

## Part I: Energy Prior to World War I

“Notwithstanding the accretions of governmental authority during the Progressive Era,” Robert Higgs noted, “the American economy remained, as late as 1916, predominantly a market system.”<sup>1</sup> This was true of the ascendent oil industry and the nascent natural gas industry; less true of the mature coal industry. Vertically integrated electricity firms, meanwhile, were market driven before and after the advent of statewide public utility regulation.

Prior to World War I, private mineral and energy-bearing lands were accessible to prospecting, public lands less so. Mutually advantageous exchange determined price and quantity throughout the structure of production. Capital markets were self-regulated, and the rule of law institutionalized private contracting. Business taxation either did not exist (pre-1861; 1873–1908) or was modest (1861–72; 1909–18), which allowed maximum retained earnings for firms to expand from the wellhead/mine to retail.

Amid predominant market forces, each energy industry was directly or indirectly subject to state and/or federal regulation. Coal-gas distributors turned to franchise monopoly regulation beginning in the 1880s to quell new entry. Coal itself was governed by labor law that could make or break firms, as well as interrupt supplies, and the needed industry consolidation was checked by antitrust law. State and federal railroad intervention was also crucial for solid fuel.

With electricity, statewide public utility regulation reflected the desire of incumbents to avoid municipalization on one side and local rate ordinances on the other. Long-term franchises also helped with bond financing. Industry-leader Samuel Insull made this case in 1898, and within a decade, a state-by-state transformation was underway.

With petroleum, vulnerable independents sought political relief against their counterparties or integrated rivals. Regulation of pipelines and railroads was part of this; the bigger part was antitrust statutes and enforcement action that reshaped the industry.

In the case of hydropower, private development predominated, but government ownership of the waterways would become a brake under federal energy policy. Waterway development denied or discouraged to private developers would become a to-do for FDR’s New Deal.

America’s Civil War witnessed a turn from free markets. The North taxed petroleum at the wellhead and at the international border—two firsts. Overall, “government increased in scope, power, size, and intrusiveness in both the Union and the Confederacy during the war,” followed by a “post-war ratchet effect, where ... both the victorious national government and the state governments, North and South, failed to recede back to prewar levels and functions.”<sup>2</sup>

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<sup>1</sup> Robert Higgs, *Crisis and Leviathan: Critical Episodes in the Growth of American Government*, (New York: Oxford University Press, 1987) p. 123.

<sup>2</sup> Jeffrey Rogers Hummel, *Emancipating Slaves, Enslaving Free Men: A History of the American Civil War* (1996; Chicago, IL: Open Court, 2014), p. xix.

Postwar, the turn from laissez-faire would come from *within* the major energy industries. Rent-seeking, whereby companies lobby for and receive special government favor against competitors and/or consumers, was legal and a time-honored, identified practice.

But for-profit sponsors needed high-minded allies to help sway public opinion and politicians; they needed a Bootleggers and Baptists coalition.<sup>3</sup> The requisite high-mindedness came from academic and media bias in favor of government supervision, if not regulation, to replace laissez-faire and check the captains of industry. Thus, energy industry “bootleggers” found their moralistic “Baptists” in the intellectual elite, and academic statism’s “Baptists” had their energy “bootleggers” to fund lobbying in the legislatures.

Finally, government intervention on the local level addressed smoke nuisances, mostly associated with coal, oil, and wood burning for fuel. The first ordinances were enacted in Chicago and in Cincinnati (1881), Los Angeles (1905), and Boston (1910). By 1912, twenty-three of 28 major U.S. cities had smoke abatement regulation.<sup>4</sup> Before this time, air nuisances were addressed in the courts with tort law, a rule-of-law application of private property rights.

Chapter 1 below; this Section includes Chapter 2

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<sup>3</sup> The term *Bootleggers and Baptists* describes a political alliance between a profit-seeking business and a public-interest group that desire the same governmental action for different reasons.

<sup>4</sup> James E. Krier and Edmund Ursin, *Pollution and Policy* (Los Angeles: University of California Press, 1977), pp. 46–47. Before this time, “problem resolution was originally by private litigation to abate air pollution as a common law nuisance, either as a private nuisance, a public nuisance, or a trespass.” Arthur Stern, “History of Air Pollution Legislation in the United States,” *Journal of the Air Pollution Control Association* 32, no. 1 (January 1982), p. 44.

## Chapter 1 Petroleum Development

Petroleum has been the subject of more books, articles, and debate than all the other energies combined. Entrepreneurs, industry historians, muckrakers, and political economists have filled shelves and whole libraries. There is much to study—often with a need to cut through the emotions and biases of writers.

Petroleum in the United States is a case study of decentralized, evolutionary, undesigned order. It began before the Civil War with the discovery of crude oil in commercial quantities in northwest Pennsylvania. Midstream and downstream operations were born, and new regions and states would join in with what would soon be an international industry.

Rapid development resulted from private property rights, scarcity pricing, profit-and-loss accounting, and a reliable legal system. Sound money and low taxation were important. Incentives, economic calculation, and personal initiative came together, producing grand social benefits in addition to private gains.

Demand drove production. The Kerosene Age (illumination) was joined by the Fuel Oil Age (locomotion) and the Gasoline Age (automobiles). Combustion for energy was joined by lubrication uses from the beginning.

But success attracted ire. Specifically, the independents fought competition from the integrated companies. This intra-industry tiff resulted in government intervention, beginning with transportation and antitrust law. To this extent, best practices and needed industry adjustment were held back in what economist Ludwig von Mises called the *hampered market economy*.

### A New Industry

“Rock oil” exploration, production, transportation, refining, and distribution made whale oil obsolete. Refined crude oil introduced competition to coal oil and coal gas. Lamps, lubrication, and motive power from “the oil of service” brought “dominion over time and space,” two scholars wrote.

Oil became the popular power-producer.... [Men] certainly love engines, and petrol, fuel oil, Diesel oil—easily handled, economically consumed—became the most fascinating fuels that ever delighted the soul of the engineer.<sup>5</sup>

The free, nouveau industry imported know-how, technology, and capital to develop the world’s waiting petroleum, continent-by-continent, country-by-country. Crude-oil exports began almost immediately after the Drake well discovery in 1859, followed by American investment in Canada, Russia, and elsewhere.

