countries. I think that's key to American exceptionalism. It's why so many people from foreign countries come to the United States to get educated, develop their ideas, and seek financing here. But many then go back to their own countries and implement them.

MARKANSON: In the asset management industry, I call that thinking outside the benchmark.

EDWARD BAKER: I read your 2003 paper on bubbles. I am amused by your approach. You take a long-term and ex-post view to determine whether something is a bubble or not. Because of that, and because of the strong market we've had, you've identified virtually no bubbles at all. However, you did think perhaps we had a bubble in 1999 and 2000. What are your current thoughts about bubbles? Might you use the word bubble for the current environment?

JEREMY SIEGEL: These are good questions. We economists can't explain the equity risk premium by standard models. We can't explain why it's so high. This is a problem, especially when I found how long stocks give a 3-3.5-percent premium over bonds. I'm not the first person to address this topic in the popular or academic literature. Others earlier speculated that, in the long run, the purchasing power of stocks is more stable than that of bonds. In the short run, people think stocks are riskier and therefore need an extra premium. If they hold stocks for a sufficiently long period, they don't have that degree of volatility. This means, from a long-term standpoint, stocks are chronically undervalued.

When we look at historical prices over the past century and a half, we see the big spike of 1929. People say, "That was a bubble then." I flipped things around, showing that 1929 was at a valuation that made stocks' long-term stock return more consistent with what people are getting with bonds. When volatility hits, people turn back to their short-run thinking. Behavioral finance introduces loss aversion and the tendency of investors to disproportionately fear a loss.

Every so often, people adjust their risk-return expectations and the equity premium falls to levels that are more consistent with what we economists have found. Repeating, ever since Mehra and Prescott [1985], we haven't been able to explain why the equity premium is so high.

But there was a true bubble in 1999. I wrote about it in an op-ed piece that appeared in the *Wall Street Journal*. My op-ed was fortuitously timed because it was published at the beginning of March 2000 when the bubble broke. It was titled "Big-Cap Tech Stocks Are a Sucker's Bet." I pointed out why I thought the MAG 7 at that time were way overvalued. You can go down the list of companies such as AOL and EMC and note many don't

exist today. Some do. Cisco Systems traded at \$50.30 per share in March 2000. It traded at roughly the same price, \$48.90, in August 2024. It's now trading at \$79.52.

The word "bubble" is overused. Anytime a stock is even 5 or 10 percent higher than what people think it should be worth, many say it's in a bubble. A bubble should be reserved for something that is way outside normal boundaries. I remember Fischer Black, when he gave his presidential address to the American Finance Association, being asked: "You talk about efficient markets. When is a price efficient?" He said: "Oh, when it's either less than 100 percent above or more than 50 percent below its fundamental value."⁶ He answered this question referring to efficiency. Bubbles should be reserved for something that is way out of line. I do not think the MAG 7 prices today are way out of line.

Does this mean I think the MAG 7 are fairly priced? Can the market be 20 or 30 percent overvalued? Absolutely, it could be. These stocks might also be 20 or 30 percent undervalued. In either case we don't have a bubble. When you look ahead, and I'm excluding Tesla because Tesla is unique, with the other MAG 7 you have forward PEs [price-to-earnings ratios] in the low 30s. These are not unreasonable given their growth even though they are massive companies. We had forward PE ratios in 2000 of internet stocks like Cisco that were 100 to 300 times earnings, much higher than what we see today.

Could it turn out these stocks today could go as high as the internet stocks did in 1999 and 2000? Of course, that's possible. Are we there yet? No. Are we headed there yet? No one knows.

Some say: "Oh, yeah, we're in the early stage. It's like 1997. We have two more years of huge gains, then it's all going to burst." If the MAG 7 go up much higher, yes, it could burst, but we may not see such an escalation. It's not there now. I'm not saying go buy these stocks. I'm not saying they're not overvalued now, but they are in a range I think can be justified by economic analysis.

GEOFFREY GERBER: What role do you see policy decisions under the current administration playing in predicting the market outlook compared to previous administrations?

JEREMY SIEGEL: I'm on record as being against the tariffs. I think tariffs reflect a terrible policy. I'm all for trying to negotiate deals where we open markets, but the way things have been implemented and the size of the tariffs has been haphazard and detrimental.

