Ulrike Malmendier

On law versus economics, the long-term effects of inflation, and the remembrance of crises past

Over the course of her career, much of the research of University of California, Berkeley economist Ulrike Malmendier has been in the areas of behavioral economics and behavioral corporate finance — looking at the effects of various psychological biases, such as overconfidence, on the decisions of consumers, investors, and executives.

Malmendier's more recent work has taken a turn that has made her the Marcel Proust of economics — focusing, like the French novelist, on the subjective nature of human experience and its enduring influence. In this research, she has been analyzing "experience effects": how individuals living through financial crises and other significant economic events respond to these experiences in their future financial behavior. In her view, a major difference between *homo economicus* (the hypothetical person of classical economics who is perfectly rational and perfectly informed) and actual people is that, as she puts it, "The *homo economicus* is more of a robot who processes data rather than a living organism whose mind and body absorb these experiences."

In addition to faculty appointments at Berkeley's economics department and Haas School of Business, she is faculty director of Berkeley's new O'Donnell Center for Behavioral Economics, which she co-founded with her husband and Berkeley economics colleague Stefano DellaVigna.

A native of Germany, where she studied ancient Roman law before moving to economics, Malmendier has seen her research published in, among other journals, the *American Economic Review,* the *Quarterly Journal of Economics,* and the *Journal of Finance*. She has received numerous awards, including, in 2013, the American Finance Association's prestigious Fischer Black Prize, awarded biennially to a leading finance scholar under the age of 40 for significant contributions to the field. She is also a fellow of the Econometric Society and the American Academy of Arts and Sciences. The German federal government appointed her in 2022 to the five-member German Council of Economic Experts, sometimes called the Five Sages.

David A. Price interviewed Malmendier by phone in January.

IMAGE: COURTESY NOAH BERGER

EF: How did you become interested in economics?

Malmendier: There were a couple of motivations that played a role. One is that my father had experienced the after-effects of World War II in Germany, so he had a strong notion that you better go for a job where you could earn a safe living. I did pretty well in high school, yet my dad insisted that it would be better to first go to a bank and do one of these German-type apprenticeships. It was practical. I know how to evaluate you for a loan, open your account, and so on. And you study a little bit; I did a two-year degree in business economics. So I'm a publicly certified banker. It was very much a result of this scarring from the past, the idea that we never know what's going to happen.

When I actually started studying, I went to the University of Bonn. I was interested in both economics and law. I was initially more leaning toward law, specifically ancient Roman law; in fact, I ended up doing a whole Ph.D. in law. But since my bank experience, I had economics always in the back of my mind. In the Juridicum building in Bonn, where the law students are taught, the economics students are also taught. So I managed to also get into the economics program. Formally, it was actually not possible to enroll in both degree programs, but when somebody dropped out, I applied for their slot and got it.

What I experienced in the program was theory, mechanism design, the beauty of math, which kind of led me back into economics. The very mathematical, not very real-world-oriented way in which we were taught economics in Bonn just intellectually attracted me. I had some excellent teachers there. That's really the way I found my path into economics.

EF: That sounds like a big switch from law.

Malmendier: In the civil law systems like you have in Germany, and which go back to Roman law, it's not math, but it's pretty close. You really have to learn the whole big model and how to filter through the case at hand and come to the answer. It's quite stimulating intellectually in a way that seems very related to math. At 8 p.m. on Thursdays, we would meet in the Roman Law Institute, sit between the old books and then open up the *Corpus Iuris Civilis*, the big work of Roman law, and take a piece of the Latin text, translate it, and discuss the logic and how it flows. That was an exercise with an almost mathematical feel to it.

EF: Turning to your research, one of the things you've found is that people's likelihood of buying a home rather than renting is influenced by their experiences with inflation. Please explain.

Malmendier: I'll step back for the bigger picture here. In general, I have been very interested in the question of how our personal lifetime experiences tend to change us, tend to change the outlook we have of the world, the way we form beliefs. They might also influence our preferences, although my work is a bit more on the beliefs side.

I mentioned how my early life path was influenced by my dad experiencing World War II and how everything can get destroyed — the house gets destroyed, you lose all your possessions and savings, and maybe your country's currency isn't worth anything anymore. One way of looking at the effects of this is simply in terms of information: After such an experience, you have new data about what can happen. That's the traditional economic view. But I'd argue that there's an element beyond the intellectual. When it's your own life, you tend to put a lot of weight on what has happened to you. You're pushed toward overweighing outcomes that have happened to you.

I first worked on that in the context of the stock market, with a paper Stefan Nagel and I wrote on Depression babies in the U.S. We showed that people who experience big crashes of the stock market tend to shy away for years and decades from investing anything in the stock markets. We then turned to another experience, inflation.

