Energizing Finance: The Energy Crisis, Oil Futures, and Neoliberal Narratives

CALEB WELLUM

This article examines the origins and development of oil futures trading in the United States to demonstrate the important role that energy concerns played in the financialization of the U.S. economy in the 1970s and 1980s. The article contextualizes the emergence of oil futures contracts by narrating the longer history of U.S. futures markets and financialization. It also explores the halting development of oil futures contracts, and analyzes the three kinds of legitimating narratives that accompanied oil futures trading: reason, the primacy of price, and power. As a whole, the article argues that energy crisis discourse contributed significantly to the financialization of the U.S. economy by framing futures markets as the only viable solution to the energy crisis. The much-celebrated oil futures contracts on the New York Mercantile Exchange supported and marked the emergent power of financial thinking as the United States entered a neoliberal era.

The United States underwent a wrenching socioeconomic transformation in the 1970s, one of only two decades in the twentieth century in which the economic well-being of most Americans declined; the other decade was the 1930s.[1] The economic order that emerged on the other side in the 1980s featured the displacement of Keynesian liberalism by neoliberalism: a social and political ideology that prioritizes free markets, risk-taking, competition, and a largely economic

doi:10.1017/eso.2019.26

Published online September 19, 2019

Caleb Wellum is a 2019–2020 Energy Futures Postdoctoral Fellow in the Department of Communication Arts at the University of Waterloo, Ontario. He is a historian of the twentieth-century United States and currently is at work on a book about the 1970s energy crisis. Department of Communication Arts, Modern Languages Building, Room 233, University of Waterloo, Waterloo, ON, Canada, N2L 3G1. E-mail: caleb.wellum@mail.utoronto.ca

1. Stein, *Pivotal Decade*, xi.

understanding of individual liberty.[2] Service industries—particularly finance, insurance, and real estate—thrived and accrued significant social and political power while many firms shifted from manufacturing to information and biotechnology to circumvent the 1970s' limits to growth and crisis of profitability.[3] Scholars use the term "financialization" to name the growing influence of finance in this neoliberal era of U.S. capitalism, in which financial concepts, markets, and institutions pervaded the economy, politics, and culture.[4] Accounts of its origins highlight a variety of factors, including deep patterns in the structure of capitalism; the unintended consequences of state policies; a new emphasis on shareholder value in corporate management; and economic competition from Japan.[5]

This article traces the origins of oil futures trading in the United States, as well as the legitimizing narratives that accompanied it, to demonstrate the key role that the energy crisis of the 1970s played in the process of financialization. Financial exchanges in the United States first devised futures contracts in oil products in the immediate wake of the 1973–1974 energy crisis, though they did not succeed until the late 1970s and early 1980s. Their eventual success, however, transformed the global oil and finance industries, and helped to strengthen the broader and ongoing financialization of the U.S. economy.[6] Futures traders and their advocates often claimed that oil futures had helped to end the energy crisis and bolster U.S. geopolitical interests by helping to lower the price of oil to sustain the nation's "fossil economy."[7] The energy crisis thus provided an effective point of focus for advocates of financialization and gave their narratives

2. Hansen, "From Finance Capitalism to Financialization," 620; Brown, *Edgework*, 37–40; Mirowski, "Defining Neoliberalism."

3. See, for example, Elmore, "Commercial Ecology of Scavenger Capitalism."

4. Epstein, "Introduction," 3; Hansen, "From Finance Capitalism to Financialization," 627; Haiven, *Cultures of Financialization*.

5. Harvey, *Brief History of Neoliberalism*; Dardot and Laval, *New Way of the World*; Krippner, *Capitalizing on Crisis*; Kotz, *Rise and Fall of Neoliberal Capitalism*; Davis, *Managed by Markets*; Stein, *Pivotal Decade*; Lazonick, "Innovative Business Models." Although they are not identical phenomena, financialization and neoliberalism overlapped historically and benefitted each other. For a link of the two, see Dumenil and Levy, "Neo-Liberal Dynamics." For an opposing argument, see Davis and Walk, "Distinguishing Financialization from Neoliberalism."

6. The oil industry view was that the "so-called Wall Street refiners [oil futures traders] modernized the oil trade." "Rising Trades in Oil Futures Alter Pricing," *Wall Street Journal*, February 29, 1984, 31; Sluyterman, *Keeping Competitive in Turbulent Markets*, 60.

7. On the fossil economy, see Malm, "Who Lit This Fire?" This article adds futures trading to the list of financial practices that became unexceptional in the twentieth century, such as stock investing and credit card debt. See Ott, *When Wall Street Met Main Street*; Hyman, *Debtor Nation*.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

particular symbolic heft. By helping to "solve" the energy crisis, they claimed, oil futures demonstrated the potential of financialization to restore prosperity after the doubts about growth, productivity, and profits that haunted the 1970s.

Much of the analysis in this article concerns what I call "neoliberal narratives," by which I mean the stories, explanations, framings, and justifications that circulated to establish the necessity and utility of oil futures trading as a market-based response to the energy crisis. In light of the deep suspicion that many Americans have historically harbored toward futures trading, the exchanges, the economists, and the pundits in favor of oil futures expended an enormous amount of energy explaining themselves in the popular and professional press, and elsewhere. Their narratives about the superiority of market mechanisms dovetailed with the larger narrative shift that Per Hansen has discerned in the decline of the Keynesian social state and the rise of neoliberalism. Whereas the grand narrative of Keynesianism imagined the capitalist market economy as an inherently unstable phenomenon in need of state intervention, the grand narrative of neoliberalism claimed that state intervention distorted the market and derailed its "natural" tendency toward efficiency and equilibrium.[8] The narratives about oil futures that are the subject of this article framed, aligned with, and advanced this larger shift to neoliberal financialization.[9] The institutional and discursive development of oil futures trading thus helps scholars to grasp more firmly the larger process by which the market came to be the "dominant social metaphor" of the late twentieth century.[10]

This article first contextualizes these developments by narrating the longer history of futures markets in the United States and their overlap with the processes of financialization that energy crisis discourse bolstered. It then explores the development of oil futures contracts in the 1970s and 1980s, before turning to an analysis of the legitimating narratives that accompanied their creation. As a whole, the article shows how public discourse about futures trading in general, and oil futures in particular, from traders, experts, and the media, helped to legitimize the financialization of U.S. energy policy. The much-celebrated oil futures contracts bolstered the emergent power of financial thinking as the United States entered a neoliberal era.

8. Hansen, "From Finance Capitalism to Financialization," 610.

9. Economists have also begun to consider the role of narratives in economic events. Shiller, "Narrative Economics."

10. Rodgers, *Age of Fracture*, 44.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

A Brief History of U.S. Futures Markets

A futures market is a centralized marketplace that facilitates the buying and selling of futures contracts. A futures contract is a legally binding commitment to receive or deliver a specific, standardized quantity of a commodity at a designated location and date in the future, at a prearranged price that is paid at the time of delivery.[11] In essence, participants agree to a transaction in the future at a price decided in the present that is based on how their economic needs relate to their expectations about future price movements. As Edward J. Swan puts it, all such contracts amount to the sale of a "promise" to buy and sell at a future date that enables participants to "hedge" against adverse price movements.[12] Speculators enable hedging to work by assuming the risks that hedgers seek to mitigate. Abstract speculation, however, drives futures markets. In 1985, only around 1 percent of New York Mercantile Exchange (NYMEX) futures transactions ended in delivery of a physical commodity; and in the twenty-first century, the percentage has become even more "negligible," according to market analyst Dominick Chirichela.[13] Most futures contracts are either settled in cash or liquidated by purchasing offsetting contracts.[14] As a result, every futures agreement has a winner and a loser, though small investors who speculate lose more money, and more often, than anyone else, and the exchanges win by selling exchange seats and charging a fee for every trade.[15]

Oil futures trading developed within a longer history of U.S. futures market expansion that began in the mid-nineteenth century Midwest, where futures contracts emerged to manage agricultural

11. This section draws on several books and articles from the period, including Schwager, *Complete Guide to the Futures Markets*, 1–12; Swan, *Building the Global Market*; Pindyck, "Dynamics of Commodity Spot and Futures Markets."

12. Swan, *Building the Global Market*, 17–18.

13. Chassard and Halliwell, *NYMEX Crude Oil Futures Market*, 6; Chirichela quoted in Mcmahon, "Financial Settlement vs. Physical Delivery," *Futures*, June 4, 2014, http://www.futuresmag.com/2006/07/24/financial-settlement-vs-physical-delivery.

14. For example, see Peck, "Economic Role of Traditional Commodity Futures Markets," 17–19.

15. Teweles and Jones, *Futures Game*, 308–324. Teweles and Jones recount several studies from the twentieth century about who wins and who loses on futures markets. The studies show that a majority of speculators lose money, and that new and nonprofessional speculators lose a disproportionate amount of the time. While the exchanges collect handsome sums from commissions, and a few professional speculators with resources make a profit, there is a sense in which futures markets rely on a constant supply of fresh and inexperienced traders to serve as the losers who keep the market moving. Teweles and Jones (319) conclude that the odds of a speculator making a profit on the futures market in a given year are 1 in 4.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

surplus and seasonality. Midwestern grain farmers suffered a constant cycle of boom and bust in which grain flooded urban markets immediately after harvest and decimated prices, only to be followed by scarcities and large price increases. American merchants adopted "to arrive" contracts—first developed in eighteenth-century Europe for the purchase of commodities arriving by ship—to circumvent this boom-and-bust cycle.[16] Spurred on by technological developments and the speculative markets for pork bellies and oats needed by the Union Army, the Chicago Board of Trade (CBOT) formulated rules for futures contracts in 1865.[17] Speculators hoping to profit from price fluctuations by trading contracts participated in U.S. futures markets from their inception, driving the proliferation of "corners" on the Chicago markets in the 1860s and 1870s.[18]

The first era of futures trading expansion continued throughout the major commercial centers of the United States in the late nineteenth and early twentieth centuries. The New York Gold Exchange developed gold futures contracts in the mid-1860s that were also plagued by cornered markets and price manipulation. The New York Cotton Exchange (NYCE) opened a cotton futures market in 1870; and the New York Butter and Cheese Exchange, the forerunner of the NYMEX, organized forward contracts in 1872. In 1874 the Chicago Produce Exchange, the predecessor to the Chicago Mercantile Exchange, formed to trade forward contracts for butter and eggs.[19] Coffee became a futures commodity in 1882, followed by sugar in 1916 and cocoa in 1925. Metals—copper, silver, zinc, and lead—started futures trading in the 1920s.[20] By the early twentieth century, prices in many commodities circulated without the actual commodity changing hands, creating opportunities for speculative profit and ruin.

