

'Efficient markets is a hypothesis. It's not reality'

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Snagging a lunch date with the financial economist Eugene Fama proved almost as hard as beating the stock market. My first attempt in 2021 foundered because of long-lasting Covid-19 lockdowns. A suggestion that we instead do it by video was forcefully shot down. "On Zoom, watching people eat and talk comes across as gross," Fama emails. It's hard to disagree.

Another try is scuppered by the University of Chicago professor spending winters on the West Coast. We finally find a time to eat in Chicago, but when I ask for some possible venues we hit another snag. In his terse email style Fama informs me that "I never eat lunch out". As a compromise, I turn up at his office at the University of Chicago with two brown paper bags containing a dubious selection of sandwiches, wraps, salads, sushi and soft drinks acquired from a downstairs bodega.

Thankfully, the 85-year old Fama is no fussy eater, and happily grabs a chicken Caesar wrap. Feeling brave, I take the 12pack of indeterminate sushi. It's an underwhelming meal, but very efficient, which feels appropriate given what I want to talk about.

Fama is arguably the world's most famous and influential finance professor thanks to his revolutionary efficient market hypothesis — that stock market prices at any time incorporate all available information, thanks to the cumulative and unending efforts of millions of investors constantly trying to outfox it. The paradox is that as a result of their efforts, the stock market is in practice almost impossible to beat.

In other words, perhaps you are excited by the potential of some hot new electric vehicle stock or reckon that an old video-games retailer is due for a turnaround, and maybe you're right. After all, all stock prices are wrong in hindsight. But at any given moment in time, the prices of those stocks are roughly fair, given all the known risks and returns are already baked in.

EMH is the closest finance has to a "theory of everything", and won Fama the Nobel Prize for Economics in 2013. But it remains as controversial today as it did when Fama first proposed it half a century ago. The mania for all things artificial intelligence is the latest challenge to Fama's theories, transforming the world's stock market into an inverted pyramid resting precariously on a narrow clutch of companies worth trillions of dollars. These can add and shed hundreds of billions of dollars' worth of stock market value on virtually no news. As a result, even some Fama acolytes are losing their faith.

“I think [markets] are probably less efficient than I thought 25 years ago,” Clifford Asness, a hedge fund manager and a former research assistant to Fama, admitted to the FT in an interview last year. “And they've probably gotten less efficient over my career.”

Fama himself shrugs off the apparent apostasy of his former student. “He's trying to take advantage of different risks, and maybe he interprets that as inefficiency,” the finance professor says. “But remember, he's now on the other side of the fence. He's selling products, right?”

If Voltaire hadn't been so tedious, Fama might have simply ended up an uncommonly driven high-school teacher in New England. Born in 1939 to second-generation Sicilian-Americans, Fama grew up in the working-class city of Malden, Massachusetts. Despite a diminutive frame he was a bit of a jock at his all-boys Catholic high school — throwing himself into baseball, basketball, football and track — but he also did well academically.

“My parents weren't interested in sports at all. They never went to my games. But in hindsight I think that was good. I wasn't encouraged to be serious about it,” Fama says, while struggling with the wrap's plastic packaging. “My mother said ‘you can do all the sports you want, as long as you stay on the dean's list’.”

It worked. Fama became the first in the family to attend university, studying Romance languages at Tufts. The plan was to become a teacher and coach one of the school sports teams on the side. Sports remains a big part of Fama's life, even though age has curtailed what was apparently a ferocious tennis game and reduced him to only playing golf a few times a week, when his back allows it.

However, by his third year Fama was ploughing his way through French philosophy in the original language and hating it. On a whim Fama took a course in economics, and fell in love. “I was pretty good at it,” he recalls with a chuckle. So he stuck at it.

Sunlight is streaming through the large windows of Fama's South Woodlawn Avenue corner office, bathing the finance professor, but I'm starting to agree with him that eating and talking can be a bit messy. To my immense relief, my bodega sushi is edible and tastes surprisingly fresh, even though the wasabi looks older than my lunch companion.

