

**MIT Center for Finance and Policy  
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**The Pathology of Finance  
Keynote Remarks  
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When I reflect on our knowledge of finance – and particularly when I think about the effectiveness of our financial interventions in market economies – I often think of the late Guido Majno.

Guido was one of the great pathologists of his generation and a friend of my late father. He had the profile and bearing of a senator from ancient Rome and the soft, accented voice and sparkling eyes of a 1950s Italian movie star. Guido was a scientist who spent his life studying disease at the molecular level, particularly acute inflammation, at the Universities of Milan, Harvard, Geneva and Massachusetts. A great part of his life's work was at the intersection of science and history leading to his extraordinary book *The Healing Hand – Man and Wound in the Ancient World* – a meticulous study of the on-again-off-again story of insight and ignorance in the treatment of the wound in ancient Mesopotamia, China, India, Egypt, Greece and Rome.

Even with his admiration for the medical inventiveness of the ancients, I can vividly recall Guido summarize his work with the dry observation that: “You know, it was not really until the last year of the Second World War, with the widespread dissemination of penicillin, that if you suffered an open flesh wound you would have been advised to let someone touch you rather than let nature take its course.” Thus, notwithstanding the Hippocratic oath, with a single sentence Guido disposed of four millennia of medical practitioners as likely to have been the cause of more harm than good.

So thinking of Guido, I often wonder how *we* will look several hundred or several thousand years from now – *we who practice and preach the arts of financial intervention*. Which of *our* beliefs and practices will future civilizations look back upon with a mix of horror and amusement as naïve or worse? There are so many possibilities.

My hypothesis is that future civilizations may not be interested in, or not be able to observe, some of the nuanced questions that capture our attention today. I fear they will be struck by broader issues we have missed entirely – much as Guido's story is mostly about our predecessors' failure to understand infection.

So, first, I find it easy to imagine that future civilizations will be struck by our ruling elite's fixation with the idea that if you lower the rate of interest you can lower the cost of purchasing an asset. Surely future generations will understand that this is a half-truth that masks a great lie. If you lower the rate of interest you can lower the cost of *financing* the purchase of an asset but there is a corresponding increase that takes place in the *price* of the asset caused by the decline in the rate of interest. There are, of course, issues of friction and timing and expectations but the value of an interest rate subsidy, or decline, flows to the asset holder and cannot be assumed to accrue to the prospective asset buyer. Future civilizations are likely to be perplexed as to how this simple fact could have been so obvious to our tribes of real estate developers and stockbrokers but escape comprehension by our rulers and populist politicians.

Second, it also seems easy to imagine that future economic historians will look back at our epoch and wonder how we could have behaved as if it were appropriate for the capital of a deposit-taking institution, as a percentage of total liabilities, to be a random number between zero and ten.

Third, I don't think it will escape the attention of future generations that, in our time, important practices could diverge so significantly between institutions called corporations, on the one hand, and households and governments, on the other. They are likely to observe that, as a general rule, corporations tended to restrain themselves from taking out long-term debt simply to support current expenditures while households, sometimes, and governments, most of the time, were comfortable incurring high levels of long-term indebtedness merely to support current consumption. Careful historical analysis will indicate that even the accounting rules were different, with corporations distinguishing between expense and capital items but households and governments rarely doing so.

Fourth, I wonder if our distant descendants will struggle to understand how in our day the elite sect called "macro-economists" came to believe that, absent a worry about too-rapid an increase in the general price level, if the current supply of resources is greater than the current demand for resources then, by definition, the rate of interest is too high. In the idiom of our time, this is the belief that as long as you are not worried about inflation and supply exceeds demand for labor and other resources then monetary policy must be "too tight".

I suspect that future civilizations will recognize that while this idea may be true in some circumstances it is not a universal truth. After all, it is possible that prices for resources might be too high and need to adjust rather than the price of money. Moreover, if this idea were always true then societies facing chronically weak demand would always be able to create an enduring increase in demand simply by putting interest rates at zero and expecting private borrowing to generate the needed increase in demand.

I have a great fear that future scholars will look back in horror at the early twenty-first century when so many societies appeared to think that, despite their rapidly aging populations, the inter-temporal trade off of borrowing *both* consumption and investment from the future, while increasing indebtedness, posed *no risk* of simultaneously *increasing* future output and *depressing* future consumption – that is, of creating exactly the *deflationary conditions* these societies were so earnestly seeking to avoid.

Finally, I hope that our successors will sort out the curious belief in our time that exceptionally low levels of uncertainty and of implied volatility are likely to produce an optimal allocation of resources. This early twenty-first century belief seems to have its origin in the observation that exceptionally high levels of uncertainty and volatility are contemporaneous with periods of financial instability. This appears to have led to the surprising conclusion that exceptionally low levels of volatility must be a good thing and helpful in producing an efficient allocation of resources.