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<sup>5</sup> E. H. Davenport and Sidney Russell Cooke, *The Oil Trusts and Anglo-American Relations* (New York: Macmillan Company, 1924), p. vii.

With three-fourths of U.S. refined oils going abroad by the early 1870s, a journey beginning on wagons or barges and ending on steam ships, Pennsylvania's bounty, "has penetrated to the most distant parts of the world, it brightens the long winter nights of Sweden and Norway, and even Iceland, it is sent to Australia and New Zealand, to China and Japan, to Russia, Germany, Austria, France and Great Britain," it was written at the time.<sup>6</sup> In the next decades, "the world's oil merchant" would continue to provide most of the total.<sup>7</sup>

On the eve of World War I, the U.S. was producing approximately two-thirds of the global oil, with American firms responsible for one-fourth of foreign production outside of Russia. America's oil met one-fifth of foreign demand in 1900, which increased to one-third by the time of World War I.<sup>8</sup> A drilling boom between 1912 and the Great War came with the first usage of scientific drilling from geological maps.<sup>9</sup> An industry in rapid ascent quieted fear about depleting stock energies.

Crude oil quickly displaced the demand for whale oil. In 1861, a cartoon published in a popular magazine of the day, [*Vanity Fair* (Vol. 3, April 20, 1861), p. 186], "Grand Ball given by the Whales in Honor of the discovery of the Oil Wells in Pennsylvania."



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<sup>6</sup> Henry E. Wrigley, *Special Report on the Petroleum of Pennsylvania* (Washington, DC: Board of Commissioners for the Second Geological Survey, 1874), p. 72. Quoted (inaccurately) in Harold Williamson and Arnold Daum, *The American Petroleum Industry*, vol. 1, *The Age of Illumination, 1859–1899* (Evanston, IL: Northwestern University Press, 1959), pp. 488–89.

<sup>7</sup> Davenport and Cooke, *The Oil Trusts and Anglo-American Relations*, p. 69. Erich Zimmermann, *World Resources and Industries* (New York: Harper & Brothers, 1933), pp. 494–95.

<sup>8</sup> Eugene Holman, "American Oil Companies in Foreign Petroleum Operations," in *Our Oil Resources*, ed. Leonard Fanning (New York: McGraw-Hill, 1945), pp. 16–17, 39.

<sup>9</sup> O. D. Donnell and A. Jacobsen, "Exploration Technology," in *Our Oil Resources*, ed. Leonard M. Fanning (New York: McGraw-Hill, 1945), pp. 71–72.

Oil discoveries brought legal issues to the fore. Who owned the resources under private land? The easy answer was the surface owner unless a lease contract involved drilling services. An executed oil-production contract (lease) in 1853 read:

Agreed . . . with J. D. Angier of Cherrytree Township, in the County of Venango, Pa., that he shall repair up and keep in order the old oil spring on land in said Cherrytree Township or dig and make new springs, and the expenses to be deducted out of the proceeds of the oil, and the balance, if any, to be equally divided ... for the full term of five years from this date. If profitable.<sup>10</sup>

But oil and gas were fugacious, transcending surface property lines. The U.S. courts followed English common law to adapt the *rule of capture*, which held that oil and gas became property not *in situ* but upon physical possession at the surface, even if that oil was drained from underneath a neighboring surface property. “[The oil] is wild and will run away if it finds an opening, and it is [the driller’s] business to keep it at home,” a 1907 court opinion read. “This may not be the best rule; but neither the legislature nor our highest court has given us any better.”<sup>11</sup>

Drainage competition also resulted from the legal obligation of each lessor in a contiguous reservoir to drill and produce—the *offset drilling rule*. But pushback occurred with the doctrine of *correlative rights*, which recognized the right of co-owners to their fair share of the oil in-place. Co-owners now had a *reasonable* opportunity to capture instead of an absolute right to capture.<sup>12</sup>

This legal framework eschewed a *homestead* approach of assigning property title to the entire reservoir to the first finder.<sup>13</sup> As it was, *correlative rights* brought government intervention to petroleum by making “wastage” illegal because it damaged reservoir co-owners. Conservation laws based on protecting correlative rights resulted.

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The multi-stage, world-leading industry was a case study in undesigned order, as if led by an invisible hand. Overnight, oil towns emerged. Cultural norms would clash with unbridled behavior at the frontier, but standards improved, and the oil trade afforded schools, hospitals, even art forms. The triumphs from oil commercialization were described in imaginative voice by none other than muckraker Ida Tarbell:

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<sup>10</sup> W. W. Thornton, *The Law Relating to Oil and Gas* (Cincinnati, OH: W. H. Anderson Co., [Indianapolis, IN, 1904] 1912), pp. 28–29.

<sup>11</sup> *Barnard v. Monongahela Natural Gas Company*, 216 Pa. 362 (1907). Also see Robert Bradley Jr., *Oil, Gas, and Government: The U.S. Experience* (Lanham, MD: Rowman and Littlefield, 1996), p. 62.

<sup>12</sup> *Ohio Oil Company v. Indiana* 177 U.S. 190, 210 (1900). Bradley, *Oil, Gas, and Government*, pp. 62–64.

<sup>13</sup> See Bradley, *Oil, Gas, and Government*, pp. 64–74. A Lockean view of surface versus non-surface ownership also contributed to the intervention of eminent domain rights for pipelines and railroads. See below, **p. 000**.