Here, the example of Germany was our motivation. Within the EU, the Germans are somewhat notorious for being preoccupied with inflation being a terrible thing and distrusting the European Central Bank to handle it well. That's our reputation. But where does it come from? Many people think that it might have something to do with Germany going through the hyperinflation in the Weimar times and that experience affecting the German populace strongly — so strongly that the adverse reaction was even transmitted to the next generations.

With that big motivation in mind, we thought experience effects might also apply to inflation. Suppose I've lived through a period of high inflation, such as the Great Inflation in the U.S. of the late 1970s, early '80s. Even if I am an economist and work on monetary policy and inflation, I'm still going to be affected by that personal experience. If I'm asked to forecast inflation on the margin, I may overweigh what I saw happening; I may overweigh the probability that prices can spiral out of control.

If that's the case, it's going to influence my financial decision-making. I would want to protect myself against inflation. So how can I protect myself? I put my money into protected assets. In addition to gold and the stock market and so on, one way is to invest in real estate. And so one prediction is that people who are worried about their money being worth much less in the future might want, on the margin, to buy a home rather than rent.

Also, if I can finance this home purchase with a fixed-rate mortgage, so I'm borrowing at a fixed rate — but I think inflation will go up — I believe that it's going to be a good deal. I don't really like variable-rate mortgages at all in this case because I'm worried about the risk of nominal rates adjusting upward. So that's the link between inflation experience and making financial decisions that protect yourself against inflation.

EF: Many people are familiar with the idea that Depression-era youth were affected by that experience throughout their lives. How do you think the experiences of the past several years will tend to affect young Americans of today?

Malmendier: For starters, look at inflation, which started creeping up since 2021, and then in 2022 you were getting close to the double digits. There was such a sharp contrast between the long period of the Great Moderation and all of a sudden that price shock kicking in. For older people, who have seen high inflation before in the '80s or even the '70s, I'm predicting they're just taking that into the average of the long period of low inflation since the early 1980s and of their experience of high inflation in the 1970s and early 1980s. Given their long history of experiences, the new spike does not get too much weight. It just goes up a bit.

But for young people in the United States who basically had seen no inflation at all outside of textbooks, it's a different story. All of their life before they had experienced very low inflation, and then all of a sudden there's the spike. Initially, then, they might be a little slow to react. But if the spike in inflation lasts long enough — it isn't just a two-month blip — they realize, whoa, the world I live in is different than the world I thought I was living in, where high inflation happens only in textbooks.

So the weight they put on that experience increases and can in fact end up being much higher than for older generations because the new

experience makes up a much larger part of their lives after it has happened for two years or so. Applied to the current situation, we are now moving slowly and steadily toward the 2 percent inflation target, and we might avoid the complete scarring effects.

One area where I do expect big experience effects from recent years is living through the COVID-19 crisis and many of us being relegated to working from home. I do expect there to be a lasting change in how we view the value of social interaction, the value of working from home versus working at your workplace.

The leadership here at the Haas School of Business, where I am right now, is encountering exactly this issue. They wonder why the same people who were happily coming in five days a week before COVID absolutely refuse to do so now. It's clearly an experience that has changed people. In the classical economic model, you would just talk about the information obtained from that experience and maybe the setup cost of learning Zoom. But that can't explain everything. We knew the length of our commutes before COVID.

And yet, personally experiencing what remote work and cutting out your commute means for your personal life makes an enormous difference. You have to experience it first, not because of lack of information, not because you cannot add and subtract hours spent in the car versus not, but because it just enters your decision-making differently if you have physically experienced it.

EF: If I'm, let's say, on the Federal Open Market Committee, am I also subject to these forces of experience?

Malmendier: Yes, you are. And that is maybe the most surprising aspect to many economists. Allow me to step back again: When behavioral economics and behavioral finance started playing more of a role in our profession, the applications initially focused on individual investors or individual consumers — the man or woman on the street, so to speak. We would have not thought that these biased beliefs play a role for the highly informed, highly trained, highly intelligent, successful leader of a company, a Federal Reserve Bank president, a Federal Reserve Board governor.

Even before I was working on the research on experience effects, I was wondering about that. Because biases reflect something our brain is wired to do, it doesn't need to be negatively correlated with intelligence. So my earliest work in behavioral finance in fact was about overconfident CEOs. And I vividly remember when presenting this paper on the job market two decades ago how certain audiences would tell me, look, I know several CEOs, they're very smart, how can you argue they are biased? But it turns out biases do apply, even to the most successful CEOs.

Going back to experience effects, our work here is based on basic neuroscience underpinnings: Namely, that as we are walking through life and making experiences, neurons fire and so cause connections between neurons, synapses, to form. When experiences are repeated and last longer, then these connections become stronger. So, if I've gone through a period of high inflation and seeing a price increase triggers fear and worry, well, that's also happening to highly informed and well-trained and knowledgeable policymakers, even at the very highest level. That's why their past personal experiences can help us to predict who is leaning more on the hawkish or the dovish side. We have actually found strong evidence of it.