As it became the "dominant mode of commodity exchange" (measured by volume) in the United States by 1890, futures trading faced fierce opposition from farmers and populist politicians who felt cheated by traders and other financial interests.[21] The United States responded by formulating intellectual and legal justifications for futures trading, most importantly in Oliver Wendell Holmes's majority decision in the 1905 Supreme Court case *Board of Trade v. Christie*. Holmes declared futures trading to be legal because speculation on

16. Markham, *History of Commodity Futures Trading*, 3.
17. Cronon, *Nature's Metropolis*, 120–124.
18. Ibid., 127–132.
19. Futures also traded successfully in St. Louis, Duluth, Kansas City, Omaha, San Francisco, Seattle, and Portland. Markham, *History of Commodity Futures Trading*, 6–8. On cotton, see Hieronymus, *Economics of Futures Trading*, 77.
20. Peck, "Economic Role of Traditional Commodity Futures Markets," 9.
21. Levy, *Freaks of Fortune*, 232.

the exchanges bore some relation to physical trade in the *possibility* of delivery and the hedging of real economic risks.[22] Holmes's decision also entrenched the power of incorporated exchanges by outlawing the "bucket shops" that had emerged to facilitate unofficial betting on the price movements of official exchanges.[23]

Attempts to limit futures trading persisted, however, leading Congress to create the Grain Futures Administration (GFA) in 1922 to oversee it.[24] It banned futures trading outside of federally recognized exchanges and vested the U.S. Department of Agriculture (USDA) with oversight through the GFA and the Grain Futures Commission. The GFA testified to the dominance of agricultural commodities in U.S. futures markets at this time, a reality also reflected in the Commodity Exchange Act (CEA), the 1936 update of the Grain Futures Act. The CEA banned options and created a framework for federally mandated position limits for speculators. Shortly thereafter, the USDA formed the Commodity Exchange Commission (CEC) to administer the Commodity Exchange Act.[25] The CEA and CEC remained the foundation of U.S. futures regulation until the early 1970s.

After years of limitation imposed by these New Deal era regulations and the economic stability ensured by the Bretton Woods agreement, U.S. futures trading entered a second era of expansion in the increasingly volatile economic context of the early 1970s, setting the stage for the financialization of oil futures. A number of events jolted the U.S. economy in this period, including the peaking of domestic oil production in 1970 and the 1973–1974 Organization of the Petroleum Exporting Countries (OPEC) oil embargo, which ignited inflation and uncertainty, and forced the United States to become a net importer for the first time since the nineteenth century. In 1971 the Bretton Woods system that had governed global economic affairs since 1944 dissolved after Richard Nixon announced that the United States would no longer honor its pledge to exchange gold for U.S. dollars held by foreign nations.[26] While pundits and the public fretted, the financial industry smelled opportunity. As journalist Bob Tamarkin noted, the new volatility "caught the scent of the boys at

22. Levy, *Freaks of Fortune*, 233–235.

23. Ibid, 241–242, 252; Markham, *History of Commodity Futures Trading*, 9–10.

24. Legislative History of the Grain Futures Act of 1922: P.L. 67-311 (Washington, DC: Kirkland & Ellis, 1922). U.S. Federal Legislative History Library.

25. U.S. Commodity Futures Trading Commission, *History of the CFTC*, https://www.cftc.gov/About/HistoryoftheCFTC/history_precftc.html.

26. Borstelmann, *The 1970s*, 54–55; Levitt, *Great Transformation to the Great Financialization*, 163. Others stress that Bretton Woods had been crumbling for years. See Garber, "Collapse of the Bretton Woods."

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

the [Chicago] Merc, who reacted to it like a pride of hungry lions on the prowl."[27] Leo Melamed, the head of the Chicago Mercantile Exchange, promptly paid Milton Friedman $5,000 to write a defense of financial futures for the post-Bretton Woods world. A few months later, Friedman declared the death of Bretton Woods and an opportunity for futures in a new age of exchange rate volatility.[28] The Chicago Merc introduced futures contracts in seven currencies by 1972.[29]

A new regulatory framework meant to address the multiplying economic crises of the 1970s further aided the expansion and intensification of U.S. futures trading. Amid rising food prices, rumors of Soviet grain price manipulation, and the development of "naked options" trading on commodity futures not covered by the CEA, the once-effective CEA suddenly seemed unable to regulate futures trading.[30] Congress responded by creating the independent Commodity Futures Trading Commission (CFTC) in 1974 to regulate the futures exchanges using the "least anticompetitive means" possible.[31] The new agency's existence outside of the Department of Agriculture signaled the declining importance of agricultural commodities in futures trading, as well as the growing influence of finance to the U.S. economy. The agricultural economist Gary Seevers served as one of the CFTC's first commissioners, having previously worked in President Gerald Ford's Council of Economic Advisors, alongside William Simon, Herbert Stein, and others committed to the neoliberal revision of U.S. economic life.[32]

The process of financialization also benefited from the changing global economic position of the United States. The OPEC oil embargo confirmed growing fears of national decline linked to the war in Vietnam by pushing the country into its worst recession since the Great Depression, undermining its global financial hegemony through the transfer of wealth from West to East (the "petrodollars" puzzle), and narrowing the productivity gap with Japan and West Germany. It exposed for all to see the extent of U.S. dependence on imported oil, and the new power of OPEC states to dictate higher prices. If, as Timothy Mitchell argues, "the economy as a coherent structure"

27. Tamarkin, *New Gatsbys*, 76–77.

28. Melamed, *Escape to the Futures*, 177. The Cato Institute republished the article that Friedman wrote for Melamed; see Friedman, "Need for Futures Markets in Currencies."

29. CME Group, "Timeline of CME Achievements," http://www.cmegroup.com/company/history/timeline-of-achievements.html.

30. Markham, *History of Commodity Futures Trading*, 56–57.

31. Ibid., 65, 71.

32. Ibid., 73. For his views on futures markets with minimal regulation, see Seevers, "Government Regulation and the Futures Markets."

emerged to replace a collapsing postwar social order, the economic crises rooted in the energy crisis created an opportunity to reconfigure the U.S. economy in the language and logic of finance.[33] As the United States lost control over the price of oil, the world's most important raw material, futures trading innovation emerged as an avenue for value generation. Futures markets offered, as anthropologist Caitlin Zaloom notes, contracts able to circulate as abstractions that "create a new source of value apart from the material goods that lend their value to the contract."[34] As the energy crisis made oil's future newly uncertain, the exchanges turned their attention to the possibility of profiting from the circulation of millions of "paper barrels."

Creating Oil Futures

The financial exchanges in the United States first introduced oil futures contracts in 1974, wasting no time in trying to capitalize on the destabilizing effects of the oil embargo. As the president of the Petroleum Associates of the NYCE told the *Wall Street Journal* in 1974, "futures trading doesn't work in a stable market," but it could help to "flatten out the peaks and the rises" in the unstable market that the oil embargo had created.[35] Thus, before the end of 1974, the NYCE started a crude oil futures contract and the New York Mercantile Exchange began trading futures for heating oil (gas-oil) and Bunker C oil.[36] Both contracts required delivery at the Dutch port city of Rotterdam, which had the largest crude oil storage and shipping infrastructure in the world at the time. Advocates pitched this first generation of contracts as a solution to the problems that the first oil embargo either created or intensified, including profitability under high oil prices, security in the face of energy scarcity, and enhancing competition in the oil industry.[37] On the first day of trading at the Cotton Exchange, however, only two lots changed hands, foreshadowing the eventual fate of this first generation of energy contracts.[38]

33. Mitchell, "Fixing the Economy," 88.

34. Zaloom, *Out of the Pits*, 19.

35. "Commodity Traders Greet a New Deal in the Futures Pack," *Wall Street Journal*, September 11, 1974, 17.

36. "Commodities Corner," *Barron's National Business and Financial Weekly*, September 16, 1974, 54.

37. For examples of these rationales, see the NYMEX ads: "You can protect yourself against volatile oil prices!," in the *Wall Street Journal,* July 17, 1979; and "An Open Market in Oil: To Restore Competition," in the *Washington Post*, March 24, 1974, C1.

38. Errera, "Exchanges and Their Contracts," 6; "Commodity Traders Greet a New Deal," *Wall Street Journal*; "Oct. 23 Trading Set on Fuel Oil Futures," *New York Times*, September 27, 1974, 59.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

By the early 1980s, the standard explanation for the initial failure of energy futures trading in the 1970s pointed to oil industry skepticism and insufficient volatility. Exchange officials and economists claimed that traditionalist oilmen doubted the utility of hedging their risks in the futures markets, as well as the intentions of traders with no history in the oil business, so they refused to participate in the market. These oil futures contracts also lacked volatility—another word for risk—sufficient to attract speculative interest.[39] The Nixon and Ford administrations had tinkered with but ultimately maintained oil price controls, particularly in the controversial Energy Policy and Conservation Act of 1975, which opted to phase out oil price controls much more slowly than the oil industry and the exchanges wanted.[40] The relative price stability that resulted, the argument went, prevented energy futures trading from thriving. Only ongoing supply crises or complete decontrol would foment enough price volatility to move oil companies to hedge and to make speculators salivate. Persistent criminal activity on the part of oil futures traders, including convictions for "rigging" and "manipulating" oil futures markets in the mid-1970s, also contributed to their initial failures.[41]

While the NYCE let its crude oil contract go dormant, a desperate NYMEX rewrote its contracts in hopes of reviving them. Sanctions by the CFTC and a 1976 default in its core potato futures contract had threatened the future of the NYMEX, which relied heavily on potato futures. Its new chairman, Michel Marks, desperately needed to find new commodities to trade. Believing strongly that oil could work, Marks and the NYMEX enlisted the promarket energy economist Arnold Safer to help them rewrite their contracts.[42] They changed the grade of heating oil to be traded and moved delivery from Rotterdam to New York City. Two new contracts began trading in 1978; one quickly failed, but good timing eventually turned the other—for No. 2 heating oil—into a "dramatic success story."[43] It coincided with the renewed volatility and uncertainty stirred up by the Iranian Revolution and subsequent oil crisis in 1978 and 1979, as well as the outbreak of

39. Clubley, *Trading in Oil Futures*, 36–37; Razavi and Fesharaki, *Fundamentals of Petroleum Trading*, 7.

40. Gerald R. Ford, "Statement on the Energy Policy and Conservation Act," December 22, 1975, online by Gerhard Peters and John T. Woolley, *American Presidency Project*, http://www.presidency.ucsb.edu/ws/?pid=5452; "House Democrats Lost Energy Test," *New York Times*, April 14, 1976, 46; "Oil Men Want Zarb Out," *Washington Post*, April 29, 1976, DC15.

41. "Nine Are Charged with Tax Evasion in Futures Trades," *Wall Street Journal*, April 14, 1978, 32.

42. Goodman, *Asylum,* 54–56, 68–74; "Treat's Energy Expertise is Base of Plans at New York Mercantile Exchange," *New York Times*, May 18, 1982, 46.

