Carolyn Hardin

CAPTURING FINANCE

ARBITRAGE AND SOCIAL DOMINATION

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This book is dedicated to Ted,
my anchor in this world.

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INTRODUCTION

Into the Lions' Den

In the fall of 2007, I entered graduate school to pursue my master's degree in communication studies during the same month as the so-called credit crunch—the seizing up of bank-to-bank lending amid uncertainty about the value of mortgage-backed securities. This, it would turn out, was the first act of the global financial crisis, and my postsecondary work quickly turned to issues economic. By the fall 2009, when I began my PhD studies, I was working with professors and graduate student colleagues to try to make sense of the unfolding crisis. As an interdisciplinary scholar, I felt it was important to put my money where my mouth is (or my mouth where the money is in this case) and take some actual finance courses. With an undergraduate degree in mathematics, I felt confident I could do the work. So, in the fall of 2010, after taking two semesters of prerequisites in the economics department and with the support of my advisor, I enrolled in "Introduction to Derivatives," in the Master of Business Administration program at the business school at my university.

After three years of reading critiques of capitalism and the crisis, I approached the gilded complex of marble staircases and soaring arches located far away from the shabbier digs of the humanities departments with trepidation. I was going into the lions' den; the home of the "masters of the universe" (Wolfe 1988) who had inflicted a recession on the world. I naively believed that since I was a critical researcher, we were naturally at odds. I expected to be met with suspicion and antipathy, and steeled myself for the interactions to come.

My actual experience at the business school surprised me in two distinct ways that would turn out to be intimately related. First, I was welcomed with warmth and interest into the very belly of the beast.[1] And, second, the topics covered in my MBA classes were virtually all overrun by one particular term, *arbitrage*. As I would discover, arbitrage is a label applied to a particular sort of trade wherein the trader borrows money to buy a cheap security in one market and then sells the same or similar security for a higher price elsewhere, netting a profit. But this was as yet unexplained. All I knew was that my derivatives professor used the term frequently and blithely, as if it was as banal and fundamental as oxygen itself, and I had never so much as read the term.

I have come to believe that the first surprise—my good treatment by my finance professors and classmates—reflects the failure of critical scholars to truly grasp or challenge the very real problems with finance as it is taught and practiced. If we did, finance professors might well regard us with caution. That we don't was perfectly crystallized in my experience from day one of hearing over and over again about arbitrage, a concept that not one of capitalism's critics (that I had yet encountered) had even alluded to, much less unpacked. Arbitrage was clearly fundamental to academic finance, and I didn't even know what it is. It is possible that arbitrage would not have borne down on my thinking so substantially if I had found myself in "Corporate Finance" or "Microeconomics" in my first term at the business school. But since derivatives played such a large role in the financial crisis, it seemed a fitting place to start. And, even after completing that course, I found arbitrage at least mentioned in all my other classes. It was always present, never questioned, never critiqued. It was the substrate of financial economics, and I wanted to know why.

In the textbooks I was using, arbitrage was always at least defined, though those definitions differed across sources. In some definitions, like this one, "Arbitrage is the process of buying assets in one market and selling them in another to profit from unjustifiable price differences," arbitrage is restricted to the act of buying a set of securities and selling that same set again (Billingsley 2006, 2). In others, like this one, "a trading strategy that takes advantage of two or more securities being mispriced relative to each other," it may be securities that are equivalent though not truly the same (Hull 2008, 521). The key to the definition is that this buying and selling takes place because there are different prices in different markets in which the securities are bought and sold. In the act of buying the low-priced security and selling the high-priced security, a profit is gained.

All definitions of arbitrage include two caveats, which turn out to be of key importance to its role in financial economics. First, to be arbitrage, the trade must always be "self-financing," that is, done with borrowed money and not the trader's own capital (Billingsley 2006, 2). Second, many definitions include the restriction that trading be done simultaneously or instantaneously. These conditions differentiate arbitrage from risky investing in stocks or practices of transporting goods (merchanting). Unlike the stock speculator or merchant who has skin in the game by way of his investment and/or his possession of assets over time, the arbitrageur must make a profit without using his own money or risking that his goods are destroyed or his stock depreciates. Arbitrage is only arbitrage if it is *riskless*.[2]

The assertion that arbitrage is riskless isn't a mere rhetorical flourish. It is the reason for arbitrage's centrality in all my finance classes. Arbitrage is the exception that proves the rule that all returns above some baseline—the risk-free return—are based on some kind of risk. Financial economics operates on the basic principle that risk and return are directly correlated; as one goes up, so must the other. There is no such thing as a free lunch or money for nothing. You must take the chance that the company you are investing in might falter or fail altogether, or that the yields of a commodity will be down compared to expectations. The magnitude of the risk you take on corresponds to the returns you can expect if things go well, at least in theory. In theory, securities do not offer high returns for low risk. If they did, investors would flock to them, diluting returns. This works in the converse case of low return and high risk. The basic concepts of supply and demand thus ensure that risk and return are properly balanced, or so the logic goes.