There are other Trump policies that are positive, such as the pro-merger, anti-regulation stance. I think there was far too much of an anti-merger stance under the previous administration. I like the new corporate tax bill. I like expensing capital. That's a positive. Clearly, I like less regulation in the areas where there has been too much. That's a positive. I think that's the reason why the stock market is basically at all-time highs. It isn't that every policy under the Trump administration is great and working, it's just that the positive factors at this point outweigh the negative factors.

We are the only OECD [Organisation for Economic Co-operation and Development] country in the world that does not have a VAT [value-added tax] on tariffs. We rely on income tax proceeds more than any other country in the world. Tariffs could be seen as a small part of a VAT system, but they have been applied haphazardly. We should be taxing certain types of consumption and not relying so much on the income tax.

To recap, the positives of the current administration include lower regulation, the tax bill, and moving away from the staunch anti-merger policy of the previous administration. These are factors that outweigh the negativity of the tariffs and have rationally boosted the stock market over the past nine months.

ARUN MURALIDHAR: Colleges and universities are under financial pressure right now with endowments being largely illiquid because of allocations to alternatives. Their government grants are being either cut off or offered with unattractive strings attached. Revenues are down due to lower foreign student enrollments. What financial engineering strategy would you advise the president, treasurer, or chief investment officer of a college or university endowment to implement to improve the financial stress they are experiencing?

JEREMY SIEGEL: There are a lot of things packed into what you asked. When you look at college and university endowments, they are big. Many of them are in the tens of billions of dollars. Twenty years ago, we couldn't have dreamed about how much money they have. Your statement about being illiquid is apt because some endowments have been forced to issue bonds. However, there is a rationale for their illiquidity. If you are a real long-term holder, you should get a higher rate of return on illiquidity. That's the theory since you cannot sell illiquid assets easily in tough times. I still think the major universities have enough dollars and funding to keep necessary research going. And a lot of innovation in the private sector doesn't depend on the government.

Consider SpaceX. Thirty years ago, no one thought any space innovation would be implemented outside of NASA or the federal government. Now we see it's done in the private sector. A lot of things can be done in the profit-making private sector. We talk about biotech as replacing some NIH [National Institutes of Health] grants. These are things we should be aware of. I do not believe that there will be a significant reduction in funds going into research that would have an adverse long-term effect on economic growth.

Don't forget, the U.S. presidency is limited. A different president could reverse policies and beef up the amount of grants to institutions of higher education. When we look at innovation, we see a lot of that innovation has been in the private sector and not from the universities. Moderna is a case in point with its production of the mRNA vaccine. Certainly, university research generates good outcomes.

We are the wealthiest country in the world. We are also the most generous country in the world in terms of our charitable giving. We donate vast amounts to universities. Funding of programs carried out by higher

education could come from either charitable or profit-seeking sources. I am not worried about the Trump stance on universities.

EDWARD BAKER: The venture capital area has been an important contributor to what Mark calls American exceptionalism. Other countries don't seem to be able to find people who are willing to risk capital in the same way. What are your thoughts about venture capitalists?

JEREMY SIEGEL: I think what you say is mostly true, but the role of the venture capitalist is related to ideas I discussed earlier. Other countries are unwilling to risk capital if they fear the government is going to go after them when or if they try to break up a company with ties to the government.

The opportunity for venture capitalists to prosper is intimately linked to the notion that, if you do fund an innovation that could put other companies out of business, it is likely your innovation is going to stand. In other countries many say: "This established company is important. This company accounts for 20,000 to 30,000 jobs. You, the venture capitalist, can't go through with your plans." I think that's one reason why there are not a lot of venture capital firms elsewhere.

Venture capital is critical and numerous firms have grown due to their support. As noted before, one sees a tolerance for busters of established firms in the United States. Innovation busters of established firms do not occur in other parts of the world to the degree they exist in the United States.

INNA OKOUNKOVA: Siegel's paradox, named after you, shows that expected gains depend on the currency used for measurement, allowing both sides of a currency exchange to expect gains. How should international investors incorporate this concept when constructing their respective portfolios, particularly when they decide whether to hedge their currency exposures and when they are evaluating the expected returns on foreign assets?

JEREMY SIEGEL: Regarding the Siegel paradox, let me tell you a story about my interaction with Professor Lars Hansen. He received a Nobel Prize in Economic Sciences in 2013, along with Eugene Fama and Bob Shiller, for research about the efficiency of financial markets. He introduced me at a conference by saying: "We have a speaker here. There's something like sixty or seventy Nobel Prize winners in Economics, but only about twelve people that have an economic paradox named after them." When I got up to the microphone, I said, "Lars, thank you so much but I'll trade my paradox for your Nobel Prize!"