43. Errera, "Exchanges and Their Contracts," 11.

the Iran-Iraq War in September 1980.[44] By 1981 open interest for NYMEX's No. 2 heating oil contract hit 17,000, and was well on its way to becoming "an industry icon."[45] Emboldened, other exchanges followed suit: the International Petroleum Exchange of London and the CBOT developed petroleum futures contracts between 1981 and 1983 in gas-oil, gasoline, and crude oil.[46]

These efforts to develop oil futures reflected the ongoing financialization of the U.S. economy in the 1970s. Derivatives trading proliferated in this period, particularly in futures, marking a move from growth to risk as the locus of profit in the economy.[47] Exchanges introduced futures contracts for U.S. Treasury bills and bonds, as well as "cash settlement" futures (1975), which did not involve physical commodities by design. The latter included Eurodollars, interest rates, and stock index futures by 1982. Such innovations departed radically from early twentieth-century justification of futures contracts; namely, that participants could be said to be "contemplating delivery."[48] In each case, advocates justified new kinds of derivatives as a way to achieve greater economic security in an increasingly uncertain and volatile global economy by managing risk, a line of argument that would also be applied to oil futures contracts.

In search of solutions to the trenchant economic impasses of the 1970s, the United States government actively supported the process of financialization by encouraging the expansion of futures trading.[49] It is well known that the Reagan administration favored economic management by free market, but the Ford and Carter administrations also viewed futures markets as effective tools to enhance competitiveness and to reduce inflation. Both supported the decontrol of oil prices in principle, saying that higher prices would stimulate energy conservation and innovation, though both settled for phased-in decontrol in the face of congressional opposition and concerns about the short-term economic consequences of immediate decontrol. Ford's Council of Economic Advisors consisted of neoliberal economists and traders dedicated to free markets, including William Simon and Alan Greenspan, who believed strongly in such deregulation. The Carter administration, for its part, deregulated several industries and

44. Goodman, *Asylum*, 87–88.

45. "Commodities: The Rising Interest in Heating Oil," *New York Times*, June 1, 1981, D9. See also "An Industry Icon Is Going Away: No. 2 Oil Heating Oil Contract Will Breathe Its Last," *The Barrel,* July 29, 2011, https://blogs.platts.com/2011/07/29/an_industry_ico/.

46. Errera, "Exchanges and Their Contracts," 11.

47. Martin, *Empire of Indifference*, 33.

48. Levy, *Freaks of Fortune*, 233.

49. On the economic context of the 1970s, see Rodgers, *Age of Fracture*, 41–76.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

supported the development of futures markets for their "pro-competitive effect."[50] Moreover, it was Carter's Council on Wage and Price Stability that supported the CFTC's three-year pilot program to reintroduce options trading in the United States, which led to the eventual relegalization of options on futures for the first time since 1936.[51]

In this profinancial context, NYMEX continued to expand its energy futures options amid economic volatility. In 1981—as the Reagan administration finally decontrolled oil prices and U.S. oil consumption fell for a third year in a row—the exchange introduced a contract in gasoline futures. By 1982 an oil glut flooded global oil markets and prices began to decline.[52] Crucially, the glut was interpreted *not* as a permanent return to lower prices but rather as confirmation of oil's volatile future. In response to this long-awaited volatility, NYMEX introduced a crude oil future contract in 1983 that quickly became the most valuable commodity futures contract in the world. In just four years, the daily volume of NYMEX crude oil futures trading jumped from 1,470 to nearly 950,000 contracts.[53] NYMEX followed its success with a 1986 options contract on crude futures that became the most successful options contract ever introduced by a U.S. exchange.[54] These decisions helped NYMEX, which had faced "extinction" only a decade earlier, to become the nation's third-largest exchange. Indeed, NYMEX's official history frames the move from potato futures, where 80 percent of its members traded in the 1970s, to currencies and especially energy futures as its saving grace.[55] It began to call itself "the energy exchange."[56]

Throughout this process, agricultural products lost their share of futures trading volumes to financial and energy contracts. NYMEX's move away from potato futures and toward energy and strategic metals emblemized the general shift of U.S. exchanges away from

50. Memo from Barry P. Bosworth to Stu Eizenstat and Jim McIntyre, "The Administration's Position on the Reauthorization of the Commodity Futures Trading Commission," Council of Economic Advisors, Charles L. Schultze, Council on Wage and Price Stability (COWPS) Files, Folder 4, COWPS 8, Box 101, Jimmy Carter Presidential Library and Museum, Atlanta, GA.

51. COWPS press release, June 6, 1977, Council of Economic Advisors, Charles L. Schultze, COWPS Files, Folder 3, COWPS 15, Box 102, Jimmy Carter Library.

52. "After the Oil Glut," *New York Times*, November 6, 1982, 1, 27.

53. "Crude Oil Futures Volume Graph 03/31/83 to 03/31/87," *Bloomberg*, February 19, 2019.

54. Lower, "Regulation of Commodity Options," 1098; U.S. Commodity Futures Trading Commission, "CFTC History in the 1980s," http://www.cftc.gov/About/HistoryoftheCFTC/history_1980s.

55. Vitiello, *Trading Through Time*, 112, 118, 134.

56. See the advertisement, "NYMEX–The Energy Exchange," in *The Economist* 299, no. 7449 (June 7, 1986): 15.

their historic reliance on agriculture and toward geopolitically strategic commodities subject to vastly different temporalities and variables, as well as financial instruments with few ties to nature or the world of material commodities.[57] The stakes of futures trading had never been higher given, for instance, the preceding decade's intense debates about oil supplies and prices. Nevertheless, the profit potential inherent in energy and financial futures drove the exchanges and their advocates to formulate legitimizing narratives that would link the expansion of futures trading, a key ingredient in the larger process of financialization, to the health and future of the U.S. economy and nation.

Legitimizing Narratives: Reason, the Primacy of Price, Power

In light of historic and enduring suspicions about stock and futures markets, the U.S. exchanges and their advocates sought to justify their rapid expansion in the 1970s to industry, government, would-be traders, and the public at large. When a 1978 public survey conducted by the New York Stock Exchange found that risk aversion prevented many Americans from participating in the stock market, NYSE chairman William Batten called for public education to avoid becoming "a nation of economically timid souls." [58] Futures trading advocates, who often attributed opposition to their cause to ignorance, responded to public, government, and industry skepticism by explaining the socioeconomic value and legality of trading futures contracts in currencies, bonds, and barrels of oil.[59] Joseph M. Burns of the CFTC, writing for the American Enterprise Institute, hoped that public acceptance of futures markets would usher in a "new economic order […that] would spell gains in the vitality and dynamism of our free enterprise system."[60] Thus, throughout the 1970s and 1980s, the exchanges, economists, and other advocates circulated legitimizing narratives about futures trading in general, and oil futures in particular, that I will analyze under three broad themes: reason, the primacy of price, and power. These narratives offer a window into the logic of neoliberal financialization at its moment of ascendency.

57. Vitiello, *Trading Through Time*.

58. "Public Attitudes Toward Investing: A Report by the New York Stock Exchange Based on a Nationwide Survey, June 1978," Office of Special Counsellor on Inflation Robert Strauss Business Community Files, folder "New York Stock Exchange–Capital Market Study [O/A 6738], Box 2, Jimmy Carter Library. See also Ott, *When Wall Street Met Main Street*.

59. On lobbying lawmakers, see Melamed, *Escape to the Futures*, 262–276.

60. Burns, *Treatise on Markets*, 117.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

Reason

The first narrative theme surrounding futures markets in the 1970s and 1980s cast them as a natural and rational response to the risks inherent in economic activity: the latest development in a long history of economic progress. It relied on evolutionary narratives of successive degrees of complexity that located the origins of futures trading as far back in time as possible. As the standard college textbook and how-to guide for new futures traders noted, "the roots of futures trading are as deep as commerce itself" insofar as commerce has always included some "concept of futurity in contractual arrangements."[61] Others used this broadly shared characteristic to locate the origin of futures markets in ancient India, Greece, and Rome, as well as in twelfth-century France and England.[62] The Chicago Board of Trade's popular *Commodity Trading Manual* insisted that the long dead traders and merchants of the ancient and medieval worlds "faced the same price risk and the same need for timely and transparent market information that today's business must confront."[63] All such accounts figured speculative risk as a trans-historical phenomenon inherent in human economic activity. If ancient Greeks used a form of futures trading to hedge their economic risks, then why should modern Americans not do the same? What they ignored, however, was that their ancient and medieval examples of contractual futurity ended in the trade and delivery of physical goods; a connection to material reality that by the 1980s was becoming increasingly thin.

Advocates of oil futures contracts in particular framed them as a rational adaptation to the new risks and uncertainties in the global oil industry. According to this narrative, OPEC's decision to wield the "oil weapon" had inaugurated an era of permanent crisis that would have to be managed by financial markets. MIT-trained economist Philip Verleger Jr., a frequently cited expert, called the adoption of crude oil futures a "natural response" to the transfer of control over oil resources from Western multinational corporations to the non-Western governments of producing nations.[64] While critics claimed that futures markets created instability by encouraging speculation, Verleger and others insisted that they were merely a *response* to volatility rooted in foreign control over oil prices.[65] For instance,

61. Hieronymus, *Economics of Futures Trading*, 71.

62. For example, see Duffie, *Futures Markets*, 3; Goss and Yamey, "Introduction," 1–2; Teweles and Jones, *Futures Game*, 6–8; Herbst, *Commodity Futures*, 2.

63. Rose, *Commodity Trading Manual*, 1–2.

64. Verleger, "Potential Impacts of Trading in Oil Futures," 120.

65. "The Futures Game: Selling the Public Short," *Washington Post*, March 11, 1973, B1.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

oil companies, facing a potential crisis of profitability in the 1980s, needed new hedging tools to manage their unprecedented exposure to price volatility in a de-integrated and competitive global economy. The problem of uncontrolled oil prices, which Nixon Treasury Secretary George P. Shultz had once feared would raise "literally unmanageable" issues, could now be managed by hedging risks with futures.[66] The chance to claw back some of those profits, moreover, could also address America's troubling balance of payments problems.