The relationship between risk and return underscores every part of the imaginary universe of efficient markets that financial economics describes. In this universe, riskless profit is an oxymoron. Profit or return is the correlate of risk. Without one, you cannot have the other. Therefore, in the theoretical world of finance, arbitrage is actually impossible. Of course, this prompts the question: If it is impossible, why is it so central to financial theory? It turns out that arbitrage occupies a privileged and bizarre ontological position in the world of finance. In financial economics, it is enshrined in the "no-arbitrage condition," which is used to construct modern financial pricing models. The reason I heard the word *arbitrage* so much in "Introduction to Derivatives" is that derivatives pricing is deduced from a theoretical trading situation in which arbitrage *cannot* occur. A call option—a financial contract that gives the buyer the option to purchase stock

at a future date—is priced correctly if the price does *not* allow a trader to arbitrage between the option and its underlying stock. If arbitrage is possible, the price is wrong and the seller is allowing the buyer to gain riskless profit, a challenge to the very foundation on which finance is built. For financial theory, then, arbitrage is present only in its absence, that is, in the "no-arbitrage condition" (Bodie, Kane, and Marcus 2009, 325).

Of course, the world does not function exactly as financial economic theorems and models dictate, but that does not mean that the strange presence-in-absence of arbitrage doesn't matter. When discussing actually existing markets—the kind that can be inefficient, and where market prices can get, if only momentarily, out of whack—economists reference arbitrage not as an impossibility, for it does in fact occur, but as an automatic mechanism that will return prices to correct levels through the fundamental logic of supply and demand. That is, if prices for the same asset occur at different levels in different markets, arbitrageurs will spring into action, buying the cheap and selling the dear, thus increasing demand (and price) for the first and increasing supply (and thereby lowering price) for the second. Arbitrage, despite its absence being the very condition of financial models, becomes the proof that if they are ever violated in practice, it won't be for long. Arbitrage is assumed to be both absent as a condition of formal economic models, and present as the assumed real-world mechanism that polices the system to bring it in line with the models. In this second role, arbitrage occupies a privileged position not only in financial economics, but in the broader neoliberal vision of the market as a more perfect information processor than any human brain could hope to be. Arbitrage is framed as the logical guarantor of market efficiency, a moral imperative, and a public good, which imposes fairness in financial markets. Regulators specifically point to "arbitrage discipline" as the reason that regulations are not needed in financial markets (Roye 2001)!

Yet financial traders are not interested in performing arbitrage out of an altruistic desire to create efficient markets. They are interested in profit, and that interest is what makes arbitrage the efficiency-enforcing practice that it is (some of the time). What's more, as long as arbitrage is considered riskless and therefore immediately bookable, it has immediate and attractive material benefits to traders who receive bonuses based on their booked profit. Other strategies that involve seeking profit that might or might not materialize (long-term investing, venture capital, etc.) pale in

comparison. In this way, in the world of finance, arbitrage is something of a golden goose, or, to use language more familiar to the world of finance, it's the proverbial free lunch. Arbitrage is money for nothing, return without having to pay the piper for risk. The profit made from arbitrage is sought by traders *because* it violates the very laws of finance that it supposedly promotes, that is, because it is, at least in theory, *riskless*, secure, and therefore immediately bookable as profit in traders' accounts.