It was at Tufts that the kernel of the efficient market hypothesis was born. One of Fama's professors ran a stock market forecasting service on the side, and asked the young Fama to test out various techniques he cooked up. Unfortunately, even when the historical data indicated that they might work, they fizzled when they were actually implemented in live trading.

“It always worked in sample, and never out of sample,” Fama recalls. “I think that was my

first lesson in efficient markets.”

Inspired, the precocious student then went to the University of Chicago's graduate school, a hotbed of financial academia in the 1960s. Investors and economists had long commented on the seemingly unpredictable movement of stocks as traders continually reacted to news, but Fama was the one who pulled the disparate strands into a cohesive hypothesis for how markets functioned in the paper “Random Walks in Stock Market Prices” in 1965, where the term “efficient market” first appeared. “The ideas were all percolating, but no one had put them together,” Fama says.

You can think of EMH as the financial equivalent of Sir Francis Galton's 1907 observations drawn from an ox weight guessing competition at a village fair. While none of the 800 or so villagers got the right answer, when you averaged them they were spot on — a phenomenon that gave rise to the concept of the “wisdom of crowds”.

It swiftly became dogma in financial academia, laying the intellectual groundwork for what is now the multitrillion-dollar passive investing industry, funds that do nothing but try to mimic a market as cheaply as possible. But EMH was immediately ridiculed by an outraged investment industry. “Random walks in the park with pleasant company are most enjoyable; in the stock market, however, they might lead down a perilous path,” one 1968 advertisement by Oppenheimer & Co argued. In other words, the idea that the stock market was efficient wasn't just wrong, it was dangerous.

Not that Fama cared. At Chicago, he was supervised by Merton Miller — one of the giants of American financial academia and a fellow Nobel laureate. Merton became Fama's own model for how to teach, he says between bites. “He was so patient with students. He walked them through the process but made them think they did everything themselves.” However, former students say that Fama was a notably more energetic teacher than his mentor. He would often end up drenched in sweat in the classroom, flinging up a window for fresh air even in the middle of winter. Nowadays, Fama only teaches a research class to graduate students at Chicago.

Many have gone on to enjoy big careers themselves. Early ones include superstars of financial academia such as Myron Scholes, Fischer Black, Michael Jensen and Richard Roll, as well as practitioners such as AQR's Asness, and Rex Sinquefeld and David Booth, the founders of Dimensional Fund Advisors, a \$740bn investment group whose strategies are inspired by Fama's work. Chicago's business school is now named Booth after a \$300mn donation from Fama's former student, and Fama sits on DFA's board.

Miller passed away in 2000 but remains very much present in Fama's life: his faculty painting hangs next to Fama's in the university's corridors. And in an unusually clever twist for university hallway decor, a painting of Fama's colleague and fellow Nobel laureate

Richard Thaler — a leading behavioural economist — hangs on the opposite wall.

Many consider behavioural economics to be the antithesis to the efficient market hypothesis. One side insists that the wisdom of crowds mean that markets function efficiently, while the other argues that the madness of people routinely causes markets to inflate bubbles that collapse into pandemonium.

Fama insists it is more nuanced than that. “We agree on the empirical data, but we disagree on the interpretation,” he says. “When people ask me what I think about behavioural economics, I just say that all of economics is a behavioural science. The difference is whether you think the behaviour is irrational or rational.” Thaler has himself said that he is in “virtually complete agreement” with Fama on the implications of EMH — that beating the market is hard — even if he disagrees with the starting premise that stock markets are efficient.

Fama is surprisingly phlegmatic when it comes to defending his life's work, echoing the famous British statistician George Box's observation that all models are wrong, but some are useful. The efficient market hypothesis is just “a model”, Fama stresses. “It's got to be wrong to some extent.”