In ten years, ... we have built this business up from nothing to a net product of six millions of barrels per annum. We have invented and devised all the apparatus, the appliances, the forms needed for a new industry. We use a capital of \$200,000,000, and support a population of 60,000 people. To keep up our supply we drill 100 new wells per month, at an average cost of \$6,000 each. We are fourth in the exports of the United States. We have developed a foreign market, including every civilised country on the globe.<sup>14</sup>

“Serious as all [their] problems were,” Tarbell wrote, “. . . they had a remedy.”<sup>15</sup> An esprit de corps and can-do attitude prevailed. “They had never known anything but struggle—with conquest—and twelve years of it was far from cooling their ardour for a fair fight.” She continued:

More had been done in the Oil Regions in the first dozen years than the development of a new industry. From the first there had gone with the oil men’s ambition to make oil to light the whole earth a desire to bring civilisation to the wilderness from which they were drawing wealth, to create an orderly society from the mass of humanity which poured pell-mell into the region.<sup>16</sup>

“It is certain,” she noted, “. . . the development could never have gone on at anything like the speed that it did except under the American system of free opportunity.”

Men did not wait to ask if they might go into the Oil Region: they went. They did not ask how to put down a well: they quickly took the processes which other men had developed for other purposes and adopted them to their purpose.... Taken as a whole, a truer exhibit of what must be expected of men working without other regulation than that they voluntarily give themselves is not to be found in our industrial history.<sup>17</sup>

But her salutary, idyllic description of early oil set up the entrance of a spoiler, a “useful villain,”<sup>18</sup> Standard Oil Company and John D. Rockefeller, and, by implication, Big Oil.

### **Muckraking vs. Standard Oil**

Quack uses were out, mass use in. Supply was rapidly increasing, quality improving. Bottlenecks and other challenges were overcome. Market incentives and information brought forth a nondepletable, *expanding* resource—human ingenuity.

The from-scratch, blue-collar industry was about merit, not social strata. Privilege was unknown and cronyism absent. Politicians were watching far more than legislating. Yet the advancement

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<sup>14</sup> Ida M. Tarbell, *The History of The Standard Oil Company*, vol. 1 (New York: McClure, Phillips & Co, 1904), p. 36.

<sup>15</sup> Tarbell, *The History of The Standard Oil Company*, vol. 1, p. 34.

<sup>16</sup> Tarbell, *The History of The Standard Oil Company*, vol. 1, p. 34.

<sup>17</sup> Ida M. Tarbell, introduction to Paul Giddens, *The Birth of the Oil Industry* (New York: Macmillan Co., 1938), p. xxxix.

<sup>18</sup> Roger M. Olien and Diana Davids Olien, *Oil and Ideology: The Cultural Creation of the American Petroleum Industry* (Chapel Hill: University of North Carolina Press, 2000), p. 65.

and benefits of petroleum were not what newspapers wanted to report or intellectuals to explain. Oil development was not akin to California's gold rush. The news coming out of Pennsylvania from the Northeast media centers was sensationalized and negative.

Crude oil was black, dirty, smelly. Overproduction and waste overwhelmed conservation and frugality. Rags-to-riches and riches-to-rags stories insinuated unearned wealth and gambling gone wrong. The *new reform journalists* wrote more about booms, busts, untoward practices, violence, and idiosyncratic personalities; less about supply, demand, and product development benefitting a nation and the world.<sup>19</sup>

The *new reform intellectuals* saw petroleum as a mixed blessing. Discovering crude oil was more luck than science. The frontier industry was an “intellectual anomaly”—unplanned, unpredictable, disorderly, even lawless.<sup>20</sup> Bad behaviors, waste, and crass materialism; where was the institution of the common good, government?

The culture of oil as “an offense to common morality”<sup>21</sup> would color the industry in the eyes of public opinion and politics. The stage was set for the next era of industry development, when one dominant company set the pace for the entire industry, attracting a generation of opponents and critics.

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Drilling was a wild affair of hit-and-miss, often resulting in more supply than demand, given the rule of capture.<sup>22</sup> Stranded supply meant *wasted*, short of downstream operations to reach retail markets. Needed capital investment and wellhead discipline would come from Standard Oil of Ohio, formed in 1870 from a predecessor company, Rockefeller, Andrews & Flagler, already the nation's leading refiner.

Led by John D. Rockefeller, Standard rationalized the petroleum industry with strict management, horizontal and vertical integration, and standardization. Costs were cut and revenue enhanced by *economies of scale* (efficiencies from larger size) and *economies of scope* (efficiencies with complementary tasks), in contrast to many smaller, nonintegrated, vulnerable competitors. High profits at Standard went back into the business to speed the conversion of crude oil into household and business products.

Rockefeller focused on transportation, refining, and marketing. Drilling was left to speculators, with certain exceptions. Consumers came to trust the Standard Oil imprimatur on a variety of petroleum products. Locally, nationally, globally, the gains were manifest.

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<sup>19</sup> See Olien and Olien, *Oil and Ideology*, pp. 12–14, 22–25. A half-century later, it was reported that “greed” and “Machiavellian designs” made the oil baron “more suspected than a coal baron.” Davenport and Cooke, *The Oil Trusts and Anglo-American Relations*, p. v.

<sup>20</sup> Olien and Olien, *Oil and Ideology*, pp. 13–16, 24–25.

<sup>21</sup> Olien and Olien, *Oil and Ideology*, p. 25.

<sup>22</sup> This property law encouraged overdrilling and overproduction compared to a homestead assignment of first title. See Bradley, *Oil, Gas, and Government*, pp. 59–74.

Standard drove a hard bargain at the wellhead, crude that often was transported by the company's gathering lines for distillation. Independent refiners struggled against Standard's integrated, penny-pinching ways. Many merged with Standard in win-wins, but some fought to the finish with anger and malice. Producers, too, scorned their major buyer at every downturn, itself resulting from unchecked output.