In this system of thought, everyone wins because "making markets efficient can be a profitable activity" (O'Hara 2016, 27). Yet the fact that arbitrage may, as a seeming side effect of its true goal, provide a profit to those who undertake it is nowhere systematically assessed in financial economics. For all the attention given to the system-wide benefit of arbitrage—market efficiency—no assessment of the systemic impacts of arbitrage profit is offered. This is a serious omission given the evidence that arbitrage has been the main focus of financial traders for at least a century. An 1892 article in the *New York Times* declared, "It is alleged that probably three-fourths of all the business done at the Exchange is transacted through arbitrage houses."[3] An American Management Association newsletter written in 1984—as computerized trading was allowing new forms of arbitrage—claimed that the "emphasis on arbitrage . . . is already well on its way to revolutionizing corporate attitudes and practices" (Militello 1984, 29). Similarly, in 1986 Richard Croft reported that "some analysts think that as much as 40 per cent of all trading on the New York Stock Exchange is, in fact, [index] arbitrage" and that the "number and range of participants continue to grow."[4] A 2003 article in *Financial Times* quoted hedge fund manager Andy Preston as saying that "over the past five years [arbitrage] strategies have become increasingly sought after because they have delivered phenomenal returns."[5] In 2014 Mark Blyth, a professor of political economy at Brown University, quoted a statistic eerily similar to the one offered in the *New York Times* in 1892: "A funny thing about these very big banks . . . they make 70 percent of their profits through trading, basically swapping bits of paper with each other for arbitrage gains, none of which arguably adds to anything except global liquidity and doesn't really do much for real investment" ("Credit Suisse" 2014). Finally, in 2016 finance professor Maureen O'Hara declared that "arbitrage is a ubiquitous activity in financial markets" (26). What's more, as I demonstrate, an arbitrage trade in large part inflated the housing bubble. The production of all those financial derivatives, mortgage-backed securities, collateralized debt

obligations, credit default swaps, and more, was directed toward an arbitrage trade of epic proportions.

After discovering arbitrage, I set about constructing my own reading list of noneconomists who have written about it. That list is populated almost entirely by economic sociologists in the subfield termed social studies of finance (SSF) and anthropologists, who, in the early to mid-2000s, began to pay special attention to arbitrage (Beunza, Hardie, and MacKenzie 2006; Beunza and Stark 2004; Hardie 2004; MacKenzie 2003; Miyazaki 2007; Zaloom 2006). These researchers attempted to call collective attention to the fact that arbitrage had become a "form of trading crucial both to the modern theory of finance and to market practice" (Beunza, Hardie, and MacKenzie 2006, 721). Donald MacKenzie's widely read *An Engine Not a Camera* explained the way that arbitrage functioned to bring markets in line with the models practitioners used—something he termed, following the work of Michel Callon, "performativity." However, in accordance with much of SSF, these investigations did not submit arbitrage to critical scrutiny by, for example, radically deconstructing the financial economic definition of the term. Instead, they focused on the material and social aspects of arbitrage in practice. Indeed, Beunza, Hardie, and MacKenzie hoped that "the study of arbitrage could be a productive area of collaboration [with] financial economics" (2006, 741).

Anthropologist Hirokazu Miyazaki contributed articles and a full-length book on his study of arbitrageurs in Japan. Like the sociologists, he also notes that arbitrage is "a central category of financial economics and a widely deployed trading strategy" (2013, 8). His study gives important indications of just how central arbitrage is when he claims that, "for the arbitrageurs I knew, arbitrage was both their individual action and the market mechanism itself" (21). Miyazaki (2007) pushes past the SSF capitulation to financial economics by questioning the strict distinction between speculation and arbitrage. However, rather than examining the broad political and economic effects of arbitrage trading, his study focuses on reframing financial market professionals as philosophers whose entire orientation to reality takes on the qualities of arbitrage. For Miyazaki, arbitrage is a metaphor for the "daily comparative work of Japanese financial professionals" in seeking arbitrage opportunities and also defining their own identities and personal goals (2013, 13).

While these contributions brought attention to the practice of arbitrage, they failed to rise to the level of critique, as they did not question

whether it is really the neutral trading strategy it is argued to be. Nor did they question the politics of—the relations of power produced, reified, and required for—this most central of financial concepts and practices. I have found two exceptions. The first is the edited volume *Derivatives and the Wealth of Societies*, written by a group of scholars who pay close attention to arbitrage and its role in the social and cultural constitution of markets (Lee and Martin 2016). I had the benefit of attending many events with the working group that produced the book, and it influenced my thinking in several ways. Second, in 2016 finance professor Maureen O'Hara published *Something for Nothing: Arbitrage and Ethics on Wall Street*, in which she set herself the task of "trying to put ethics and finance together" (viii), a laudable endeavor, especially when she explains that "what is unethical is not readily apparent to a surprising number of people on Wall Street and on Main Street" (3). However, it quickly becomes apparent that, while O'Hara believes that arbitrage may sometimes be "used to exploit others, [and] to take advantage of the complexity in modern markets to behave unethically," she does not question the definition of arbitrage as that which promotes efficiency within markets (3). Instead, she reiterates that, "regardless of the setting, arbitrage also makes markets better because, with prices aligned, resources can be allocated to their most efficient uses" (27). She even explains that the "something for nothing" title of her book refers not to the riskless profit that arbitrageurs enjoy, but to the "tremendous benefits to the economy, allowing resources to go to their best uses at essentially little or no cost" that arbitrage provides (2), a clear endorsement of arbitrage's efficiency-promoting function, or what I will call the *benevolent-efficiency narrative*.