“The question is whether it is efficient for your purpose. And for almost every investor I know the answer to that is yes. They're not going to be able to beat the market so they might as well behave as if the prices are right,” he argues, his chicken wrap now efficiently devoured.

Decades of data around the world has borne this out. The latest data from S&P Global, a company that produces financial benchmarks, indicates that less than 10 per cent of American stockpickers and under 20 per cent of British ones have beaten the market during the past decade. The numbers are similar elsewhere in the world, and get worse the longer the timeframe. This is a major reason why trillions of dollars keep gushing out of traditional, actively managed funds and into cheap, passively managed ones.

Fama has famously acerbic views on the investment industry, once quipping “I'd compare stock pickers to astrologers, but I don't want to bad-mouth the astrologers”. But decades of sparring with students, rival economists and a horde of indignant investment professionals seem to have eroded Fama's spikiness. When I question what stock market phenomena such as Nvidia — whose value rocketed by more than \$2tn in the year to June, before dropping by almost \$1tn in July and then regaining over \$600bn — say about market efficiency, he remains untroubled.

“The world is betting that AI is going to rule the world and that Nvidia will have a near monopoly, but who really knows,” Fama says. “Efficient markets is a hypothesis. It's not

reality. I can live with things like that, for sure.”

After all, Fama's own PhD thesis detailed how stock markets are prone to “fat tails”: wild, statistically improbable movements. The professor points out how technology stocks also went on a rampage in the late 1990s before collapsing, but that the fundamental premise — that the internet would create huge, vastly profitable new companies — proved to be correct.

In other words, for every Pets.com there is an Amazon. Individual stocks might prove to be dumbly priced, but on average in the long run the cumulative efforts of millions of people trying to outsmart the market means that prices are more often fair than not.

“Most of the prices were too high [in the dotcom bubble], but some were too low as well,” Fama points out. “Some companies made up for all the mistakes that were made on the other ones.” Indeed, Amazon is now worth about a quarter of the Nasdaq's entire market capitalisation at its 2000 dotcom peak.

Some of the backlash against the efficient market hypothesis may simply be down to hang-ups around the word “efficient”, which Fama admits he can understand. “I just couldn't think of a better word. It's basically saying that prices are right.”

Somehow, I suspect the phrase “prices are right” would be just as triggering to a lot of people. But Fama has a simple rejoinder to whoever might point to the stock market insanity du jour and howl with mirth: “If prices are obviously wrong then you should be rich,” he says.

Fama is more willing to grouse about how little time students spend preparing for class — “kids today just do not work . . . What the hell are they doing with their time?” — and the current state of financial economics. The lack of exciting new breakthroughs saddens him.

“A lot of big paradigms came in the 1960s and '70s. But there's no new options pricing theory, capital asset pricing model or efficient market hypothesis,” he says. “People are now basically working on the details. But it's time for a big jump forward.”

The sandwiches and soft drinks are now dispensed with — although the back-up chicken salad understandably remains untouched — and the nearby Rockefeller Chapel's bells are ringing in the background. I have a flight to catch, and Fama seems keen to hit the golf course. But he will be back at work the next day, despite not actually drawing a salary from Chicago any more. The blackboard in his office is covered with dense scrawls of economic equations, indicating that Fama's students were recently in class, and the professor is still producing papers, the most recent a recondite work titled Production of U.S. Rm-Rf, SMB, and HML in the Fama-French Data Library (don't even ask).

I wonder why he doesn't simply retire, enjoy all the golf he could ever want, spend more time with his grandchildren and great-grandchildren, or travel the world with Sallyann, his wife of more than six decades. He has an efficient answer. "I do it because I like it," Fama says. He recalls how his mentor Miller's life changed completely after becoming a Nobel laureate in 1990. "He basically gave up academics and travelled the world until he died. That's fine, that's what he wanted to do. Someone told me you can turn your life into a victory lap, or you can go back to work," he says. "And that's the truth."