Re-enter Ida Tarbell, Rockefeller's greatest critic. Standard Oil unfairly ousted small enterprise, she argued in a 17-part series in *McClure's Magazine* at the beginning of the twentieth century. Tarbell praised the Standard Oil's "machine" that satisfied "the world's craving for a good light to cheer its hours of darkness."<sup>23</sup> "Nothing has been too big to undertake, as nothing has been too small to neglect."<sup>24</sup>

But her moral standard in economics was expressly "a right to do an independent business."<sup>25</sup> Standard Oil's gains were the independents' loss—a zero sum game.<sup>26</sup> To the objection that Standard's market power was based on lowering consumers' prices, she retorted that "free competition" would have made prices *lower*.<sup>27</sup>

Since 1872, "Mr. Rockefeller has systematically played with loaded dice."<sup>28</sup> "It's business" meant "hard dealing, sly tricks, special privileges," even "blackmail."<sup>29</sup> The "badgered, foiled, spied upon"<sup>30</sup> independents were subject to Standard's control over transportation, putting "a good sound tax on oil."<sup>31</sup>

"Mr. Rockefeller has employed force and fraud to secure his ends," Tarbell charged.<sup>32</sup> Business, for him, was "war."<sup>33</sup> New managerial talent was "acquired" as "he wiped up one refinery and one pipe-line after another."<sup>34</sup> Rebates and other forms of "discrimination" were "nothing but violence."<sup>35</sup> This was behind the company's "monopolistic power."<sup>36</sup>

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<sup>23</sup> Ida M. Tarbell, *The History of The Standard Oil Company*, vol. 2 (New York: McClure, Phillips & Co, 1904), p. 126. The series was published in *McClure's* December 1902–July 1903; December 1903–April 1904; May 1904; and September–October 1904. Tarbell also wrote a two-part biographical sketch of John D. Rockefeller, which some consider part of her Standard Oil series, but *McClure's* published it in July and August 1905, after the original series had come out in book form.

<sup>24</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 274.

<sup>25</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 126.

<sup>26</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, pp. 287–88.

<sup>27</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 287.

<sup>28</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 288.

<sup>29</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, pp. 287, 289.

<sup>30</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, pp. 287, 288.

<sup>31</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 284.

<sup>32</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 287.

<sup>33</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 292.

<sup>34</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 126.

<sup>35</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 292.

<sup>36</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 287.



Tarbell resorted to fearmongering. Standard's means were "ethically wrong," the effects on competitors "deplorable."<sup>37</sup> The Trust threatened the American way of life and progress. "Let Mr. Rockefeller succeed in the oil business and he will attack other industries," Tarbell opined, and "in fifty years a handful of men will own the country."<sup>38</sup>

Young employees at Standard were compromised, "growing up with the idea that business is war and that morals have nothing to do with its practice."<sup>39</sup> "There is no cure but an increasing scorn of unfair play," it was written in final paragraph of Tarbell's two-volume *The History of The Standard Oil Company* (1904). Bring to business the ethics of sports competition, she declared, and "we shall have gone a long way toward making commerce a fit pursuit for our young men."<sup>40</sup> But business does not have a championship and coronation; it is a continuous process amid change that demands improvement.

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Tarbell conceded that Standard's aversion to publicity and politics (embodied in Rockefeller's comment "We do not talk much, we saw wood"<sup>41</sup>) was good strategy for the dominant firm. But when independents got political for equality of competition, she complained, Standard "appeared in politics only to oppose legislation obviously for the public good."<sup>42</sup>

Still, to critics, Standard's retaliatory, defensive politics amounted to unfair meddling. But "fighting measures which equalise privileges and which make it more necessary for men to start fair and play fair in doing business"<sup>43</sup> was consumers-come-first freedom economics. By contrast, calling on government coercion to regulate markets, using inappropriate sports analogies, was itself a new and unfair competitive tactic in the ways of doing business. And it was the exclusive privilege of some in business who had the ear of public influencers, such as Ida Tarbell.

"By 1877," noted Roger and Diana Davids Olien, "the company's rivals had made manipulation of public discourse their principal competitive strategy."<sup>44</sup> Academics and other thought leaders were involved. Richard Ely of Johns Hopkins actively corresponded with petroleum's two leading muckrakers, Henry Demarest Lloyd and Ida Tarbell.<sup>45</sup> It was Ely who founded the

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<sup>37</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 288.

<sup>38</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, pp. 126–27.

<sup>39</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 292.

<sup>40</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 292.

<sup>41</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 127.

<sup>42</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, pp. 290, 291. She mentioned Standard's opposition to what became the Interstate Commerce Act of 1887.

<sup>43</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 291.

<sup>44</sup> Olien and Olien, *Oil and Ideology*, p. 39.

<sup>45</sup> Olien and Olien, *Oil and Ideology*, p. 14.

American Economic Association on the resolution: “We regard the state as an educational and ethical agency whose positive aid is an indispensable condition of human progress.”<sup>46</sup>

“Most of the major elements of discourse relating to the petroleum industry and Standard Oil were firmly established in public discourse by 1890,” the Oliens determined.<sup>47</sup> John D. Rockefeller, who hardly resembled or even understood his public caricature, was on trial. His company would be next.

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The importance of “knowing somebody” in an emerging world of regulation was well illustrated by Tarbell. Her verdict that Rockefeller’s Standard Oil was “a leech on our pockets, a barrier to our free efforts”<sup>48</sup> reflected family connections. Father Franklin was an independent producer at odds with counter-party Standard. Brother William was an executive of a leading Standard rival.<sup>49</sup> From them, she learned of competitive struggle against a very efficient rival. But many independents had joined Standard and benefitted. Others found a market niche in which to succeed outside of the dominant firm. Their stories were scarcely part of Tarbell’s telling.

Economics undermined Tarbell’s premises. As Harvard business historian Thomas McCraw explained two generations later:

Without the benefit of a vocabulary that distinguished conceptually between center and peripheral firms, productive and allocative efficiency, vertical and horizontal integration, economies of scale and transaction costs, these observers had only their personal sensibilities and political ideologies to guide them. And both their personal and political values concerning the nature of liberty, the meaning of opportunity, and the promise of America were directly threatened by the trusts.<sup>50</sup>

Worse, legerdemain got Tarbell from flawed premises to flawed conclusions. Scholars associated with the Business History Foundation found Tarbell’s account “so replete with contradictions and errors of omission that full analysis would necessitate a monograph.”<sup>51</sup> Her evidence came from “Standard Oil’s bitter enemies, those with a personal interest in damning the company.”<sup>52</sup> Her brief came from lawyer briefs in court proceedings against Rockefeller’s company.

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<sup>46</sup> Richard T. Ely, *Report of the Organization of the American Economic Association* (Baltimore, MD: John Murphy and Company, March 1886), “Platform.” Quoted in Olien and Olien, *Oil and Ideology*, p. 16.