Regarding the paradox: It was a minor observation—just one page—of my first published article. I was looking at the Bretton Woods Agreement and asking whether we can use forward exchange rates to determine what expected future spot rates were going to be. I was examining whether they were biased or not, and then I noted the fact that one over the expected value of a random variable is not equal to the expectation of one over a random variable. That's a very famous inequality

(Jensen's inequality)—the expectation of a reciprocal is not the reciprocal of the expectation: $E[1/X] \neq 1/E[X]$. So, I determined that dollar-based traders and, say, euro-based traders cannot have the same unbiased expectations of the exchange rate. Everyone said, oh my God, how can that be? And the profession named it the Siegel paradox.

I never solved the paradox because it wasn't where my research led. I thought it was more a second-order issue. But others thought it was fascinating. Forty years later, I still have economists writing: "Dr. Siegel, I think I solved the Siegel paradox." Mark Kritzman included the Siegel paradox in his book, *Puzzles of Finance: Six Practical Problems and Their Remarkable Solutions*, published in 2000. I think he solved it. I won't go into his solution. I said: "Good for you, Mark. I never worked on it!"

The important message is that futures prices are not unbiased estimates of expected future spot prices. We all look at Fed funds futures. We hear the business reporters saying, "Oh, they are predicting two and a half cuts." I say: "These futures are not unbiased. They're all biased because of risk premiums."

Regarding Fed funds, we even know the direction of the risk premiums. If there is going to be a recession, the Fed is more likely to lower rates and risk assets are likely to go down. Therefore, Fed funds futures are a negative beta asset. Their rates will underestimate what the expected future spot rate is going to be. However, it seems like the financial media struggles with grasping this notion. I even see notes from such prestigious groups as Goldman Sachs and J. P. Morgan that suggest to me that some analysts may be missing this point.

EDWARD BAKER: Cryptocurrency is an exciting area that came on the scene in a blitz in 2009. There doesn't seem to be a standard valuation model that works. Alternative valuation models have been put forth such as Robert Metcalfe's rule for valuing networks.⁷ He explains that the value of a network increases exponentially as the number of connected users grows. Considering the spectacular run in bitcoin prices and the absence of an acceptable valuation model, would you characterize the crypto market as being in a bubble?

JEREMY SIEGEL: One reason why crypto has gained prominence is the fact there have been so few innovations in monetary transfers over the past fifty years. Transfers cost too much and the United States has one of the worst systems in the world. Credit card companies charge merchants 3 percent and we get 2 percent back on our cards. It's costing consumers hundreds of billions of dollars a year. With international transfers, fees are worse and everyone takes their bite. Some firms are now beginning to offer cut-rate transfers.

We have the ability, and have had for more than ten years, to do electronic transfers at about 5 basis points. That's the way it should be. We should be able to move dollars instantaneously around the world for much less than the cost of bitcoin transfers. I believe Visa, MasterCard, and American Express are monopolies. Everyone is feeding at the

trough. The banks and the credit card companies both make billions of dollars.

They don't allow these large fees in Europe and elsewhere. The U.S. banks and the credit card companies wanted to put 1-1.5-percent charges on debit cards. The U.S. Congress had to step in to limit this. Lawmakers said it's ridiculous to add these surcharges because the money is there and there is no fraud. They forced fees downward. I don't know what it is now, maybe 37 basis points. No one, including the banks, has an incentive to innovate in this area.

I think it's a failure of the Federal Reserve. The Fed should have told the banking system to develop a more efficient electronic transfer system between merchants and individuals, but they didn't because they were getting so many billions of dollars from the credit card companies. The Fed should have pushed it. As a result of the high fees, we saw the ushering in of the stablecoin market. With the recent rise in gold, there are people who want to return to gold as our currency and use blockchain technology for international transfers.

Besides the banking system, there is the issue of overregulation. Three credit card companies account for roughly 90 percent of the transfer business. They sit on fat profits with little incentive for them to change. Practically speaking, money transfers must be completed between 9 a.m. and 3 p.m. on weekdays. Given these conditions, some people said, "Well, we can have a digital coin that has none of these restrictions whatsoever."