Something for Nothing turns out to be a careful and well-reasoned attempt to interrogate the ethics of arbitrage from inside the model world in which it is already assumed to be a public good. But this is an impossible effort. O'Hara's focus on the common good is antithetical to the very logic of arbitrage, which I will show is the form of monopolistic appropriation or capture that makes financial capitalism what it is. She is therefore left cataloging various forms of arbitrage along a spectrum from "weasel" to "felon" (2016, 64). For example, she recounts the arbitrage that JP Morgan Chase undertook in California energy markets. Using the price quoting structure of the California Independent System Operator (CAISO), which aggregates bids by energy suppliers, JP Morgan Chase found a way to profit through complex arbitrage schemes that involved placing and removing bids. According to the Federal Energy Regulatory Commission, the trades

cost CAISO $124 million in a little over a year, a shortfall almost certainly passed on to consumers (115).

Yet, from within the benevolent-efficiency narrative, O'Hara wrestles with the ethics of the case. She says that "there will always be winners and losers . . . being a winner is not a crime" (115), but ultimately does label this case as unethical because JP Morgan Chase "ignored the larger ramifications of these actions on everyone else" (117). Her diagnosis contradicts the logic of arbitrage pricing enshrined in the heart of financial economics, and the grander logic of free market capitalism. Arbitrageurs—like the self-interested protagonists animating Adam Smith's invisible hand—are specifically not supposed to consider others. One popular textbook explains: "The idea that market prices will move to rule out arbitrage opportunities is perhaps the most fundamental concept in capital market theory. Violation of this restriction would indicate the grossest form of market irrationality. The critical property of [arbitrage] is that any investor, regardless of risk aversion or wealth, will want to take an *infinite* position in it" (Bodie, Kane, and Marcus 325; my emphasis). Arbitrageurs' pure self-interest is what ensures efficient markets. So O'Hara's suggestion that self-interested motivation in trading is unethical means that—in her framework—all arbitrage is as well.

The ethics of individual arbitrage trading is not the subject of this study. But I do offer an interpretation of arbitrage that can explain O'Hara's contradictory attempt to parse its ethics. My assertion is that arbitrage is central to finance, that it is in fact what makes finance distinct, and that as such it is well overdue for critical scrutiny. In the course of deconstructing the financial economic definition of arbitrage, offering one of my own, and exploring the social conditions that enable it, I take up political rather than ethical questions. I show how arbitrage drove the housing bubble that led to the financial crisis. I also explore the ways that the concept of risk—and particularly of the notions that risk is an objective, measurable characteristic of securities and that risk and return are naturally correlated—created historical social relations that made arbitrage possible and justifiable. And I sketch some preliminary thoughts on how a politics directed at risk might lead to more successful challenges to the worst consequences of financial capitalism.

The book unfolds in two parts corresponding to arbitrage itself on the one hand, and the role of risk in promoting and justifying arbitrage on the other. In chapter 1, I propose a framework for understanding capitalism as an internally differentiated system comprising various apparatuses of capture. Drawing on the work of Moishe Postone (1993), I argue that

each form of capture is organized around a particular principle of "abstract domination" that presents itself as quasi-objective and thereby compels the participation of people in the very practice that dominates their lives (Postone 1993, 161, 5). I explore three apparatuses, the industrial capitalism explained by Karl Marx, the racial capitalism that runs from the origins of racial slavery through the present, and financial capitalism. I put this framework in conversation with traditional Marxist understandings of finance and suggest that previous challenges to finance such as Occupy Wall Street have largely failed because they have not focused attention on the principle around which the abstract domination of finance is organized—risk.

In chapter 2, I take on the mainstream financial economic definition of arbitrage. I argue that financial economics and its benevolent-efficiency narrative of arbitrage actually function as a justifying discourse for financial capture that has influenced economic policy, financial regulation, and law. The theoretical role that arbitrage plays in financial economics provides an effective justification and defense of financial capture. However, financial economics doesn't attend to the impacts of arbitrage and the profits it generates in real life. Therefore, it is necessary to construct a new definition based on the functioning of arbitrage in actual financial markets.