<sup>47</sup> Olien and Olien, *Oil and Ideology*, p. 83.

<sup>48</sup> Tarbell, *The History of The Standard Oil Company*, vol. 2, p. 292.

<sup>49</sup> Ralph W. Hidy and Muriel E. Hidy, *Pioneering in Big Business, 1882–1911* (New York: Harper and Brothers, 1955), p. 650. [Unnumbered vol. 1 of *History of Standard Oil Company (New Jersey)*, 3 vols., ed. The Business History Foundation, 1955–1971.]

<sup>50</sup> Thomas K. McCraw, “Rethinking the Trust Question,” in *Regulation in Perspective*, ed. McCraw (Boston, MA: Harvard University, Graduate School of Business Administration, 1981), p. 20.

<sup>51</sup> Hidy and Hidy, *Pioneering in Big Business*, p. 649.

<sup>52</sup> Olien and Olien, *Oil and Ideology*, p. 98.

There was “reliance on hearsay” and “second- or thirdhand information.”<sup>53</sup> “What she could not find Tarbell concocted, a practice within journalistic convention of the time that could greatly enhance the dramatic impact of a story.”<sup>54</sup> There was “a mixture of melodrama and morality typical of muckraking style” and “statistical sleight of hand.”<sup>55</sup>

The “first coherent, historical narrative on Standard Oil activities,”<sup>56</sup> flipped the real script. One chapter supported Standard’s achievements, 15 criticized. But Tarbell’s volumes were more praised than questioned. Henry Demarest Lloyd’s earlier attack on Standard Oil (*Wealth Against Commonwealth*, 1894) had likewise been popular, despite its economic and historical misdirection.<sup>57</sup>

As it was being released in *McClure’s*, Tarbell’s muckraking was challenged by a young scholar of economics at Harvard, Gilbert H. Montague (*The Rise and Progress of the Standard Oil Company*, 1903). Allan Nevins in 1940 (*John D. Rockefeller: The Heroic Age of American Enterprise*) and leading academics in the 1950s in business history all but finished the job.<sup>58</sup> Yet Ida Tarbell’s interpretation has lived on in contemporary accounts, such as those by Daniel Yergin (*The Prize*, 1991) and by Ron Chernow (*Titan*, 1998).

And in an influential journal article (1996), two economists reexamined the historical record to document Standard Oil’s role in “monopoly,” “monopsony,” “market power,” “collusion,” “cartel policing behavior,” “horizontal conspiracy,” “transportation conspiracy,” “predatory commitment conspiracy,” “anticompetitive effect,” “distress purchases,” and “barriers to entry.”<sup>59</sup> Such practices in transportation, in particular, disadvantaged producers on the one side and independent refiners on the other.

Elizabeth Granitz and Benjamin Klein’s “Monopolization by Raising Rivals’ Costs” saw little overall efficiency gains by Standard Oil, reversing the verdict from the Harvard school of business historians and others. Rockefeller is described as a “talented manager and organizer”<sup>60</sup> whose success largely reflected a fortuitous bonanza of crude oil, as well as anticompetitive practices. The independents could have done about as well, the article concludes, thus resurrecting Tarbell’s verdict.

But that verdict dumbs down the voluminous record of how Rockefeller discovered and implemented sizable scale economies and disciplined inefficient independents at each industry

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<sup>53</sup> Olien and Olien, *Oil and Ideology*, p. 98.

<sup>54</sup> Olien and Olien, *Oil and Ideology*, p. 98. She had “imaginary dialogues” with Rockefeller himself.

<sup>55</sup> Olien and Olien, *Oil and Ideology*, pp. 96, 99.

<sup>56</sup> Hidy and Hidy, *Pioneering in Big Business*, p. 649.

<sup>57</sup> Hidy and Hidy, *Pioneering in Big Business*, p. 651.

<sup>58</sup> See Robert Bradley Jr., *Capitalism at Work: Business, Government, and Energy* (Salem, MA: M&M Scrivener Press, 2009), pp. 148–55. Alfred Chandler’s 1960s work on strategy and structure added theoretical heft to the understanding of Standard Oil. *Capitalism at Work*, pp. 155–58.

<sup>59</sup> Elizabeth Granitz and Benjamin Klein, “Monopolization by ‘Raising Rivals’ Costs’: The Standard Oil Case,” *The Journal of Law & Economics* 39, no 1 (April 1996), pp. 1–47.

<sup>60</sup> Granitz and Klein, “Monopolization by ‘Raising Rivals’ Costs,” p. 44.

stage. Rockefeller was an *entrepreneur*, consolidating the talent for innovation and efficiency, implementing penny-pinching on the one side and penny-winning on the other. He was engaged in a market discovery process that scholars would later appreciate with new business concepts. And undeniably, Standard Oil had the treasury to quickly build infrastructure that would remove bottlenecks between the wellhead and the consumer.

Replacing coal-oil refining with petroleum refining required breakthroughs in organic chemistry, as well as “the utmost vigilance and precision in operating techniques.”<sup>61</sup> Economies of scale were apparent.<sup>62</sup> What invited an entrepreneur with a new business vision like Rockefeller was an unprecedented “gap between the demands of throughput and the inadequacies of existing batch capacity.”<sup>63</sup>

In addition to quantity and price gains, Standard Oil achieved *safety* by standardizing (hence the company name) a dangerous flammable product (kerosene). And all was done in a free market where independents were guaranteed the legal right to enter, exit, and otherwise adapt.

Shortcomings in the Granitz-Klein standard of competition and efficiency (structure-conduct-performance) is behind the Rockefeller/Standard misinterpretation. This study states, “the decrease in price and increase in quantity during the 1870s is not inconsistent with a simultaneous growth of market power.”<sup>64</sup> But “market power” is not controlling for consumer welfare in terms of price, quantity, and quality. The pejorative terms “monopoly,” “conspiracy,” etc. were complaints from rivals, even smear terms, not economic bads.