The rise of crypto is related to these issues. I don't think bitcoin would be priced the way it is today had the United States been in the forefront of developing an extremely efficient electronic-transfer system for both global and domestic use. This is my opinion.

Bitcoin and Ethereum, supposedly the basis of stablecoin, would not be so popular if we had an efficient domestic and international transfer system. We need a system of monetary transfers for the twenty-first century.

EDWARD BAKER: I agree with your views. You mentioned gold. What do you think about gold as a holding in long-term investor portfolios? Does it have a role or not?

JEREMY SIEGEL: Well, it's interesting. Gold is having a great run recently. Gold's return after being freed in price in the 1970s, when Nixon went off the international gold standard, has performed almost as well as stocks. But the return over my 223-year period, from 1802 to the present, has only been about 1 percent a year over inflation, while stocks are returning 6-7 percent. Gold hasn't even done as well as bonds over the long haul, because of its nonproductive nature. Gold is an inflation hedge and can hedge against geopolitical risks. It can hedge against other risks, such as market panics. It can be used to diversify a portfolio. But it doesn't have a great long-term return.

Bitcoin does not have these hedge properties. We just had a recent sell-off when Trump threatened big new tariffs on China. Bitcoin sold

off, but gold did not. Bitcoin was not a good short-term diversifier of risk. It hasn't been because it's too tied to risk markets. The same participants who invest in bitcoin invest in Nasdaq stocks and other risk assets. If their wealth goes down because risk is off, they sell their bitcoin to finance whatever positions they have. Gold has not suffered that way. If you would like short-term diversification, gold is much better than bitcoin.

I'd rather have property and equity than gold or bitcoin if I fear inflation in the future. These are productive assets versus gold, which is non-productive. Gold will keep up with inflation, but little more than that.

GEOFFREY GERBER: Jeremy, you mentioned before that you don't like the way the media uses the term "bubbles" all the time. How should investors think about volatility even if the media focuses on sound bites?

JEREMY SIEGEL: We love to talk about the short-run drama in the market. Anyone who is motivated to trade because of this drama is generally going to be a loser. We know that. If the market is off 5 or 10 percent, the media hypes this as doom and gloom and says everything is bad and investors should sell. Alternatively, the media may amplify the concept of FOMO [fear of missing out] and suggest investors get in when the market's good.

These messages cannot be part of your long-term strategy. I always say 75 to 80 percent of your long-term portfolio should be in some broad stock index, tilted if you wish, toward value or growth. But it should reflect your decisions, independent of good and bad headlines. You can speculate, if you wish, with the remaining 20 percent. I'll make a bet over twenty years that your 20 percent in speculative assets won't do as well as the other 80 percent that is indexed.

GEOFFREY GERBER: Right. I always like to say: "Think about Rip Van Winkle every now and then. Go to sleep and don't look at your investments." That works well for the 80 percent of your long-term portfolio. But for that 20 percent in speculative assets, you mentioned gold. Are there other ways that investors should look to invest their speculative assets?

JEREMY SIEGEL: If you want to allocate 5 percent in gold or 5 percent in bitcoin, even as part of your long-term strategy, okay. However, I think it would ultimately be a drag on your portfolio. I don't see either gold or bitcoin as ultimately productive. Property has net rental income. Equity has returns from the productive use of capital. Gold is basically sterile.

GEOFFREY GERBER: But it doesn't pay income.

JEREMY SIEGEL: It pays no income, zero. Yes, there is an opportunity cost in terms of income. It is an inflation hedge. If you think the real rate is zero, gold will match the return on short-term U.S. Treasury bills, assuming the short-term bill rates are the same as the inflation rate. That's all.

PROPERTY HAS NET RENTAL INCOME. EQUITY HAS RETURNS FROM THE PRODUCTIVE USE OF CAPITAL. GOLD IS BASICALLY STERILE.

ARUN MURALIDHAR: I'd like to expand a little bit on the income side again. In practice, it's completely different from the assumptions one makes in academia. For example, academics assume investors maximize the expected utility of wealth whereas goals-based investing is all about ensuring cash flows and income for goals, as Bob Merton has noted in the context of retirement.⁸ How do you address these competing views?

JEREMY SIEGEL: Bob was in my PhD class at MIT. I have huge respect for him. There are certain equivalences if you think about cash flows and ensuring those cash flows materialize over your lifetime. A lot of people have more wealth than needed for those cash flows. Additionally, some investors want to finance their children's activities or bequests, i.e., a legacy of some kind. Bob has worked on these issues. He is working to help others generate the cash flows they expect they will need.