Narratives of oil futures as rational and necessary adaptations leaned heavily on a framing of recent U.S. economic history as one of decline from mid-century stability to permanent volatility. They reimagined the world before 1973 as a place where oil prices and supplies had been reliably stable, obviating the need for futures markets. When Western oil companies controlled supplies, production, and pricing, the story went, the world had had a sufficiently steady and stable supply of inexpensive oil to power global economic growth. For instance, as global oil prices collapsed in 1986, a NYMEX trading manual aimed at refiners and businesses keen to hedge their price risk attributed the postwar economic boom to the fact that most oil "flowed through the integrated channels of the major oil companies."[67]

This was a story that dutifully ignored the long history of boom-and-bust volatility in the oil industry that had driven oilmen to demand price controls and other forms of regulation earlier in the century. Instead, it blamed OPEC for disrupting the tranquility of Western corporate control over oil and for generating prolonged instability by attempting to maintain higher prices amid surpluses in the 1980s.[68] The result, NYMEX claimed, was that "the only certainty in today's market is uncertainty…risk management is, therefore, the key to long-term performance."[69] A study on oil price forecasting for investors and policymakers coauthored by Cambridge Energy Associates and Arthur Anderson & Co. agreed: "Uncertainty—and volatility and turbulence—are inherent in the future of oil." In this climate, firms and individual investors would have to embrace flexibility and adaptability in order to "turn uncertainty into opportunity."[70] By destroying the imperialist system of oil extraction, production, and circulation, OPEC stood accused of destroying oil price stability

66. Quoted in Pollack, "Economic Consequences of the Energy Crisis," 452.
67. New York Mercantile Exchange, *NYMEX Energy Hedging Manual*, 4.
68. Ibid., 5; Danielson, "Prospects for Crude-Oil Futures," 122.
69. McFadden, "Preface," in *NYMEX Energy Hedging Manual*, n.p.
70. Cambridge Energy Associates and Arthur Anderson & Co., *Future of Oil Prices*, vi. John Treat of NYMEX predicted that this situation would persist for some time. Treat, "Future of Futures," 335.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

forever, rendering free market speculation necessary to cope with permanent crisis.

Despite their commiseration, the U.S. exchanges and their investors knew that oil futures trading needed volatility.[71] Price movements, they claimed, had to be frequent, multidirectional, and unpredictable to make hedging rational and speculation possible.[72] However, if futures markets profited from degrees of volatility and risk that many Americans abhorred and that even the exchanges felt compelled to justify, what public good could oil futures trading offer beyond enriching traders and their firms?

Legitimizing narratives for oil futures linked two purported benefits of futures markets to the larger discourse of rationality: hedging and price discovery.[73] The hedging function was the most widely advertised social benefit of futures trading in oil or any other commodity.[74] By allowing large producers and consumers of oil to purchase contracts for oil to be delivered in the future at a guaranteed price in the present, the futures exchanges allowed those businesses to plan their expenses and manage the risk posed by the possibility of deleterious price movements in a volatile commodity. An airline could plan its fuel expenses months into the future without having to worry that prices would go up unexpectedly, though in doing so it also risked being unable to capitalize fully on a price decline. NYMEX frequently advertised its contracts as hedging tools while blaming "market forces" for generating the risks that it now offered to help manage.[75] Indeed, given the dogma of inevitable volatility, NYMEX often opined that to choose *not* to hedge was a greater gamble than trading futures.

To posit hedging as a beneficial service of futures markets also required a defense of speculation, given the inextricable links between the two: there must be a willing speculator to assume the risks that the hedger wants to mitigate. Given longstanding suspicions of stock

71. Goss and Yamey, "Introduction," 44–47.

72. Errera, "Exchanges and Their Contracts," 5; Clubley, *Trading in Oil Futures*, 36–37.

73. Such arguments popularized the ideas of economist Holbrook Working, one of the most influential theorists of futures trading. For more on Working's explanation of hedging and speculation, see Razavi and Fereidun, *Fundamentals of Petroleum Trading*, 75–76.

74. Prast and Lax, *Oil-Futures Markets*, 19–21; Razavi and Fesharaki, *Fundamentals of Petroleum Trading*, 71–73; Friedman, "Need for Futures Markets in Currencies," 637. One dissenting voice was Williams, *Economic Function of Futures Markets*.

75. See the NYMEX advertisement, "Options for a Volatile Market–Crude Comes of Age," *Barron's National Business and Financial Weekly*, September 1, 1986, 42–43.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

and futures speculation in the United States, which popular memory linked to the Great Depression, advocates took care to differentiate between gambling, which served no productive social purpose, and the role of speculators, which they claimed ensured the smooth functioning of markets.

The difference between gambling and "legitimate" speculation lay in the source of the risks that the speculator assumed and the place of reason in the speculative activity. As one popular investment guide asserted, legitimate speculation, unlike gambling, dealt with "risks that are necessarily present in the process of marketing goods and services" in capitalist societies.[76] In the case of oil, a refiner risked exposure to fluctuating oil prices. By agreeing to assume some of the refiner's price risk, speculators enhanced the liquidity of the oil market and enabled the market to perform its social function. Moreover, by providing liquidity, according to an American Enterprise Institute treatise, speculators "enhance[d] the efficiency of markets for future transactions."[77] This argument echoed the 1905 Supreme Court decision in favor of futures markets as a legitimate risk management institution. Gambling, in this framework, was an irrational activity inimical to futures markets' creation of "anticipatory prices that reliably guide the optimal allocation of resources to the production and consumption of commodities."[78] Exchanges and experts therefore valorized rational speculation based on real economic risks that they claimed to be a permanent feature of the future; market speculation emerged as the only reliable guide to the allocation of resources according to prices.[79]

The defense of speculation as rational and necessary also invoked price discovery, the second purported benefit of futures markets. Futures markets, according to a report from the Federal Reserve Board and the CFTC, were useful financial technologies because they "discovered prices" by providing incentives, namely risk avoidance for hedgers and profit for speculators, to gather information in a centralized marketplace. In order to define their position in the market, participants collect and assess information to predict how prices might move in the future.[80] The constant buying and selling of contracts at different prices constituted a process of information collection,

76. Teweles and Jones, *Futures Game*, 5. See also Teweles, Harlow, and Stone, *Commodity Futures Trading Guide*, 4–6.

77. Burns, *Treatise on Markets,* 45.

78. Peck, "Economic Role of Traditional Commodity Futures Markets," 75.

79. Razavi and Fesharaki, *Fundamentals of Petroleum Trading*, 73–78.

80. Board of Governors of the Federal Reserve System et al., *Study of the Effects on the Economy of Trading in Futures and Options*, 11–12; see also Friedman, Harrison, and Salmon, "Informational Role of Futures Markets."

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

processing, and dissemination that purported to guide the "allocation of real resources via production, inventory, or other decisions."[81] Thus, although NYMEX preferred to emphasize the more sober hedging function in advertisements aimed at industry players, economists praised futures speculation as a boon to "the informational content of prices."[82] By gathering information to form rational price expectations, they argued, futures markets enabled firms to plan production, thereby stabilizing fluctuations of production and consumption over time. In this framework, futures markets turned intuition (speculative expectations about an unknowable future) into fact (the price of oil). Price, then, was far more a product of anticipation than a reflection of present supply-and-demand factors, and speculation on futures markets was essential in "discovering" it.

The notion that futures markets "discovered" the real prices of commodities, and that those prices were inherently anticipatory, paralleled the ascendant neoliberal conception of markets as superior information processors that attracted so many supporters in the 1970s who were looking for a way out of the decade's economic impasses.[83] Neoliberal epistemology tends to emphasize the complexity and inscrutability of nature as an argument for the free market and against planning.[84] No single government, individual, or company can efficiently synthesize enough information to predict and plan for the future without the help of markets because the degree of complexity is too high. There are too many factors to be considered for such centralized planning to work.[85] Instead, neoliberalism imagines markets as self-organizing systems that thrive on chaos to produce value through the movement of prices in markets. The paths of those movements, moreover, are the only reliable guide to planning for the future, which must constantly be readjusted in light of new information.

Energy crisis discourse was a key arena to advance this high-efficiency, information-processing conception of the market. The crisis bred a sense of urgency about managing the now uncertain future by forecasting possible futures and planning potential responses to them. Would oil be abundant or scarce, cheap or expensive, benign or corrupting to social organization and values? New energy technologies, conservation measures, and hopes for a low-energy transition all depended on forecasts to motivate change in the present.

81. Chassard and Halliwell, *NYMEX Crude Oil Futures Market*, 9.

82. Peck, "Economic Role of Traditional Commodity Futures Markets," 74; see also Adelman, *Genie Out of the Bottle*, 193, 328.

83. Mirowski, "Defining Neoliberalism," 435–436; Rodgers, *Age of Fracture*, 41–76.

84. Cooper, *Life as Surplus*, 43–45.

85. Hayek, "Use of Knowledge in Society."

Neoliberals, however, rejected calls for scenario-based planning by denying the very possibility of collective planning. Only the market, comprised of millions of self-interested individuals, could manifest the future in the present by processing information. It was the only viable planning tool, given the chaotic and complex nature of reality and the inevitability of crises.

Milton Friedman, in many ways the public face of neoliberalism in the 1970s and 1980s, often criticized centralized projections and planning as distortions of market pricing. As he declared in 1978, "the crystal ball is inevitably cloudy, that…is the nature of the world we live in." Predictions about the energy future could never be right. What U.S. energy policy needed instead was "an adjustment mechanism that will enable us to adapt to what happens as it develops": the price mechanism of free markets.[86] Friedman argued that accurate prices only emerge as millions of people make "their best guesses about the future," which are continually adjusted as the market reacts. He insisted that the information content of prices was far more reliable than reserve estimates, which he claimed to "have no confidence in."[87] OPEC's greatest sin, according to Friedman, had been to artificially inflate prices by fiat. The sin of the U.S. government in the 1970s, he thought, had been relying on reserve estimates and projections based on unknowable dynamics of supply and demand. Oil prices had to return to free market dynamics, not the political aims of OPEC or the price and conservation targets of the U.S. government. In 1983, Friedman predicted in *Newsweek* that free market pricing would end the energy crisis and reveal a lower price for oil.[88] His assumption that scarcity is an economic rather than a geological and biological concept became the dominate lens through which energy was understood as oil futures trading took off.

Exchanges and economists in the United States posited futures markets as the most rational response to a volatile era in the global economy, which actually enabled the exercise of reason in hedging and price discovery, despite all appearances. Economists insisted that they came closer to "perfect competition" than any other capitalist institution, and so could be trusted to reveal the true value of commodities by compiling and disseminating all information relevant to its price. As one study noted, "There are many buyers and sellers of a homogenous commodity in a buzzing hive of information,

86. Friedman, "Energy Crisis: A Humane Solution," 3, February 10, 1978, Collected Works of Milton Friedman Project records, Hoover Institution Archives, https://miltonfriedman.hoover.org/objects/57283.