Economies of scale accruing to consumers was at work when “raising rivals’ cost,” except when government intervention or poorly defined property rights were present. An example of intervention was oil tariffs; an example of poorly defined property right was the surface transportation obstruction between pipelines and railroads.

The Tarbellian “right to do an independent business” reverses the role of producers and consumers in the free economy. “The whole economic process is conducted for the benefit of the consumers,” noted Ludwig von Mises.<sup>65</sup> The what, when, where, and how much of production and sale is determined not by a particular ethical standard but by consumers. Mises continues:

To assign to everybody his proper place in society is the task of the consumers. Their buying and abstention from buying is instrumental in determining each individual’s social position. Their supremacy is not impaired by any privileges granted to the individuals qua producers.<sup>66</sup>

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<sup>61</sup> Williamson and Daum, *The American Petroleum Industry*, vol. 1, p. 203.

<sup>62</sup> Williamson and Daum, *The American Petroleum Industry*, vol. 1, p. 231.

<sup>63</sup> Williamson and Daum, *The American Petroleum Industry*, vol. 1, p. 266.

<sup>64</sup> Granitz and Klein, “Monopolization by ‘Raising Rivals’ Costs,” p. 40.

<sup>65</sup> Ludwig von Mises, *Human Action: A Treatise on Economics*, 3rd ed. (Chicago, IL: Henry Regnery, 1966), p. 357.

<sup>66</sup> Mises, *Human Action*, p. 275.

## Antitrust Activism

Special-interest, industry-driven intervention concerned oil-industry size and scope. An 1897 Texas law, sponsored by politically powerful independents with Standard Oil affiliates in mind, outlawed integrated competition.<sup>67</sup> The Texas Antitrust Law of 1899, and similar laws in other oil states, discouraged or prevented best practices, whether by a market leader or wellhead producers needing to consolidate and integrate.<sup>68</sup> Antitrust worked against best practices in the coal industry too.<sup>69</sup>

From an economic viewpoint, the problem was not Big Oil but harried competitors substituting the political means for the economic means—with antitrust as the major sword.<sup>70</sup> But it took journalists and intellectuals to advance an anti-bigness, anti-petroleum agenda with Rockefeller and Standard Oil on trial. The *progressivist conservationist vision* would have future iterations as well.<sup>71</sup>

“Attacking Standard Oil was effective business strategy,” Roger and Diana Davids Olien noted. “From the business world opposition came from regional interests threatened by Standard Oil’s growing national preeminence—the clients Simon Sterne represented and firms less able to compete with the efficiency of Standard Oil’s operations.”<sup>72</sup>

A competitor/media/academic narrative emerged: Rockefeller’s “morally unacceptable actions” creating a “monstrous monopoly” was “an alarming threat to public welfare.” The result was “growing pressure for state and federal action” with Standard being “the symbol for what could justify regulation.”<sup>73</sup> Moralistic economics produced such terms as “predatory pricing,” “cutting to kill,” “ruinous competition,” and “unfair practices” that business economics would later explain in efficiency terms.

New York initiated the first investigation of Standard in 1880. Ohio launched the first antitrust suit against Standard Oil in 1890. Joining Ohio and Texas were Tennessee, Illinois, and Kentucky in 1904; Kansas, Missouri, and West Virginia in 1905; and Arkansas, Oklahoma, and Maryland in 1906.<sup>74</sup> “Prosecuting attorneys and attorneys general of the states flitted from state to state and to Washington, D.C., listening, conferring, and collecting data pertinent to their own

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<sup>67</sup> Bradley, *Oil, Gas, and Government*, p. 617.

<sup>68</sup> See below, pp. 000.

<sup>69</sup> See below, pp. 000.

<sup>70</sup> See Bruce Bringham, *Antitrust and the Oil Monopoly: The Standard Oil Cases, 1890–1911* (Westport, CT: Greenwood Press, 1979), as well as the comprehensive series of books on the Standard Oil Company (New Jersey) edited by Harvard Business School historians.

<sup>71</sup> Olien and Olien, *Oil and Ideology*, p. 249.

<sup>72</sup> Olien and Olien, *Oil and Ideology*, p. 55. The Oil Producers’ Protective Association of America was one trade group attacking Standard Oil pipelines for buying oil too low and otherwise “discriminating.”

<sup>73</sup> Olien and Olien, *Oil and Ideology*, p. 55.

<sup>74</sup> See the chart in Hidy and Hidy, *Pioneering in Big Business*, p. 683. An earlier suit by Nebraska in 1899 was dropped two years later because of insufficient evidence. Later suits were filed in Mississippi (1909), Oklahoma (1910), Minnesota (1910), and Iowa (1911). The Oklahoma suit was settled with an agreement by Standard to construct a \$150,000 refinery. Bringham, *Antitrust and the Oil Monopoly*, chapters 1-4.

local struggles with the embattled giant of the petroleum industry.<sup>75</sup> The cluster of suits reflected the same political currents that earlier led to the passage of 13 state antitrust laws in 17 months in 1889–90.<sup>76</sup> Bruce Bringham explained the attraction:

There were potentially great political rewards for politicians who took on the oil monopoly. Furthermore the inevitable collapse of an antitrust suit was always far less visible than the well-publicized opening moves. Thus prosecutors had much to gain and very little to lose by taking the oil trust to court.<sup>77</sup>

On the federal level, Senator John Sherman of Ohio, pressured by independent producers and refiners in his state, began a quest to pass a national law.<sup>78</sup> A statute questioning horizontal or vertical bigness would invite lawsuits, as it had in the states. The Sherman Antitrust Act of 1890 presaged the antitrust suit filed in 1906 that forced divestiture of the Standard Oil Trust in 1911, the single greatest federal intervention prior to World War I—and one of the greatest in all industrial history.

### **Statism, by Contrast**

The politics of government activism prominently involved *rent-seeking*, wherein business firms sought and received special privilege from government. Never illegal, business and politics arose together. Nineteenth-century political economists Simon Newcomb and William Graham Sumner identified the incentive for organized business lobbying to use the political means at the expense of the less organized *general* interest of consumers or taxpayers.<sup>79</sup> *Concentrated benefit, diffused cost* would become the catchphrase for this phenomenon.