How do you do that? There are techniques to ensure these cash flows. Investors need to talk about what's important to them. An advisor must sit down with the investor and ask about what that investor owns, what are that investor's minimum income needs, what does that investor need for their children, and how long should a charitable trust (if one exists) last? Then the advisor can help the investor construct a portfolio that is richer and probably better suited to their goals than just investing in a plain vanilla indexed portfolio.

There is a lot to the goal-based approach. Does it differ a lot from what we've thought of as the standard portfolio selection? I think the longer your horizon, the less of a difference there is between these approaches. Nevertheless, I think Bob's work is extremely important.

EDWARD BAKER: If you are concerned with inflation, how do you protect yourself against inflation risk?

JEREMY SIEGEL: In the bond world I like TIPS [Treasury Inflation-Protected Securities]. Of course, the tax features are bad so you should keep them in your tax-exempt accounts. I prefer TIPS over the standard bonds because I think inflation is a threat. As we saw during the pandemic months, the government or the Fed can just start increasing the money supply, which is inflationary.

But note, the current yield on the ten-year TIPS is 1.7 percent. A 20 PE stock has a 5-percent real return. This is almost 5 percentage points higher if you think of the stock market as forward-looking. If you take out the MAG 7, which have spectacular earnings growth, you have a PE of around 20 for the rest of the market. A 20 PE implies a 5-percent real return, while TIPS are returning 1.7 percent. This is a big return gap. Nevertheless, TIPS are inflation-protected and give you income. I hold some and I certainly would not begrudge anyone who does.

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Realize, however, if you have a long horizon, that 3.5-percentage-point difference between TIPS and equities is going to compound over time.

EDWARD BAKER: You make a good point, one that relates to the earlier question about cash flows for endowment funds. Any endowment fund must support the programs offered by its institution. They have a spending policy. They don't typically own a lot of cash-yielding assets. They own stocks and venture capital interests. They invest for the long term and generate the income they need by selling things. What are your views about investments for endowments?

JEREMY SIEGEL: If you have a market, you can sell. And don't forget, U.S. stocks have a low dividend yield. One of the reasons we have such a low dividend yield relates to harsh tax rules on dividends. I think we have one of the most punitive tax laws on dividends in the world. I remember I was on a President [George W.] Bush tax panel and I advocated that, if you reinvested your dividends back into the stock (or market), you should not be taxed until you finally sold the stock. That would put dividends on the same basis as capital gains. There was a lot of support for the recommendation, but this reform never went through. It has not been part of the Trump or the Republican program over the past few years. Basically, firms buy back their shares to generate capital gains that are taxed lightly and deferred.

If you want income, you must sell your stocks. Suppose an endowment's goal is 5-percent income, but the stock has only a 1-percent dividend yield. I am going to get 1 percent and then I'm going to sell 4 percent of the stock each year, and the stock is appreciating because the firm is buying back their shares. On average buybacks will produce 4 percent per year appreciation. In other words, I'm taking that appreciation and selling it instead of receiving it all in dividends. It's harder for people to do this, but our tax laws influence firms to lower dividends.

INNA OKOUNKOVA: You advocated for international equity diversification; however, investors in some foreign countries only have access to domestic equity markets. Do you believe that, for non-U.S. investors, your long-term equity thesis remains valid, or would you suggest a different investment strategy?

JEREMY SIEGEL: People say foreign stocks haven't done well. If you go outside the United States, you are in a value world. I just did a quick little review. The Russell 1000 value total return over the past five years has been the same as Europe. It's just that once you leave the United States, there are very few growth firms. On the value side, Europe or Asia haven't done much worse than our value.

The underperformance of international stocks over the past ten to fifteen years is the flip side of the underperformance of value stocks.

Once you understand this, it gives you a better perspective. The question is, "When will non-U.S. markets start doing better?" It is almost the same question as: "When will value stocks start doing better?" Who knows whether this grand unprecedented growth-stock cycle that we have never seen before will end? We just don't know.

INNA OKOUNKOVA: But at least you believe it will end.

JEREMY SIEGEL: I do think it will end. I hope I'm alive when it ends, but I'm not sure.

INNA OKOUNKOVA: So, the value premium will prevail?