Maybe I find this striking because of my fascination with the advances in medical sciences where they have, in just a few decades, made the great leap in understanding from the germ theory of disease – in which the only good germ is a dead germ – to recognizing that our bodies are hosts to multitudes of microbes and that our health depends upon this vast, microbe ecosystem. For those of us not versed in the biological sciences, this subject is well described in the book *An Epidemic of Absence*, by Moises Velasquez-Manoff, which documents the troubling relationship between the decline of infectious disease and the rise of autoimmune and allergic disease.

The contrast, for me, is jarring: the pathologists and medical practitioners of the early twenty-first century are working hard to understand the optimal level of microbe activity (not too little and not too much), while financial policy practitioners appear to be making the assumption that volatility is a bad thing that should be suppressed, without any apparent appreciation for the perverse consequences – particularly the perverse complacency among the tribes of investors that appears to set in when the oracles of central banking claim not only to know the future but to control it.

I really don't know what the optimal level of volatility is, but I would not have thought that it would be found at the extreme low observations.

It is hard to be certain about when interest rates should adjust and when the prices of labor and other resources should adjust. A public policy aimed at having the entire adjustment process occur through changes in the rate of interest may be politically appealing but I worry that it will create lasting, perverse consequences.

I am not wise enough to know what is the right debt-to-income ratio for households and governments, nor exactly how much equity banks should have. But it seems to me that, as a society, we continue to press the upper boundaries of debt-to-income

ratios and, even today, we are still pressing the lower boundaries of a sensible level of bank equity.

In sum, I worry that when future civilizations look back at the financial policies of the late 20<sup>th</sup> and early 21<sup>st</sup> centuries, all they will see is an unfortunate experiment in pressing on the upper limits of debt relative to income, particularly private debt – as if we thought we could always leverage our way to prosperity and yet be credibly surprised when we experience the depressing or destabilizing consequences of a heavy debt burden.

Six years ago, as the financial crisis was just unfolding, I visited the leader of one of our federal financial authorities. I explained that I did not think that we had a *housing* problem in America but, rather, that we had a *household balance sheet* problem and that until we managed to get as many households as possible through bankruptcy – to work down not just their first lien mortgage but also their second lien home equity loan, their credit card debt, and their auto loan debt – we would not be able to stabilize either house prices or the economy and return to a healthy rate of growth. There was a brief, thoughtful silence and then the response: “But that would take years.”

You may not share my particular worries or agree with my list of current beliefs and practices that will confound future generations, but I hope that you share my sense of optimism.

I hope that you can share my optimism that human knowledge will continue to accumulate and that our descendants’ understanding of finance will be much richer than our own. As this unfolds, our beliefs and practices will necessarily both amuse and disturb future generations. I am sure that many of my own beliefs will be found wanting and my proposed list may turn out to have missed the mark entirely – I’m optimistic.

In particular, I am optimistic about how future civilizations *may* look back on the early 21<sup>st</sup> century. My *worry* is that we will only be viewed as that unfortunate experiment in the abuse of finance. My *hope* is that these years will be looked back upon as the beginning of when we got it right – when we had the breakthrough that allowed our societies to do both finance and economics at the same time, in harmony.

Those of us here tonight can all imagine the economy as existing in three distinct strata or, if I stick to my medical metaphor, with three distinct circulatory systems: first, there are producers and consumers of goods and services, second there are sources and users of funds, and third, there are sources and absorbers of volatility. But many of our fellow citizens (perhaps the sect of macro-economists) simply cannot grasp the volatility system or, more importantly, the interactions of all three systems.

My optimistic self is hopeful that our descendants will look back on these years as when we figured out the interactions of all three circulatory systems, at least with respect to governments' acts and omissions of financial intervention.

I also hope you can share my optimism about how wonderful it is that really serious institutions like MIT and the Sloan School have been willing and able to gather together the resources and the talent to create the MIT Center for Finance and Policy to make this hope more likely.

Because of the support of Dean Schmettlein and the schools' generous alumni and friends, this extraordinary array of talent – from the director and co-directors of Deborah Lucas, Bob Merton, Andrew Lo, and Andrei Kirilenko, to the Advisory Board chaired by the Ben Golub, to all of you assembled here for this inaugural conference – this extraordinary array of talent will be directed at the intersection of finance and public policy.

So now there will be a sanctuary for scholarship to address problems like those that have worried me this evening.

Maybe we won't have to wait thousands of years to improve upon our current beliefs and practices, now that MIT has created a home for the pathologists of finance.