Petroleum was a case study. “By 1870,” two historians noted, “oil producers and refiners were thoroughly accustomed to political activity.”<sup>80</sup> Independent producers successfully lobbied state lawmakers for non-contractual, preferential pipeline service, which would expand to federal (interstate) intervention.

“Common carrier” and “common purchaser” laws—as in Ohio (1872), West Virginia (1879), Pennsylvania (1883), Texas (1899), and Kansas (1905)—required oil pipelines to accept tendered oil equitably, in return for eminent domain authority over surface owners. Oil-carrying railways, such as the Pennsylvania Railroad, blocked oil lines at crossings to add impetus for condemnation rights. Some “free pipeline laws” included maximum rate regulation.<sup>81</sup>

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<sup>75</sup> Hidy and Hidy, *Pioneering in Big Business*, p. 684.

<sup>76</sup> Bringham, *Antitrust and the Oil Monopoly*, p. 3.

<sup>77</sup> Bringham, *Antitrust and the Oil Monopoly*, p. 107.

<sup>78</sup> Olien and Olien, *Oil and Ideology*, p. 79.

<sup>79</sup> Bradley, *Capitalism at Work*, pp. 131–34.

<sup>80</sup> Olien and Olien, *Oil and Ideology*, p. 37.

<sup>81</sup> Bradley, *Oil, Gas, and Government*, pp. 609–17, 776–785. The misapplication of surface property rights to include subsurface/elevation rights created the obstruction opportunity for railroads and pipelines against each other, preventing a Lockean solution of tunnelling below or bridging above. In this way, eminent domain was a government intervention in response to a property rights flaw.

In 1906, an amendment to the Hepburn Act brought interstate oil lines under the jurisdiction of the Interstate Commerce Commission, joining railroads. Common carriage requirements intended to prevent Standard Oil from “discriminating” against independent producers needing to reach refineries. Maximum rate authority was also authorized.<sup>82</sup>

In 1899, the Kansas legislature allowed one of its cities to drill for natural gas to serve residents and government buildings. A bounty for the first discovery in the state was offered for oil by Nebraska for oil in 1875 and by Nevada for natural gas in 1901.<sup>83</sup>

Early intervention reflected revenue needs. During the Civil War, the North implemented a wellhead tax on crude oil and a border tariff on imported crude and oil products.<sup>84</sup> Consumers paid a bit more for less supply, and the domestic industry was somewhat protected, skewing the international division of labor.

The Sixteenth Amendment to the U.S. Constitution (1913) solidified income taxation for individuals and businesses. In 1909, a one percent corporate “excise” or “franchise” tax began; in 1916, a straight two-percent tax was enacted (with constitutional protection) on business income. Mineral and energy-stock depletion was defined as a “reasonable amount” based on cost or “market value,” the latter having the potential to go beyond cost depreciation. More was to come during World War I, a time when business taxation swelled to heights unimagined just several years before.<sup>85</sup>

“Blue sky” laws, with oil drilling ventures in mind, required promoters to obtain licenses and register securities in certain localities and states prior to World War I.<sup>86</sup> Oil-leasing rules on public lands ranged from uncertain to onerous.<sup>87</sup> Safety regulation of stored oil products in different locales rounded out early petroleum regulation.

## §§

The world-leading U.S. petroleum industry was not the achievement of superior genetics. It was the institutional result of an unhampered market economy, where incentivized entrepreneurship was legally protected and culturally accepted. The counter experience of nationalism and statism in other countries illustrates the point.

**Mexico** (of which Texas had been a part) became a petroleum power at the beginning of the twentieth century, under concession agreements protected by the Constitution of 1857, as amended. American exports of equipment, know-how, and capital resulted in a level of Mexican

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<sup>82</sup> Bradley, *Oil, Gas, and Government*, pp. 776–781. Motor carriage (1935) and water carriers (1940) would come under ICC authority. *Ibid.*, pp. 1778–79.

<sup>83</sup> Bradley, *Oil, Gas, and Government*, pp. 587–88.

<sup>84</sup> Bradley, *Oil, Gas, and Government*, pp. 320, 712–13.

<sup>85</sup> Bradley, *Oil, Gas, and Government*, pp. 332–36. **Also see chapter 3, below, pp. 000.**

<sup>86</sup> Bradley, *Oil, Gas, and Government*, p. 550. This intervention went beyond tort law prohibitions against fraud.

<sup>87</sup> The ambiguity of the General Mining Act of 1872 (Placer Act) toward petroleum was clarified in 1897 and codified in the Mineral Leasing Act of 1920. Bradley, *Oil, Gas, and Government*, pp. 262–66.

crude imports so great that U.S. independents, with domestic production, wanted it taxed upon entry.<sup>88</sup>

Mexico's golden age of petroleum was jolted by the Constitution of 1917, which required domestic ownership of oil and gas and claimed sovereignty over contracts made with foreign entities.<sup>89</sup> Royalty rates rose to almost half of the export price, and growing nationalism culminated in nationalization in 1938. The few remaining U.S. companies received one-fourth of the value of their properties.<sup>90</sup>

**Argentina** is the story of limited opportunity and phantom wealth, from the 1860s to the present. The country's oil pioneer, Leonardo Villa, was stymied by a lack of property rights, leaving unlaunched anything similar to what E. L. Drake had done in Pennsylvania.

Resource nationalism kept surface owners sidelined and concessionaires at risk of cancelled contracts, which repeatedly occurred. Declared The Constitution of 1949: "The minerals, waterfalls, oil, coal and gas field and other sources of natural energy are the inalienable property of the Nation."<sup>91</sup>

President Juan Perón spoke of "rational and scientific development by the State" in place of "totally disorganized ... [foreign] monopolies."<sup>92</sup> Political phrases such as "social justice," "economic independence," and "political sovereignty" held sway with the (unknowingly victimized) citizenry.<sup>93</sup>

"When the State doesn't plan it, the monopolies do," stated Perón, "the only difference being that the State can do so to distribute the benefits of the wealth among the 14 million Argentines, whereas the monopolies do it to fatten the immense coffers of their parent companies, far away, in another country."<sup>94</sup> Argentina's academics and other thought leaders dared not disagree given their status and part in the political social structure.

