

# Apologia pro Vita Sua

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*The author tries to justify a career spent in financial modeling.*

The great financial crisis that began in 2007 has been an embarrassment for anyone who works in finance and is still capable of having scruples. And for two decades now, the United States has seen the ballooning of the financial sector; that sector's capture of the regulatory system; ceaseless stimulus whenever the economy has wavered; taxpayer-funded bailouts of large corporations; crony capitalism; private profits and socialized losses; the poor and weak as redeemers of the rich and powerful; companies that shorted stock for a living being legally protected from the shorting of their own stock; compromised rating agencies; and government policies that tried to cure insolvency by branding it as illiquidity.

Models of all kinds, ethical and quantitative too, have been behaving very badly. In the face of the travesties described above, how can one justify, to others and oneself, having worked and continuing to work in the financial sector?<sup>1</sup> I drifted into finance close to 30 years ago when I needed a job in New York City after an initial career in physics. I now run Columbia University's program in financial engineering. Although it's always pleasurable to work at something you're good at, that

isn't itself a justification. Here are some of my own answers.

First, I'm a Blakean. I think you *can* see the world in a grain of sand; everything on earth is interesting and worthy of understanding, provided that you try to understand it honestly and see the world as it really is. I like to believe that part of our job on earth is to perceptively reveal the way the world really works.

In 1950, Norman Mailer commented as follows in a letter to William Styron:

"I didn't write [*The Naked [and the Dead]*] because I wanted to say war was horrible, or that history is complex, resistant, and almost inscrutable, or because I wanted to say that the coming battle between the naked fanatics and the dead mass was approaching, but because really what I wanted to say was, "Look at me, Norman Mailer, I'm alive, I'm a genius, I want people to know that; I'm a cripple, I want to hide that," and so forth."

Like it or not, most of us run on ambition and vanity. Mailer's "look at me" attitude is a large part of what drives any writer or scientist—and capitalists. We struggle to compete, to exercise our egos, to shout "Me Me Me" or "Mine Mine Mine." That's human nature.

Second, I think capitalism is OK, at least until something better comes along. So I try to teach students what I understand about the financial world by dint of having once upon a time studied physics and having later become a practitioner of financial engineering.

Financial engineering is an interdisciplinary field devoted to the art of applying mathematical models to help make decisions about the risk and return of investments. True engineering, the mechanical or electrical kind, is based on reliable science or reliable heuristics. Unfortunately, no matter what academics, economists, or banks tell you, there is no truly reliable financial science beneath financial engineering. By using variables such as volatility and liquidity that are crude but quantitative proxies for complex human behaviors, financial models attempt to describe the ripples on a vast and ill-understood sea of ephemeral human passions. Such models are roughly reliable only as long as the sea stays calm. When it does not, when crowds panic, anything can happen.

Models, therefore, are useful but intrinsically fallible. They are constructed by humans, with a simple, direct purpose related to trading and sales. Humans, however, came about through a complex process for no explicit purpose that we understand. (I hope that both atheists and believers can agree on the validity of the previous sentence.) To confuse a model with the world of humans is a form of idolatry—and dangerous.

Several years ago Paul Wilmott and I wrote *The Financial Modelers' Manifesto*, a part of which I quote:

### **The Modelers' Hippocratic Oath**

- ~ *I will remember that I didn't make the world, and it doesn't satisfy my equations.*
- ~ *Though I will use models boldly to estimate value, I will not be overly impressed by mathematics.*
- ~ *I will never sacrifice reality for elegance without explaining why I have done so.*
- ~ *Nor will I give the people who use my model false comfort about its accuracy. Instead, I will make explicit its assumptions and oversights.*
- ~ *I understand that my work may have enormous effects on society and the economy, many of them beyond my comprehension.*

If you keep these statements in mind while you observe the financial world, you may be able to create useful models and also understand their limitations. I've tried, and I believe that the models I've helped to create have been used, for the most part, wisely and without harm.

### **POSTSCRIPT**

In the long run, I'd like to see a world where capitalism has a more human face. Deep down, despite our ambitions and vanities, we know that all Me's are made out of the same stuff, are progeny of the same antecedents. As Schrödinger wrote, "every conscious mind that has ever said or felt 'I' ... [is] the person, if any, who controls the 'motion of the atoms' according to the Laws of Nature." Our problems arise from the tension between each individual's sense of a unique self and the fact that everyone has a similar one.

One cannot eliminate the individual self. But many of the things we call Good have in common their capacity to utilize the Subjective for the purpose of the Objective. Even selfish endeavors (like Mailer's) have the capacity to help one see through others' eyes and recognize that their eyes are much like ours.

I'd like eventually to see a world where more of the following holds true:

Finance, or at least the core of it, is regarded as an essential service, like the police, the courts, and the firemen, and is regulated and compensated appropriately.

Corporations, whose purpose is relatively straightforward, should be more constrained than individuals, who are mysterious with possibility.

People should be treated as adults, free to take risks and bound to suffer the consequent benefits *and* disadvantages. As the late Anna Schwartz wrote in a 2008 interview about the Fed, "Everything works much better when wrong decisions are punished and good decisions make you rich."

No one should have golden parachutes, but everyone should have tin ones.

People should remember what Edward Lucas recently wrote:

If you believe that capitalism is a system in which money matters more than freedom, you are doomed when people who don't believe in freedom attack using money.

## ENDNOTES

Apologia pro Vita Sua means “a defense of one’s life” and is the title of a book by John Newman. See [http://en.wikipedia.org/wiki/Apologia\\_Pro\\_Vita\\_Sua](http://en.wikipedia.org/wiki/Apologia_Pro_Vita_Sua).

<sup>1</sup>To journalists who ask financial engineers whether they should be doing something better with their putative skills, I ask the same question.

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