This is precisely the task I take up in chapter 3. Through a series of historical case studies, I show that real-life arbitrage is best defined as those kinds of financial trading in which buying and selling instantaneously is *simulated*. Instantaneity is simulated through the use of financial contracts—which stabilize prices over time—or what I call network differentials, differences in connectivity or speed that give some traders advantages over others. In real life, arbitrage is not a benevolent service provided by rational traders, but a battle for simulated instantaneity, fought with ever more complicated derivatives contracts and ever faster and more proprietary network technologies.

The second part of the book turns to the idea of risk as the principle that organizes the system of finance. In chapter 4, I more fully develop the notion of abstract domination by taking a detour through Postone's critique of Marxism. I show that, while exploitation may seem like a reasonable way to interpret arbitrage, it is better to see it as the result of a new system of abstract domination that we have yet to come to terms with. In this system, individuals are compelled to engage in financial risk-taking, and to submit themselves as credit risks in order to borrow money. These activities, risky investing and risky borrowing, produce flows of financial securities that serve as the fertile ground for arbitrage in financial markets.

In chapter 5, I identify the form of arbitrage I call *money machines*. These trades are exceptional in both the sense of being the exception to dominant definitions of arbitrage and of being the most effective, profit-generating way to perform arbitrage. In general, money machine arbitrage trades do not result in prices converging toward equilibrium but instead deliver continuous profits. They therefore thoroughly contradict the benevolent-efficiency narrative that arbitrage makes market prices fair and is self-negating. I show that arbitrage in subprime mortgage–backed securities, particularly those known as collateralized debt obligations (CDOs), in the run-up to the financial crisis was a money machine trade. I conclude this chapter by detailing the structural conditions that allowed financial firms to perform "alchemy" (Benmelech and Dlugosz 2009) on mortgage-backed securities so as to continuously generate profit.

In chapter 6, I reexamine the causes of the financial crisis through the capture framework as a way to account for the systematic nature of financial capitalism and its devastating consequences. I explain the way that both financial credit rating agencies and subprime lending contributed to the crisis by showing how the axiom of risk and return and the axiom of risk measurement shaped each practice. I demonstrate that, contra the accepted wisdom, the risk of subprime CDOs was not inaccurately measured in the run-up to the financial crisis. Instead, it was conjured, like the emperor's new clothes, as a critical input to make financial capture possible.

Finally, I conclude the book by proposing and describing some concrete ways to challenge the system of abstract domination of risk. I describe several proposals for challenging or undoing the stratification of interest rates produced by risk-based pricing. I also review the idea of "household unions" offered by Dick Bryan and Michael Rafferty (2018, 189), which they suggest might be able to extract political concessions from the power structures of modern finance by straining the flows of securitized debt and other payments that come out of households. These proposals are only first, grasping attempts to challenge financial capture by creating a politics of risk.

Introduction: Into the Lions' Den

1. Several of my professors expressed interest in my topic and directed me to resources I used for this book. I was even hired as a teaching assistant for one term by one of my particularly generous professors. I have nothing but praise and gratitude for all the people I came into contact with during my year and a half expedition at the business school.

2. For example, "An arbitrage opportunity arises when an investor can earn riskless profits without making a net investment" (Bodie et al. 2009, 325). Also, "'True' arbitrage is both riskless and self-financing" (Billingsley 2006, 2).

3. "Arbitrage Business: The Stock Exchange Making an Effort to Lessen Its Volume," *New York Times*, September 20, 1892, 9, https://www.nytimes.com/1892/09/20/archives/arbitrage-business-the-stock-exchange-making-an-effort-to-lessen.html.

4. Richard Croft, "Arbitrage Growing in Popularity," *Globe and Mail* (Toronto), September 13, 1986, B2.

5. Elizabeth Rigby, "Running Arbitrage with Attitude," *Financial Times* (London), June 16, 2003, 2.

Chapter 1: Capitalism as Capture

1. Richard Wolff and Stephen Resnick explain the difference between productive and unproductive labor with regard to management: "The productive capitalist directs me to supervise productive laborers, to make sure they perform the maximum possible surplus labor. In this case I do unproductive labor since my labor power is not a direct part of the production of capitalist commodities"(1987, 166). In addition to managing, Wolff and Resnick classify merchanting, renting land, and moneylending as unproductive labor, that is, labor that does not create value, even though it indirectly aids in the production and appropriation of surplus value. Lending at interest is specifically categorized by Wolff and Resnick as an unproductive, "nonclass" process in which "no labor or surplus labor is