And I've asked the same question about bankers. I've looked at the reports of banks' financial situations — provided thanks to the Fed — on how close they might have been to a bank run, how close they have been to financial distress, and whether that affects their lending behavior in later years. For instance, if a bank experienced the Russian debt default crisis in 1998, their situation during this crisis has a lasting influence on their future choice of exposure in these kind of debt markets.

EF: It seems like you're quite interested in the psychological level of explanation for economic behavior. What drew you to studying these kinds of issues?

Malmendier: Partly it goes back to those times at the University of Bonn, where I was initially sitting in my law lectures, and then I was venturing over to the very mathematical theoretical economics lectures. As beautiful as the modeling and analysis of equilibria was, I was struck by the sharp contrast between the human behavior we analyzed in my law classes and how human behavior was modeled in my economics lectures. In law, humans make mistakes and emotions play a role. For example, for how the penal code considers somebody's attempts to kill somebody, it matters whether that person was being driven by the moment or cold-bloodedly planned the murder. It makes a difference in how law assesses and penalizes this behavior. In economics, there was no

Ulrike Malmendier

PRESENT POSITIONS

Cora Jane Flood Professor of Finance, Haas School of Business, University of California, Berkeley; Professor of Economics, University of California, Berkeley; Faculty Director, O'Donnell Center for Behavioral Economics, University of California, Berkeley

SELECTED ADDITIONAL AFFILIATIONS

Research Affiliate, Centre for Economic Policy Research; Faculty Research Fellow, Institute for the Study of Labor (IZA); Research Associate, National Bureau of Economic Research

EDUCATION

Ph.D. (2002), Harvard University; Ph.D. (2000), University of Bonn; B.A. (1996), University of Bonn; B.A. (1995), University of Bonn

consideration of motives or emotions.

And then, when I started studying at Harvard for my second Ph.D., the economics Ph.D., I was lucky that there was rising interest in behavioral economics. It was still a time when it was not broadly accepted, when advisers told me that I might not want to go on the job market with behavioral economics research, but it was slowly changing. For me, behavioral economics really clicked. It injected the psychological realism we need to make good predictions and have good suggestions for policy.

Now I'm trying to go beyond that. We see in classical economics the *homo economicus* who is perfectly optimizing — taking all the information and coming to the perfect decision. Behavioral economics came around and said, well, that's unrealistic. Let's inject some psychological realism. Let's introduce overconfidence, self-control problems, etc. And that was all good.

But here is the thing that was still missing: If you think about the *homo economicus* as a computer with a program that perfectly solves the problem at hand, behavioral economics was still kind of dealing with humans like computers. They now had flawed software or maybe occasionally short circuited. But however you program them initially — with overconfidence and so on — they are running that program for the rest of their lives.

This newer agenda on experience effects emphasizes much more that, no, humans are not just software, flawed or not flawed. They are living, breathing organisms. As they walk through life, they adapt and change their outlook on the world. That means that we as economists have a lot to learn, not just from social psychology, which was great for behavioral finance, but also from other fields — from neuroscience, from psychiatry, from endocrinology, etc. People who have lived through a monetary or financial crisis come out of that scarring experience with their brains rewired, and they will make different decisions.

They will keep overweighing this outcome happening again. But I think there's much more to learn. For example, the neuropsychiatrists tell us if you do live through a crisis but you feel like "you can do something about your situation" — what they call controllability — then you tend to do better. You don't tend to be so affected, so traumatized by it.

So I'm personally of the opinion that there's robust evidence in medicine, biology, neuropsychiatry, cognitive science, which we haven't incorporated as much as we should. I'm a bit on a mission to get economists more broadly, not just behavioral economists, to open up to that — of course, acknowledging that behavioral economics, the first round, got us a big step forward.

EF: Are there strategies that people can use to overcome the effects of their negative experiences and make better decisions?

Malmendier: Yes, absolutely.

For contrast, let me start, though, from the strategy that a lot of policymakers and economists believe in but that works much less well than we used to think. That strategy is teaching people. That's the strategy I naturally like as a professor. I used to think that if only I teach people about the equity premium puzzle and about diversification, then they will understand they need to put their money in a broadly diversified low-fee fund rather than having it in some savings account, or worse, checking account, etc., and they would all be better off.

Hence the emphasis on financial literacy. But so far, the process has been muted. Now, I still think financial literacy training is useful; it's important. But it tends to be less effective than we professors often hope compared to the effect of personal experiences with the stock market or other financial instruments.