87. Ibid., 3–4.

88. Milton Friedman, "What Price Oil," *Newsweek*, March 21, 1983, 62.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

their transactions essentially unregulated except to ensure that no single participant amasses enough market power to manipulate prices."[89] According to another economist, futures markets "closely approximate the conditions necessary for perfect competition" insofar as their buyers and sellers conduct "arms-length" transactions of a homogenous commodity in "a well-regulated arena."[90] By flattening and standardizing as many elements as possible—delivery location, contract lengths, and commodity grades—the futures market created a space of pure expectation in which no allegedly extraneous material or logistical factor could shape the declaration of price other than expectation based on a specified set of dynamics. As discussed below, the notion that futures markets facilitated impersonal, competitive transactions drew its rhetorical strength from markets' opposition to OPEC, which was taken to be the ultimate example of secretive and anticompetitive pricing; that is, of transactions conducted for political gain. By continuously broadcasting prices, futures markets were purported to enhance competition by allowing all market participants to be as informed as possible so as to make rational decisions.[91]

The Primacy of Price

Support for futures markets as instruments of price discovery dovetailed with an emerging set of narratives about the energy crisis and oil futures markets that posited the primacy of price in energy policy. Advanced mostly by economists who rejected environmentalist arguments for planning to avert looming limits to growth, these narratives posited that price mattered more than scarcity in understanding why the energy crisis had happened and how the United States could move beyond it. They reframed the energy crisis as a financial crisis that could be overcome by the right financial policies and practices.

One of the dominant narratives of the energy crisis in the early 1970s said that it was a crisis of geological scarcity caused by the rapacious consumption and wastefulness inherent in U.S. capitalism. Gasoline shortages and skyrocketing prices signaled the fact that the pursuit of mass production and consumption in the twentieth century had begun to surpass the resource limits of the earth. For more than twenty years, petroleum geologist M. King Hubbert had been predicting peak oil production, and in 1972 the Club of Rome's sensational *Limits to Growth* report predicted devastating resource scarcities.[92] With these

89. Jickling, "Futures Markets and the Price of Oil," 8.
90. Errera, "Exchanges and Their Contracts," 19.
91. Burns, *Treatise on Markets*, 74–75, 79.
92. Hubbert, *Nuclear Energy and the Fossil Fuels*; Hubbert, "Energy Resources of the Earth"; Meadows et al., *Limits to Growth*.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

framing discourses in mind, media reports and expert commentary chastised the United States for its "astonishingly profligate" use of the earth's resources. As the *New York Times* declared in December 1973, the message of environmentalists was being "carried by a powerful medium: soaring energy prices."[93]

The financial paradigm for the energy crisis differed sharply. Its advocates argued that energy prices confirmed the message of economists, not environmentalists. Rather than signaling absolute scarcities, high oil prices were the consequence of failing to rely on market pricing to allocate supplies and stimulate new production.[94] Existing scarcities were unnecessary, the result of domestic prices that had been kept artificially low, encouraging overconsumption, underproduction, and dependence on imported oil. The federal government had failed to handle what was essentially "an acute problem of financial management."[95] Had U.S. oil production been subject to free markets rather than price controls, the argument went, there would not have been a crisis because scarcity cannot exist in a free market where prices rise to eliminate it and fall in response to surplus.[96] This was not a new argument, but it gained influence as a justification for decontrolling oil and for using futures markets to shape oil prices.[97] The "crisis" in the energy crisis had not been exceeding the limits of the earth's resources; it had been ignoring the laws of the markets, which eventually resulted in losing control over the price of oil to OPEC as imports continued to rise.[98] It implied, as discussed below, that avoiding future crises required reliance on markets to bring influence over prices back to the United States.

As the decade wore on, the shadow of scarcity also gave way to the problem of price in debates about the effect of the energy crisis on the geopolitical power of the United States. The high price of oil had certainly been a factor from the start in concerns about inflation, recycling petrodollars, and a defeatist national mood, but it was often shadowed by the fear that oil supplies could be cut off or that reserves

93. "The End of the Cowboy Economy," *New York Times,* December 9, 1973.

94. Singer, "World Demand for Oil," 339.

95. Samuel Pizer, "Financial Flow Aspects of the Energy Problem," January 11, 1974, "IMF Committee of 20: Meeting, Rome," January 17–18, 1974 (2), Box B67, Arthur Burns Papers, 1969–1978, Gerald R. Ford Presidential Library and Museum, Ann Arbor, MI.

96. "The Energy Crisis in Perspective," *Wall Street Journal*, November 30, 1973, 8.

97. Friedman and Friedman, *Free to Choose*, 219; The Ford Administration largely took this view of the energy crisis as well. "A National Energy Policy Philosophy," Folder 13.7, Box 13, Series IIIA, William E. Simon Papers, Gerald R. Ford Library.

98. Blair, *Control of Oil*; Clubley, *Trading in Oil Futures*, 7.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

could continue to decline in accordance with the limits to growth, as in a 1979 CIA report concerned with "the limited nature of world oil resources."[99] Over time, however, government energy experts began to worry more about the effect of high prices on U.S. power than absolute scarcities, while some analysts warned that persistently high oil prices could damage key Cold War alliances with other oil-consuming nations.[100] One congressional report considered an energy futures market to be an effective tool to provide short-term price stability in case of minor supply disruptions, though the government would have to look elsewhere to overcome dependence on imported oil.[101]

The narrative of price gained strength in the early 1980s as oil gluts buried popular fears of scarcity. In February 1983 the state-owned oil companies of Britain and Mexico cut their posted prices below OPEC's price, facilitating the oil price decline that had begun in 1981 and continued to a final plunge in 1986. As the glut swelled, economic recovery seemed to be on the horizon, and it became much easier to dismiss the previous decade's concern with scarcity, conservation, and alternative energy, and to argue instead that prices should fall as surpluses flooded markets.[102] *Business Week* dismissed concerns that recovery meant a return to high consumption when it proclaimed: "Conservation has been institutionalized: people expect to drive their small, fuel-efficient cars for a long time.… Home insulation is not going to be ripped out once it is installed."[103] Environmentalists and policymakers, it implied, should not fear a return to profligate consumption as oil prices fell. As crude oil futures began trading on NYMEX in March 1983, CBOT economist David J. Hirschfeld said that they heralded the potential "birth of a revolution in the petroleum industry, akin to that which has been witnessed in the financial community."[104] Financialization, it was hoped, would remake the oil economy in the interests of a U.S. economy and state, presumed to need plentiful *and* cheap oil.

The emerging primacy of price provided narrative support for new oil futures markets, which their advocates claimed could solve the

99. *RAC Project Number: NLC-15-90-8-15-2*, iii, Jimmy Carter Library.

100. Foreign Affairs and National Defense Division et al., "Western Vulnerability," vi; Gisselquist, *Oil Prices and Trade Deficits*.

101. Foreign Affairs and National Defense et al., "Western Vulnerability," 119–122.

102. "Special Report: The Collapse of World Oil Prices," *Business Week,* March 7, 1983, 92–94; "The Economic Impact of Cheaper Oil," *Business Week*, March 7, 1983, 95–99.

103. "Energy-Guzzling: Most Consumers Are Cured," *Business Week*, April 4, 1983, 16.

104. Hirschfeld, "Fundamental Overview of the Energy Futures Markets," 75.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

energy crisis through their effect on prices. A key moment in this narrative occurred in the 1978 hearings of the Energy Subcommittee of the Congressional Joint Economic Committee, which explored the question of the world's future oil supply from an intentionally "optimistic" perspective. In his opening statement, the chairman of the Subcommittee on Energy, Democratic Senator Edward Kennedy, noted that conservation remained important, but that "the greatest problem is rapidly rising prices," which caused inflation, hurt the U.S. dollar, and prolonged the global recession.[105] The testimonies of energy economist Peter Odell and astrophysicist Thomas Gold cast doubt on the reality of oil scarcity, while the economist and NYMEX consultant Arnold E. Safer argued for privileging oil prices over politics.[106] Safer argued in a book published the next year (with an endorsement from Kennedy) that the scarcity paradigm acquiesced to OPEC's higher prices by rendering them inevitable. Indeed, many who supported an energy transition did applaud higher oil prices as incentive to conserve oil and develop alternative energies. Safer insisted, however, that "the scarcity thesis" was a self-fulfilling prophecy; it was "like a receding horizon: no matter how rapidly you move toward it, it is still the same distance away."[107] That is, accepting scarcity in the present only led to more in the future.

Safer advocated the establishment of an oil futures market to make the oil-pricing process more competitive as a way to undermine OPEC.[108] Lower prices, achieved through U.S. markets, would boost the confidence of its main trading partners and allies, who could not rely on U.S. economic stability as long as OPEC decided how much oil was to cost.[109] Rather than OPEC's "mercantilist conception of oil pricing" in which prices are negotiated based on perceptions of the fair price that are filtered through political interests, the neutral competition of the free market would decide.[110] Jimmy Carter's emphasis on limits and conservation merely capitulated to OPEC, whereas futures markets could provide a way to reassert the waning economic power and global leadership of the United States. Safer concluded his book on oil policy: "We have been confused and fearful for five years; it is time for bolder action."[111] Such boldness pervaded coverage of

105. U.S. Congress, Joint Economic Committee, *Energy in the Eighties*. Regarding the optimistic approach to oil supplies, see "Opening Statement of Senator Kennedy, Chairman," ibid., 1.
106. "Statement of Thomas Gold," ibid., 34.
107. Safer, *International Oil Policy*, 1.
108. U.S. Congress, Joint Economic Committee, *Energy in the Eighties*, 8–11.
109. Safer, *International Oil Policy*, 57–61.
110. Ibid, 87.
111. Ibid., 121.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

NYMEX crude oil futures trading in 1983, which clearly revealed the geopolitical and economic roles for futures trading: to rejuvenate U.S. markets and undercut OPEC, the much-maligned threat to U.S. economic freedom that had plagued the national consciousness for more than a decade.

Power

The third legitimizing narrative for oil futures markets revolved around the restoration of U.S. geopolitical power. The energy crisis had threatened U.S. hegemony by worsening inflation and causing the unprecedented outflow of billions of U.S. dollars to OPEC nations. The restoration of U.S. hegemony, analysts understood, depended on "recycling" these petrodollars back into the U.S. economy to mitigate the balance of payments crisis that they had created, though they fiercely debated how that process would work.[112] It also depended on lowering oil prices to stem the tide at the source, which meant finding a way to undercut OPEC's efforts to maintain higher posted prices.

After the establishment of crude oil futures contracts on the NYMEX in 1983, analysts praised oil futures as a finance weapon poised to disrupt OPEC's price-setting power, which it had sought to use to achieve its own geopolitical ends.[113] I use the term "finance weapon" to mirror the language of an "oil weapon" that the U.S. government, analysts, and media used to describe OPEC's actions in the 1970s. It expresses the hegemonic dynamic of financialization and oil futures as attempts to eradicate the threat that the energy crisis posed to the U.S. economic empire. Financial institutions, traders, and the media imagined oil futures markets as a way to take pricing power back from OPEC, which they narrated in terms of futures trading as being a more democratic and fair form of price discovery than price setting. Crucially, this narrative *assumed* that the futures market price would be lower than OPEC's price; an assumption rooted in an imaginary of abundance and faith in the rationality of speculation to recognize it. Rather than use crisis to reduce dependence on foreign oil through conservation and alternative energies, the finance weapon mobilized the energy crisis to argue for the reassertion of U.S. geopolitical dominance through the financial technology of futures markets.