JEREMY SIEGEL: Yes, the value premium will finally prevail.

INNA OKOUNKOVA: Finally, what can we do to educate investors more broadly? How can we emphasize the importance of discipline and long-term focus? How do we help investors overcome psychological barriers that we observe in most investors? How do we stop them from short-term trading and help them to focus on longer-term goals? Do you have any suggestions?

JEREMY SIEGEL: It is really a matter of education and understanding. I like to look at my long-term chart and show investors that all those little wiggles in the stock market total return are the great bull and bear markets over time. These wiggles represent market volatility, an event that scares most investors. Yet, when you look at a long period, you can see that the ups and downs were not so important in the long run.

We need to educate investors about volatility—what it means and how to manage it. When I was younger, I did not think I needed the help of a professional advisor. I would simply invest in an index and leave my investment alone. I've concluded that most investors need someone to hold their hands when times are tough and to emphasize what historical performance implies about future returns. The advisor has the data to support a meaningful discussion.

The worst time to sell is at the bottom of a bear market. We've always bounced back and you should always have some part of your portfolio that is in safe bonds. All the scary headlines do is attract eyeballs. Eyeballs lure advertisers. Advertisers pay money to the broadcasters. You need someone you can trust to provide you with the necessary educational materials, explain the investing process, offer wisdom, stay calm, and give the investor an objective perspective.

INNA OKOUNKOVA: So, there is a role for financial advisors to play.

JEREMY SIEGEL: Absolutely. 🟡

ENDNOTES

1. The Cowles Commission for Research in Economics was founded in 1932 by economist Alfred Cowles at Colorado Springs. Among its work, in 1938 it published a monument of financial research: *Common-Stock Indexes, 1871-1937*, and a second edition in 1939. The Cowles Foundation continues the work of the Cowles Commission, which moved to Chicago in 1939 and was affiliated with the University of Chicago until 1955. In 1955 the professional research staff of the Commission accepted appointments at Yale and, along with other members of the Yale Department of Economics, formed the research staff of the newly established Cowles Foundation. <https://cowles.yale.edu/about-cowles>.
2. The Bank War, in U.S. history, refers to the struggle between President Andrew Jackson and Nicholas Biddle, president of the Bank of the United States, over the continued existence of the only national banking institution in the nation during the second quarter of the nineteenth century. The first Bank of the United States, chartered in 1791 over the objections of Thomas Jefferson, ceased in 1811 when Jeffersonian Republicans refused to pass a new federal charter. In 1816 the second Bank of the United States was created, with a twenty-year federal charter. <https://www.britannica.com/event/Bank-War>.
3. See <https://www.stlouisfed.org/on-the-economy/2023/may/the-rise-and-fall-of-m2>.
4. The "Magnificent Seven" refers to a group of seven high-performing, influential stocks in the technology sector. The name derives from a 1960 Western film, *The Magnificent Seven*, which depicts a powerful group of seven gunmen. A Bank of America analyst coined the phrase in 2023 when commenting on the seven companies commonly recognized for market dominance, technological impact, and changes to consumer behavior and economic trends: Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA, and Tesla. However, as of 2025, Broadcom jumped into the ranking with a market cap of \$1.4 trillion, while Tesla, with a market cap of \$1.08 trillion, has dropped out. <https://www.investopedia.com/magnificent-seven-stocks-8402262>.
5. Joseph Schumpeter was an economist known for his theories on entrepreneurship and creative destruction that describe how innovation drives economic growth by replacing outdated practices and technologies. <https://www.investopedia.com/terms/j/joseph-schumpeter.asp>.
6. In Black (1986), he said: "We might define an efficient market as one in which price is within a factor of 2 of value, i.e., the price is more than half of value and less than twice value."
7. In 1983, Robert Metcalfe developed a simple mathematical formula for valuing decentralized networks, such as the blockchain. Metcalfe's law states that the value of the network increases with the square of the number of participants, perhaps subject to a time decay. See, for example, M. Hossp, "Metcalfe's Law in Crypto: How User Growth Drives Value" (November 20, 2024), <https://www.morpher.com/blog/metcalfes-law>.
8. Robert C. Merton is the School of Management Distinguished Professor of Finance at MIT Sloan School of Management, and the John and Natty McArthur University Professor Emeritus at Harvard University. He received the Alfred Nobel Memorial Prize in Economic Sciences in 1997 for a new method to determine the value of derivatives.

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