Theoretical knowledge is just less powerful than we used to think. People might not act on information, and it is not because of asymmetric information, frictions, and access to information. All of that exists and is relevant. But even if you have full access to the relevant information, if you've understood it, if you've processed it, you might still not act on it unless you've seen it work in practice.

That brings me to the more direct answer to your question. If you feel that due to past info exposure, you are acting in a somewhat biased way, and you want to remedy it, the best recommendation is to slowly expose yourself to doing the alternative action or environment and personally experience the resulting outcome and in that way rewiring your brain.

From neuroscience, we don't just learn that life experiences rewire our brain and infer that, after a high-inflation period, we might be scared and get triggered when we see price increases. We also learn that throughout our lives, our brain has a high plasticity — maybe less than when we're young, but throughout our lives, we are pruning synapses that we don't need anymore, we are strengthening others, so we can affect how we think about the world. If we manage to expose ourselves to the right setting, that helps us not only to intellectually understand, but almost physically understand, why a certain type of decision is the right one. We change our wiring.

If somebody is really scared about the stock market, doesn't want to go there, the literature on experience-based learning would suggest something like a cognitive behavioral therapy approach. Namely, let's just take $50 or $100 and put it in a broadly diversified low-fee fund. In the worst case, that's not too much loss. After a year, we look back and see what happened to it and realize, huh, that wasn't so scary. That worked out pretty well even at a bad time. That way, we are rewiring our brain and maybe coming around to the conclusion that, to accumulate wealth, we should be doing more of that.

EF: In recent research, you've found that the experience of leading a company during the Great Recession tended to make CEOs age faster. What's going on there?

Malmendier: It's very connected to this high-level view I have of the evolution of what economics is about and should be about. The mind and the body are altered in many ways as we are walking through life. In the work on experience effects, I've mostly looked at how our beliefs are altered and how financial decisions or inflation expectations are then affected. But I mean it quite literally when I say we need to look at mind and body. Leading your company through that stressful period of the Great Recession probably makes you a different person beyond just having more information.

Working with people from our computer science department, I was exposed to machine learning and convolutional neural networks and learned about this subfield that looks at face recognition and visual machine learning. I thought we could apply it to detect signs of stress and aging. That led us to collect pictures of CEOs before and after crises and to show that we actually age in a crisis. In a severe enough crisis — if I take the usual corporate finance definition, the median firm in your industry undergoing a 30 percent or higher stock price decline — it makes you look an additional one year older.

And this visual effect really does seem to translate into effects on your health. While I couldn't get measurements of cortisol levels or heart rates or the like, I was able to get data on longevity. And what we saw is that if you look one year older, you are actually aging faster in the sense that you unfortunately die one year earlier. So it translated pretty much 1-to-1 into longevity.

What I'm hoping is that with this paper, we can further strengthen the point that we need to think about humans with all their biology. We have a lot to learn that's relevant for predicting career paths, education, all the usual outcome variables we economists are interested in.

EF: What are you working on now?

Malmendier: The physical realm of what crises do to you is something that is staying with me. I have been interested in digging deeper. What is the most stressful aspect of it all? What are the actual stressors? In a related project on CEOs, we ask what kinds of specific situations or decisions trigger these adverse effects in your body and on your health. For CEOs, it turns out to be layoff decisions. It's really hard on a leader to have to let a large fraction of their employees go, particularly if they've been with the company for a long time.

Also, going back to the inflation topic: The recent bout of inflation, not just here in the U.S., but also in Europe, has gotten me interested in how the lower-income parts of the population are affected by inflation. When studying inflation and inflation expectations, economists tend to look at the professional forecasters and market participants who have an impact on markets outcomes. The low-income populations are less studied. But they are, of course, the people for whom the marginal price increase in groceries has the highest marginal utility impact.

I'm trying to estimate to what extent inflation affects their consumption behavior. As goods become more expensive, what can they still afford? And what do they want to afford? That is, is the effect of inflation on their spending coming fully, or almost fully, through the channel of constraints, or do beliefs play a role? Also, is there a nonstandard element in their belief formation? There's a lot of research on hand-to-mouth consumers, about adjustment frictions of consumption that could play a role. But present-biased preferences could also play a role; limited attention could play a role.

We got access to a fairly new dataset on low-income consumers and are exploiting the recent bout of inflation as a source of variation. We ran a survey on that sample to tease out what factors play a role. So far, we are finding that, first of all, it's not just all constraints; beliefs do matter. And they are correlated with difficulties in managing debt. People who have difficulties managing their debt are reacting to inflation in an unexpected way, moving further toward overconsuming relative to what the data say they should be doing. This suggests there might be some nonstandard factor at play that got them into difficulties in managing debt to begin with.

That's what the preliminary results suggest. I hope to learn more about this population and the impact of inflation on them. **EF**