"In just 45 years," summarized Guillermo Yeatts, "each of the 20 administrations made its unique imprint on oil policy," the constant being a government monopoly of the subsurface.<sup>95</sup> Periods of liberalization for foreign concessions sparked gains, but autarkic amendments reversed the progress.

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<sup>88</sup> Bradley, *Oil, Gas, and Government*, p. 714.

<sup>89</sup> Article 27, quoted in translation in Joseph E. Pogue, *The Economics of Petroleum* (New York: John Wiley & Sons, 1921), p. 328.

<sup>90</sup> Leonard Fanning, *Foreign Oil and the Free World* (New York: McGraw Hill, 1954), pp. 29–30.

<sup>91</sup> Quoted in Guillermo Yeatts, *Subsurface Wealth: The Struggle for Privatization in Argentina* (Irvington-on-Hudson, New York: Foundation for Economic Education, 1997), p. 113.

<sup>92</sup> Quoted in Yeatts, *Subsurface Wealth*, p. 114.

<sup>93</sup> Quoted in Yeatts, *Subsurface Wealth*, p. 119. Another xenophobic phrase (p. 95) was "dangerous invasion of imperialistic capitalism."

<sup>94</sup> Quoted in Yeatts, *Subsurface Wealth*, p. 114.

<sup>95</sup> Quoted in Yeatts, *Subsurface Wealth*, p. 142.



**Venezuela** is another story of success falling to statism and failure. As Mexico was fading into nationalism, Venezuela enacted a petroleum code in 1922 that proved fair and workable to concessionaires. And U.S. industry responded. Several decades of relative stability created a world oil power, despite creeping political risk. “Between 1920 and 1938, eight hydrocarbon laws were approved, each advancing the state resource owner’s position vis-à-vis the companies.”<sup>96</sup> The Hydrocarbons Law of 1943 added to the company-to-government shift.

What about the commoners? While jobs and camp amenities were enjoyed, land owners did not receive royalty payments that were enjoyed by a multitude in the U.S. “The development of oil fields in Venezuela has created an autophagous economy,” noted William Vogt at mid-century.

For years the country has been content to float along on this golden ride, and has not even bothered to produce the crops, meat, and dairy products of which it is capable. The mass of the people, receiving little benefit from the oil, have carried on subsistence agriculture.<sup>97</sup>

Gradually, the second largest oil producing nation in the world (next to the U.S.) would succumb to government elitism and cronyism, leading to nationalization in the mid-1970s. For more than a century, the citizens as phantom royalty owners lost their wealth to the political class, resulting in poverty amid plenty. Under *Petróleos de Venezuela, S.A. (PDVSA)*, a hydrocarbon laggard, corruption and underperformance had left the oil and gas sector without incentive or expertise.

Elsewhere in **Latin America**, nationalism was the norm and subsoil privatization a non-option. “Creeping expropriation” and outright nationalization marked the petroleum experiences in **Bolivia, Brazil, Chile, and Uruguay**, less so in **Colombia and Peru**, at the half-century mark.<sup>98</sup>

**Russia** is a case study of socialism and communism. Once rivaling the U.S. from the other side of the world, this petroleum power saw its mighty industry decimated by nationalization and Marxist reform beginning in 1918. “As to the effect of government control on potential supply,” noted *Nation’s Business*, “the record shows 20 years of experience with government control in Russia, which in 1900 produced the same amount of oil as the United States, in 1916 produced one-fifth as much, and in 1929 less than a tenth as much.”<sup>99</sup>

In **Europe**, refining and marketing was the domain of foreign companies, including several U.S. majors. But in the 1920s and early 1930s, France, Italy, Poland, Roumania, Germany, the Netherlands, Norway, Sweden, Denmark, and Great Britain created national oil companies to compete in this space, crowding out, even expelling, the incumbents.<sup>100</sup>

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<sup>96</sup> Ramón Espinasa, *75 Years after the 1943 Agreements* (Washington, DC: Center for Strategic and International Studies, 2018), p. 5.

<sup>97</sup> William Vogt, *Road to Survival* (New York: William Sloane Associates, 1948), p. 165.

<sup>98</sup> Leonard Fanning, *Foreign Oil and the Free World*, p. 60. Fanning (p. 311) praised the overall effort of U.S. oil companies abroad as “raising living standards” to ward off “the spread of Communism....”

<sup>99</sup> Thomas Read, “Should Bureaucracy Rule Petroleum?” *Nation’s Business*, August 1941, p. 25.

<sup>100</sup> Harold Williamson et al., *The American Petroleum Industry*, vol. 2, *The Age of Energy, 1899–1959* (Evanston, IL: Northwestern University Press, 1963), p. 524.

None experimented with a transfer of subsoil rights to surface owners in any political jurisdiction to gauge the results. Mexico before 1917 and Venezuela after shined a bright light on the gains from concessionaire incentive, but without a mass private royalty constituency, the government could change political course toward statism and stagnation.

The history of energy nationalism evidenced a socioeconomic maxim:

Public resources are really *private*, owned and exploited by a political elite, while private resources are really *public*, owned and managed by a multitude. Government-owned resources do not “belong to all of the people” and allow “self-determination,” they belong to none or a very few.<sup>101</sup>

Private property rights, protected by the rule of law, define the wealth of nations. In *Principles of Political Economy* (1836), Thomas Malthus mentioned security of property as vital, “without a certain degree of which, there can be no encouragement to individual industry.”<sup>102</sup> This powerfully applies to the subsoil, where minerals and energy stocks await liberation for the masses as royalty owners and consumers.

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<sup>101</sup> Robert Bradley Jr., foreword to *Subsurface Wealth: The Struggle for Privatization in Argentina* by Guillermo M. Yeatts (Irvington-on-Hudson, NY: Foundation for Economic Education, 1997), p. viii.

<sup>102</sup> T. R. Malthus, *Principles of Political Economy*, 2nd ed. (1836; repr. New York: Augustus Kelley, 1951), p. 309.