Analysts worried constantly about the implications of U.S. dependence on OPEC oil after the embargo demonstrated the cartel's power

112. Walter J. Levy, "Oil and the Decline of the West," *Foreign Affairs* 58, no. 005 (Summer 1980): 1001.

113. "Wresting Control from OPEC: Futures Trading on the New York Mercantile Exchange Has Rewritten the Rules on Oil Pricing," *Washington Post*, October 29, 1989, H1.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

to use oil supplies and prices to achieve political goals.[114] They knew that oil gluts could hurt OPEC's ability to set prices, but how to capitalize on global oil surpluses was the domain of the financial exchanges.[115] The exchanges and the financial industry, for their parts, framed futures trading as a way to undercut OPEC by stressing their more open and democratic nature. If, as the *Oil and Gas Journal* claimed in 1981, "futures prices are an open means of ascertaining free market values," then the creation of oil futures contracts would bring market prices to oil, which had always been decided by vertically integrated oil companies or biased "oil sheiks."[116] When NYMEX's crude oil contract took off, commentators openly speculated that this new form of transparent and rational pricing threatened OPEC's much-loathed reign. *The American Banker* called crude oil futures "the ultimate threat to OPEC" because they were offering free market "public pricing" rather than allowing a cartel to charge "whatever they could get" for their oil.[117] According to one futures trader, the open outcry system, by which traders negotiated deals verbally on the floor of the exchange, "is the prime example of a free market where the sale goes to the highest bidder, and the product moves from the lowest seller," suggesting a sense of rationality and neutrality to market prices that ignored the wants and whims of powerful cartels.[118]

Even so, how were futures markets supposed to redirect power over oil pricing away from OPEC? In the late 1970s, Saudi Arabian light crude served as the benchmark for crude oil prices, having dethroned Texas crude in the 1960s. This meant that OPEC's posted price informed the price for oil sold on contract, which represented the majority of oil sales until the 1980s, and on the spot markets, which referred to the posted price for its transactions.[119] However, NYMEX used American crude oil, West Texas Intermediate (WTI), as the basis for its crude futures contract. If its futures contract could

114. "Why We Must Act Now," *Newsweek*, July 16, 1979, 23; Pollack, "Economic Consequences of the Energy Crisis," 469.

115. William M. Brown and Herman Kahn, "Why OPEC Is Vulnerable," *Fortune*, July 14, 1980, 67–69.

116. "Busy Commodity Exchanges Eye Expansion of Oil Futures Trading," *Oil and Gas Journal*, October 5, 1981, 49.

117. John Morris, "Energy Futures VS Cartel: Counterpoints in Oil Prices," *American Banker*, July 30, 1985, 19; see also "Wresting Control from OPEC," *Washington Post*.

118. "'Open Outcry,' Chaos Part of Trading Art," *Chicago Tribune*, June 6, 1988, D1–D3. This statement was made in defense of open outcry after it came under scrutiny in the wake of the 1987 crash. Another work on oil futures trading called it "the best example of the marketplace in action." Prast and Lax, *Oil-Futures Markets*, 6.

119. Yergin, *The Prize*, 707–708.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

become sufficiently influential, there was a good chance that the higher-quality WTI crude could supplant Saudi crude as the pricing benchmark, marking the return of Texas oil to world benchmark status.

Drawing on the claim that futures markets "discovered" prices, NYMEX worked to achieve benchmark status by touting the discovery of the "real" price of crude on its exchange floor. The exchange and its supporters claimed that the futures market transparently broadcasted the price for WTI, which meant that it offered the real price of oil to the public for the first time, whereas it had previously been decided privately by Western oil companies or, more recently, by OPEC nations. The attraction of the real price, they expected, would turn WTI futures prices into the benchmark for sales on the spot market, where increasing amounts of oil purchasing occurred, and where the United States bought 25 percent of its foreign oil by 1984. For those who bought oil by negotiated contract, including Western oil companies, a lower futures price could serve as a reference price in negotiations, again to undermine OPEC's ability to dictate.[120] In the weeks leading up to NYMEX crude oil trading, OPEC reduced its posted price from $34/barrel to $29/barrel for the first time, foreshadowing its crumbling pricing power.[121] Near the one-year anniversary of NYMEX crude oil futures, one oil company trader remarked that the contract either "puts steam into the [spot] market or it pulls the plug on the market."[122] By the early 1990s, oil analyst and historian Daniel Yergin could claim: "With the rapid rise of oil futures, the price of WTI joined the gold price, interest rates, and the Dow Jones Industrial Average among the most vital and carefully monitored measures of the daily beat of the world economy."[123]

The dominant media narrative about crude futures trading in the 1980s echoed NYMEX rhetoric by drawing a contrast between what it considered to be the transparent and democratic process of price discovery on the futures markets and OPEC's secretive and allegedly irrational posted prices. NYMEX chairman Michael D. Marks announced that futures markets let "people know that the price is being determined by many people instead of 13 oil ministers sitting around a table, cloaked in secrecy," while another trader claimed as early as 1984 that the NYMEX price had "become the new benchmark

120. For discussions of how this dynamic worked, see "Trading Crude Oil Futures," *New York Times*, March 28, 1983, D8; "Rising Trades in Oil Futures Alter Pricing," *Wall Street Journal*; "Wresting Control from OPEC," *Washington Post*; Yergin, *The Prize,* 706–708.

121. Yergin, *The Prize*, 702.

122. "Rising Trades in Oil Futures Alter Pricing," *Wall Street Journal*.

123. Yergin, *The Prize*, 708.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

for oil…a visible and centralized pricing mechanism has been put in living rooms and offices around the world."[124] The *New York Times*, similarly, praised "the bellowing on the floor of the New York Merc" for shaping prices more than the nationalist "frame of mind of Arab sheiks."[125] Open outcry made the price of oil transparent and available to all, even in spite of lurking concerns about the irrationality of traders and the chaos that many people perceived on the exchange floor. As *Newsweek* put it, oil futures clarified "oil price mechanics" by taking them "from behind closed doors and into the open pit of a free exchange."[126] These narratives framed futures markets as spaces of democracy and freedom, while the cartel stood for secrecy and dictatorship. To financialize oil futures was to democratize oil pricing.

Oil futures traders, all of whom were Americans, also understood themselves to be fighting against OPEC's price-setting power. As OPEC's pricing power continued to erode in 1985, one trader beamed: "Just the thought that you have this sort of control over as great a commodity as oil is tremendous.… It's just a super feeling. Especially since we can make the prices look bad and force the oil countries to lower their prices."[127] By collectively speculating a lower price for oil, traders were able to manifest those expectations into prices that made OPEC's "look bad." One exchange official expressed similar self-awareness, telling the *Guardian* that "the whole market went quiet.…Then, everybody clapped" when the price of WTI dropped more than 60 percent to below $10/barrel in April 1986. These NYMEX traders and officials took pride in their geopolitical role. As one commodity analyst noted about the generally patriotic sentiment of the exchange floor: "OPEC dared to restrict our mobility, our independence. Americans find that hard to forgive."[128] It seemed, for a time at least, that the turn to the market meant a return to cheap oil.

If futures markets thrived on volatility, then what guarantee did American consumers have that oil prices would remain low? Liberal environmentalists and conservatives alike had supported market pricing in the late 1970s, thinking that it would translate into higher prices to discipline unruly consumption.[129] As long as oil gluts existed and prices continued to slide, as they had since 1981, it was possible to believe that NYMEX oil traders liked volatility at lower

124. "Setting Crude Prices in the Pits," *New York Times*, December 9, 1984, F4.
125. "Oil Pits Move to Center Stage," *New York Times*, January 10, 1985, D1.
126. "Oil Futures: A Gusher—Or a Dry Hole?" *Newsweek*, April 11, 1983, 56.
127. "Oil Pits Move to Center Stage," *New York Times*.
128. "An Uncertain and Rosy Future for the Traders on NYMEX," *Guardian*, April 27, 1987, 23.
129. On concern about overconsumption in the 1970s, see Horowitz, "Energy Crisis."

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

prices rather than volatility at higher prices. They would therefore keep prices much lower than OPEC because price swings, according to the *Guardian*, were smaller and less risky at $15/barrel than at $30/barrel, which made NYMEX the "natural enemy of OPEC." OPEC preferred higher prices because it meant higher profits, but NYMEX preferred lower prices because it meant less-risky profits.[130]

This point is crucial. Oil futures enjoyed such praise and fascination in the 1980s because they were perceived to be a driving force behind lower oil prices in the 1980s. For a U.S. economy figured as an "oil consumer"—as the world's second-largest oil-producing nation had been since October 1973—cheap oil was an advantage that futures seemed to help to ensure. Although it is beyond the scope of this article to determine the precise role of futures in the oil price slide of the 1980s, there were several supply-and-demand factors also at play in oil prices. These included new access to Alaskan oil, riskier forms of oil extraction in the Gulf and other parts of the Outer Continental Shelf, North Sea oil discoveries, the Volcker Shock to interest rates, reduced consumption amid recession, and cooperation from European oil-producing countries that cut their posted prices and eventually abandoned the posted pricing system altogether. These factors, which are a blend of political, economic, and cultural forces, created the glut that weakened OPEC and made crude oil futures possible. As new oil flooded global markets at lower prices posted by oil-consuming nations, U.S. commentators praised futures markets, bragged about their energy-conserving successes, and demanded the further reduction in prices to reflect the excess of supply, long-term ecological or climate considerations be damned. Despite these other geological and geopolitical factors rooted in Western dominance of global economic activity, the falling price of oil was figured as a free market phenomenon. As Chevron chairman George Keller claimed, the collapse of OPEC would "let the market…decide, and the price will undoubtedly fall flat and hard."[131] As oil futures, imagined as a technology for lowering prices, appeared to fulfill their role, they were cheered as an example of the market at work, forcing secretive cartels to play by the rules of supply, demand, and price, even as the West sought to form a cartel of consuming nations and to use its significant productive capacities to shape the global oil market.

A degree of duplicity inflected the financial world's geopolitical rhetoric over oil futures and OPEC. Aside from enabling the U.S. economy to grow by exchanging title to future oil, oil futures enriched U.S. stock exchanges and some of their established traders immensely

130. "An Uncertain and Rosy Future," *Guardian*.
131. "The Oil Bust Panic," *New Republic*, February 21, 1983, 16.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

by enabling the financial system "to cash in on de-regulation."[132] Speculators in oil and other commodities pursued their own financial interests, generating fascination at prodigious sums won and lost. The exchanges became wealthy economic centers at the heart of a newly financialized U.S. economy.[133] The introduction of its options contract on crude helped the once-struggling NYMEX to become the third-largest commodity exchange in the nation. The price of a seat on the exchange jumped from $20,000 in 1980 to $168,000 in 1986.[134] Along the way, more American investments and savings joined in the oil futures bonanza.[135] Such success, according to acting CFTC chairman Gary Seevers, proved that there was "a real need for trading" and that people were "making money" on futures.[136]

When global oil prices finally collapsed in 1986, the exchanges and the media celebrated oil futures as a success with tremendous growth potential.[137] Already by 1984, Arnold Safer declared the oil market finally to be "a competitive market" that had "become what the futures price is."[138] *Newsweek* boasted that "never has it been quite so clear: the price of oil is no longer determined by the wave of the OPEC scepter but by the manipulations of Adam Smith's 'invisible hand.'"[139] Likewise, the CBOT in 1986 published what one reporter called "a study with [a] forgone conclusion" that "the competitive, open outcry futures market was among the most liquid and efficient market-making arrangements ever devised."[140] Now, after more than a decade of uncertainty about the energy future and the viability of U.S. consumer capitalism, oil futures markets were touted as a crucial part of a solution to bring prices down and restore U.S. power and vitality. *Newsweek* called the decline of OPEC "a satisfying spectacle."[141]

132. "An Uncertain and Rosy Future," *Guardian*.

133. "In Chicago, the Future Is Now," *New York Times*, February 19, 1984, F4.

134. "An Uncertain and Rosy Future," *Guardian*.

135. "Futures Are Looking Up," *Newsweek*, November 30, 1981, 86.

136. "Playing the Futures Game," *Newsweek*, January 15, 1979, 63.

137. Oil's downward slide generated uncertainty about where oil prices would eventually settle. "The Big Oil Spill: Is It Bullish or Bearish?," *Barron's National Business and Financial Weekly*, January 27, 1986, 14; Gately, "Lessons from the 1986 Oil Price Collapse," 284.

138. "Setting Crude Prices in the Pits," *New York Times*, December 9, 1984, F4.

139. "OPEC, Meet Adam Smith," *Newsweek*, October 29, 1984, 98.

140. Quoted in "Futures Exchanges Affirmed as Best Method for Trading, by Study," *Associated Press*, October 1, 1986; "Futures Market: New Dimensions in Crude Oil, Products Trading," *Oil and Gas Journal*, March 5, 1984, 41.

141. "The Unrigging of Oil Prices," *Newsweek*, March 7, 1983, 62. This article was not about the effect of oil futures trading as it was published weeks before the crude contract began trading. Rather, it was about OPEC's internal struggles. It expresses the sense of victimization at the hands of OPEC that had emerged in U.S. popular discourse, and the desire for revenge through lower oil prices.

Conclusion: Capitalism, Financialization, and Narrative

Oil futures markets were well established by the end of the 1980s, generating billions of dollars of profit through the circulation of paper barrels and, so it seemed, keeping oil prices agreeably low. When oil prices bottomed out in 1986, the energy crisis seemed to be over, overcome in part by financial innovation. However, the consequences of oil financialization did not always play out as advertised, particularly during the Persian Gulf crisis of 1990–1991. Fearing enemy control of global oil prices, futures traders drove up oil prices to unprecedented highs after Saddam Hussein's Iraq invaded Kuwait in August 1990. Despite solid "fundamentals" of supply and demand, oil prices on futures markets doubled in August and September 1990, and continued to fluctuate wildly, driven by rumor, military action, and diplomatic activity, until the beginning of Operation Desert Storm in January 1991. Observers decried the apparent irrationality of futures speculation, which now seemed to threaten U.S. economic and geopolitical stability.[142] As one trader worried: "Normally, we love volatility, but this is insane."[143] Similar fears of speculative unreason surfaced again during the Second Persian Gulf crisis in the 2000s, when oil futures prices rose from $30/barrel to $145/barrel between 2003 and 2008.

It was not supposed to end this way, according to postenergy crisis narratives in favor of a financialized energy policy. These narratives, which circulated among financial institutions, traders, politicians, and the media, reinterpreted the energy crisis as a financial crisis rather than as a crisis of overconsumption and scarcity. They claimed that economic volatility was now a permanent feature of the American experience and insisted that only the creation of oil futures markets could help to weather the storms of a post-Bretton Woods global economy. Not only was the institutionalization of oil price speculation framed as a rational response to volatility, it also promised to end the energy crisis and restore U.S. geopolitical power by taking pricing power back from OPEC. Given that only 12 percent of Americans in 1986 felt that they understood commodity futures well enough to explain them to someone else, it is clear that these narratives had limited popular appeal.[144] Tracking them, however, reveals

142. "Gulf Crisis to Keep Oil Markets in Spotlight," *Reuters News*, August 10, 1990.

143. "Gulf Crisis Keeps NYMEX Traders in the Dark," *Star Tribune Newspaper of the Twin Cities Mpls.–St. Paul* October 28, 1990.

144. Poll: Americans and Their Money," *Money Magazine*, May 1986, Roper Center for Public Opinion Research, Cornell University. https://ropercenter.cornell.edu/.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

the development of the grand narrative of neoliberal financialization among the elites who stood to benefit the most.

These narratives had particular power because they tied financialization directly to the energy crisis, which many leaders, citizens, and experts had interpreted as an existential threat to U.S. consumer capitalism.[145] The energy crisis threatened to undermine mass consumption—not to mention U.S. hegemony—through inflation, high oil prices, and energy scarcity. By promising restoration rather than limits in the 1980s, a narrative congruent with the rhetoric of the Reagan administration, oil futures advocates painted an appealing picture of rational markets, lower prices, and energy abundance. The fossil economy seemed safe and secure under financialization. As the U.S. federal government turned rightward, these narratives held sway where it mattered.

The legitimation of oil futures represented one among many developments in the longer process of financialization in the twentieth century, which included the normalization of stock investing and of consumer debt.[146] Each of these developments suggests the importance of Per Hansen's claim that scholars of capitalism and business must integrate narrative analysis into understanding large-scale economic shifts.[147] Indeed, capitalism itself, as Jens Beckert argues, relies on "imaginaries of economic futures" for its functioning and continued existence.[148] For a country struggling to cope with the implications of the energy crisis for the future of its economy and way of life, oil futures contracts were perhaps the ultimate "instrument of imagination" that reconfigured price as anticipation and gave American markets the illusion of control over oil. By financializing oil futures, though, the exchanges also planted the seeds of future crises.

Bibliography of Works Cited

Books

Adelman, Morris. *The Genie Out of the Bottle: World Oil since 1970*. Cambridge, MA: MIT Press, 1996.

Beckert, Jens. *Imagined Futures: Fictional Expectations and Capitalism Dynamics*. Cambridge, MA: Harvard University Press, 2016.

Blair, John. *The Control of Oil*. New York: Pantheon Books, 1976.

145. Zaretsky, "Getting the House in Order."

146. Ott, *When Main Street Met Wall Street*; Hyman, *Debtor Nation*.

147. Hansen, "From Finance Capitalism to Financialization," 630.

148. Beckert, *Imagined Futures*, 1–2. On cultural/narrative aspects of financialization, see Haiven, *Cultures of Financialization*; Ho, *Liquidated*; Martin, *Financialization of Daily Life*.

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press

Borstelmann, Thomas. *The 1970s: A New Global History from Civil Rights to Economic Inequality*. Princeton, NJ: Princeton University Press, 2012.

Brown, Wendy. *Edgework: Critical Essays on Knowledge and Politics*. Princeton, NJ: Princeton University Press, 2005.

Burns, Joseph M. *A Treatise on Markets: Spots, Futures, Options*. Washington, DC: American Enterprise Institute, 1979.

Cambridge Energy Associates and Arthur Anderson & Co. *The Future of Oil Prices: The Perils of Prophecy*. Cambridge, MA: Cambridge Energy Associates, 1984.

Chassard, Christophe. *Option Trading and Oil Futures Markets*. Oxford: Oxford Institute for Energy Studies, 1987.

Chassard, Christophe, and Mark Halliwell. *The NYMEX Crude Oil Futures Market: An Analysis of Its Performance*. Oxford: Oxford Institute for Energy Studies and Dot Press, 1986.

Clubley, Sally. *Trading in Oil Futures*. New York: Nichols Publishing Company, 1986.

Cooper, Melinda. *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*. Seattle: University of Washington Press, 2008.

Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York: W. W. Norton, 1992.

Dardot, Pierre, and Christian Laval. *The New Way of the World: On Neoliberal Society*. Translated by Gregory Elliott. London: Verso, 2013.

Davis, Gerald F. *Managed by Markets: How Finance Reshaped America*. New York: Oxford University Press, 2009.

Duffie, Darrel. *Futures Markets*. Englewood Cliffs, NJ: Prentice Hall, 1989.

Fabian, Ann. *Card Sharps, Dream Books, and Bucket Shops: Gambling in 19th Century America*. Ithaca, NY: Cornell University Press, 1990.

Friedman, Milton, and Rose Friedman. *Free to Choose: A Personal Statement*. New York: Harcourt Brace Jovanovich, 1980.

Gisselquist, David. *Oil Prices and Trade Deficits: U.S. Conflicts with Japan and West Germany*. New York: Praeger Publishers, 1979.

Goodman, Leah McGrath. *The Asylum: The Truth about the Renegades Who Stole the World's Oil Market*. New York: William Morrow, 2011.

Haiven, Max. *Cultures of Financialization: Fictitious Capital in Popular Culture and Everyday Life*. New York: Palgrave Macmillan, 2014.

Harvey, David. *A Brief History of Neoliberalism*. New York: Oxford University Press, 2007.

Herbst, Anthony F. *Commodity Futures: Markets, Methods of Analysis, and Management of Risk*. New York: John Wiley and Sons, 1986.

Hieronymus, Thomas A. *Economics of Futures Trading for Commercial and Personal Profit*, 2nd ed. New York: Commodity Research Bureau, Inc., 1977.

Ho, Karen. *Liquidated: An Ethnography of Wall Street*. Durham, NC: Duke University Press, 2009.

Hyman, Louis. *Debtor Nation: A History of America in Red Ink*. Princeton, NJ: Princeton University Press, 2011.

Kotz, David M. *The Rise and Fall of Neoliberal Capitalism*. Cambridge, MA: Harvard University Press, 2015.

Krippner, Greta R. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press, 2011.

Melamed, Leo, with Bob Tamarkin. *Escape to the Futures*. New York: John Wiley and Sons, 1996.

Levitt, Kari Polanyi. *From the Great Transformation to the Great Financialization: On Karl Polanyi and Other Essays*. Halifax, NS: Fernwood, 2013.

Levy, Jonathan. *Freaks of Fortune: The Emerging World of Capitalism and Risk in America*. Cambridge, MA: Harvard University Press, 2014.

Markham, Jerry W. *The History of Commodity Futures Trading and Its Regulation*. New York: Praeger Publishers, 1987.

Martin, Randy. *Financialization of Daily Life*. Philadelphia, PA: Temple University Press, 2002.

———. *An Empire of Indifference: American War and the Financial Logic of Risk*. Durham, NC: Duke University Press, 2007.

Meadows, Donella, Dennis Meadows, Jørgen Randers, and William W. Behrens III. *The Limits to Growth: A Report from the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books, 1972.

New York Mercantile Exchange. *NYMEX Energy Hedging Manual*. New York: New York Mercantile Exchange, 1986.

Ott, Julia C. *When Wall Street Met Main Street: The Quest for an Investor's Democracy*. Cambridge, MA: Harvard University Press, 2011.

Prast, William G., and Howard L. Lax. *Oil-Futures Markets: An Introduction*. Lexington, MA: Lexington Books, 1983.

Razavi, Hossein, and Fereidun Fesharaki. *Fundamentals of Petroleum Trading*. New York: Praeger, 1991.

Rodgers, Daniel T. *Age of Fracture*. Cambridge, MA: Belknap Press of Harvard University Press, 2012.

Rose, Frank S., ed. *Commodity Trading Manual*. Chicago: Board of Trade of the City of Chicago, 1998.

Safer, Arnold E. *International Oil Policy*. Lexington, MA: Lexington Books, 1979.

Schwager, Jack D. *A Complete Guide to the Futures Markets: Fundamental Analysis, Technical Analysis, Trading, Spreads, and Options*. New York: John Wiley and Sons, 1984.

Sluyterman, Keetie E. *Keeping Competitive in Turbulent Markets, 1973–2007: A History of Royal Dutch Shell, Volume 3*. New York: Oxford University Press, 2007.

Stein, Judith. *Pivotal Decade: How the United States Traded Factories for Finance in the Seventies*. New Haven, CT: Yale University Press, 2010.

Swan, Edward J. *Building the Global Market: A 4,000 Year History of Derivatives*. Boston: Kluwer Law International, 2000.

Tamarkin, Bob. *The New Gatsbys: Fortunes and Misfortunes of Commodity Traders*. New York: William Morrow and Company, 1985.

Teweles, Richard J., and Frank J. Jones. *The Futures Game: Who Wins? Who Loses? Why?* New York: McGraw-Hill Book Company, 1987.

Teweles, Richard J., Charles V. Harlow, and Herbert L. Stone. *The Commodity Futures Trading Guide: The Science and Art of Sound Commodity Trading*. New York: McGraw-Hill Book Company, 1969.

Vitiello, Jane Kagan. *Trading Through Time: The History of the New York Mercantile Exchange 1872–1997*. New York: New York Mercantile Exchange, 1997.

Williams, Jeffrey. *The Economic Function of Futures Markets*. New York: Cambridge University Press, 1986.

Yergin, Daniel. *The Prize: The Epic Quest for Oil, Money, and Power*. New York: Free Press, 2009.

Zaloom, Caitlin. *Out of the Pits: Traders and Technology from Chicago to London*. Chicago: University of Chicago Press, 2006.

Articles, Chapters in Books, and Reports

Board of Governors of the Federal Reserve System, Commodity Futures Trading Commission, and Securities and Exchange Commission. *A Study of the Effects on the Economy of Trading in Futures and Options*. Submitted to Committee on Agriculture, House of Representatives, 98th Congress, 2nd Session [Committee Print], January 1985.

Danielson, Albert L. "Prospects for Crude-Oil Futures." In *Oil-Futures Markets: An Introduction,* edited by William G. Prast and Howard L. Lax, 113–124. Lexington, MA: Lexington Books, 1983.

Davis, Aeron, and Catherine Walk. "Distinguishing Financialization from Neoliberalism." *Theory, Culture, and Society* 34, no. 5–6 (July 2017): 27–51.

Dumenil, Gerard, and Dominique Levy. "Neo-Liberal Dynamics—Towards a New Paradigm." In *Global Regulation: Managing Crises after the Imperial Turn*, edited by Kees van der Pijl, Libby Assassi, and Duncan Wigan, 28–42. New York: Palgrave Macmillan, 2004.

Elmore, Bartow J. "The Commercial Ecology of Scavenger Capitalism: Monsanto, Fossil Fuels, and the Remaking of a Chemical Giant." *Enterprise and Society* 19 (March 2018): 153–178.

Epstein, Gerald A. "Introduction: Financialization and the World Economy." In *Financialization in the World Economy*, edited by Gerald A. Epstein, 3–16. Northampton, MA: Edward Elgar Publishing, 2005.

Errera, Steven. "Exchanges and Their Contracts." In *Energy Futures: Trading Opportunities for the 1980s*, edited by John Elting Treat, 3–21. Tulsa, OK: PennWell Books, 1984.

Foreign Affairs and National Defense Division, Economic Division, Environment and Natural Resources Policy Division. "Western Vulnerability to a Disruption of Persian Gulf Oil Supplies: U.S. Interests and Options." In *Congressional Research Service Report 83-24F*, March 24. Washington, DC: Library of Congress, 1983.

Friedman, Daniel, Glenn W. Harrison, and Jon W. Salmon. "The Informational Role of Futures Markets: Some Experimental Evidence." In *Futures*

Markets: Modelling, Managing and Monitoring Futures Trading, edited by Manfred E. Streit, 124–164. Oxford: Basil Blackwell, 1983.

Friedman, Milton. "The Need for Futures Markets in Currencies." *Cato Journal* 31 (Fall 2011): 635–641.

Gately, Dermot. "Lessons from the 1986 Oil Price Collapse." *Brookings Papers on Economic Activity* 17, no. 2 (1986): 237–284.

Garber, Peter M. "The Collapse of the Bretton Woods Fixed Exchange Rate." In *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, edited by Michael D. Bordo and Barry Eichengreen, 461–485. Chicago: University of Chicago Press, 1993.

Goss, B. A., and B. S. Yamey. "Introduction: The Economics of Futures Trading." In *The Economics of Futures Trading*, edited by B. A. Goss and B. S. Yamey, 1–59. New York: Macmillan Press, 1976.

Hansen, Per H. "From Finance Capitalism to Financialization: A Cultural and Narrative Perspective on 150 Years of Financial History." *Enterprise and Society* 15 (December 2014): 605–642.

Hayek, Friedrich. "The Use of Knowledge in Society." *American Economic Review* 35 no. 4 (September 1945): 519–530.

Hirschfeld, David J. "A Fundamental Overview of the Energy Futures Markets." *Journal of Futures Markets* (Spring 1983): 75–100.

Horowitz, Daniel. "The Energy Crisis and the Quest to Contain Consumption: Daniel Bell, Christopher Lasch, and Robert Bellah." In *The Anxieties of Affluence: Critiques of American Consumer Culture, 1939–1979*, 203–224. Amherst: University of Massachusetts Press, 2004.

Hubbert, M. King. "The Energy Resources of the Earth." *Scientific American* 225 (September 1971): 60–70.

———. *Nuclear Energy and the Fossil Fuels*. Houston, TX: Shell Development Company, June 1956.

Jickling, Mark. "Futures Markets and the Price of Oil." In *Congressional Research Service Report 91-324E*, April 3. Washington, DC: Library of Congress, 1991.

Lower, Robert C. "The Regulation of Commodity Options." *Duke Law Journal* (December 1978): 1095–1145.

Malm, Andreas. "Who Lit This Fire? Approaching the History of the Fossil Economy." *Critical Historical Studies* 3, no. 2 (Fall 2016): 215–248.

Mirowski, Philip. "Postface: Defining Neoliberalism." In *The Road from Mont Pelerin: The Making of the Neoliberal Though Collective*, edited by Philip Mirowski and Dieter Plehwe, 417–456. Cambridge, MA: Harvard University Press, 2009.

Mitchell, Timothy. "Fixing the Economy." *Cultural Studies* 12, no. 1 (January 1998): 82–101.

Lazonick, William. "Innovative Business Models and Varieties of Capitalism: Financialization of the US Corporation." *Business History Review* 84 (December 2010): 675–702.

Peck, Anne E. "The Economic Role of Traditional Commodity Futures Markets." In *Futures Markets: Their Economic Role Vol. 1*, edited by Anne E. Peck, 1–81. Washington, DC: American Enterprise Institute for Policy Studies, 1985.

Pindyck, Robert S. "The Dynamics of Commodity Spot and Futures Markets: A Primer." *Energy Journal* 22 (2001): 1–29.

Pollack, Gerald A. "The Economic Consequences of the Energy Crisis." *Foreign Affairs* (April 1974): 452–471.

Seevers, Gary L. "Government Regulation and the Futures Markets." *Western Journal of Agricultural Economics* 1, no. 1 (June 1977): 21–27.

Shiller, Robert J. "Narrative Economics." *American Economic Review* 107, no. 4 (2017): 967–1004.

Singer, S. Fred. "World Demand for Oil." In *The Resourceful Earth*, edited by Julian L. Simon and Herman Kahn, 339–360. New York: Blackwell, 1984.

Treat, John Elting. "Future of Futures." In *Energy Futures: Trading Opportunities for the 1990s*, edited by John Elting Treat, 335–344. Tulsa, OK: Pennwell Publishing Company, 1990.

Verleger, Philip A., Jr. "The Potential Impacts of Trading in Oil Futures on the World Oil Market." In *Energy Futures: Trading Opportunities for the 1980s*, edited by John Elting Treat, 114–123. Tulsa, OK: PennWell Books, 1984.

U.S. Congress, Joint Economic Committee. *Energy in the Eighties: Can We Avoid Scarcity and Inflation?: Hearings before the Subcommittee on Energy*. 95th Cong., 2nd Sess., March 8, 9, 21, 1978.

Zaretsky, Natasha. "Getting the House in Order: The Oil Embargo, Consumption, and the Limits of American Power." In *No Direction Home: The American Family and the Fear of National Decline, 1968–1980*, 71–104. Chapel Hill: University of North Carolina Press, 2007.

Newspapers and Magazines

American Banker
Associated Press
Barron's National Business and Financial Weekly
Bloomberg
Business Week
Chicago Tribune
Department of State Bulletin
Economist
Foreign Affairs
Fortune
Guardian (London)
Money Magazine
Newsweek
New Republic
New York Times
Oil and Gas Journal
Reuters News
Scientific American
Star Tribune Newspaper of the Twin Cities Mpls.- St. Paul
Wall Street Journal
Washington Post

Archives

American Presidency Project, http://www.presidency.ucsb.edu/
Bloomberg Terminal, Milt Harris Library, Rotman School of Management, University of Toronto, Toronto, ON, Canada.
Gerald R. Ford Presidential Library and Museum, Ann Arbor, MI.
Hoover Institution Archives, https://miltonfriedman.hoover.org/collections
Jimmy Carter Presidential Library and Museum, Atlanta, GA.
U.S. Federal Legislative History Library (HeinOnline, http://eresources.loc.gov/record=e1000050~S9)

https://doi.org/10.1017/eso.2019.26 Published online by Cambridge University Press