Journal of Economic Perspectives—Volume 38, Number 4—Fall 2024—Pages 111–130

Alexander Hamilton's *Report on Manufactures* and Industrial Policy

Richard Sylla

Current proponents of industrial policy in the United States sometimes refer to Alexander Hamilton's December 1791 *Report on the Subject of Manufactures* (hereafter *Manufactures*) as an early endorsement of industrial policy, and a precedent for the sorts of industrial policies they would like to see implemented in our own time. After all, if Hamilton—a leading founder of the United States, a framer of its Constitution, its first Secretary of the Treasury, and the hero of a celebrated Broadway musical—was for industrial policy, how could anyone be against it? In Hamilton's time, of course, many notable thinkers and policy-makers were against industrial policy, just as many are today.

Hamilton did not espouse state-directed economic development, contrary to the views sometimes attributed to him positively (Cohen and DeLong 2016; Parenti 2020) or negatively (DiLorenzo 2009; Hogeland 2024). He favored tariffs as the most practical way of raising government revenue in the 1790s. But he opposed raising those tariffs to truly protective levels, and his Federalist political party suffered in popularity as a result. Hamilton designed his policies to create a sound system of banking and finance for the capital needs of the government and American entrepreneurs; to use infrastructure, innovation, and technology diffusion to speed up economic growth and diversification; and to support industries crucial to

■ *Richard Sylla is Professor Emeritus of Economics, Stern School of Business, New York University, New York City, New York. He is also a Research Associate, National Bureau of Economic Research, Cambridge, Massachusetts. His email address is rs5@stern.nyu.edu.*

For supplementary materials such as appendices, datasets, and author disclosure statements, see the article page at https://doi.org/10.1257/jep.38.4.111.

US national defense in a world dominated by marauding European empires. He was writing at a time when export-driven growth seemed impossible, because of barriers to trade imposed by European empires. His focus, therefore, was on how a mostly agrarian society could benefit from increased domestic demand for its products through a growing manufacturing sector. To those ends, and in those ways, he wanted government to develop a broader economic context that was favorable for the future growth of manufacturing.

Despite the historical significance of *Manufactures* and its possible relevance to current discussions of industrial policy, economists have paid little attention to it. Unless they have an interest in economic history, the history of economic thought, or US history, there perhaps is little reason they should. Those who have studied it are laudatory. Schumpeter (1954, p. 199) says that *Manufactures* ". . . is really 'applied economics' at its best. . . ."[1] More recently, Irwin (2017, p. 80) writes, "This brilliant report ranks among the most important and influential policy documents in US history." McCraw (1994, p. 32), a business historian, considering *Manufactures* in the context of Hamilton's comprehensive program for US economic modernization, concludes, "Hamilton was the first systematic macroeconomic planner in the United States and one of the first in any country."

My goal here is to make Hamilton's *Manufactures* more familiar to economists in general, and especially to those involved in debates over industrial policy. I begin by clarifying the question that Hamilton was addressing at the time: Should the United States even consider becoming a manufacturing nation? I then place *Manufactures* in the context of the comprehensive program of financial and economic modernization that Hamilton advocated, and Congress largely enacted, after he became the first US Secretary of the Treasury in 1789. Next, I survey the content and arguments of *Manufactures*. I point out how policymakers implemented Hamilton's recommendations, initially and over time. Finally, I take up the practical effects of the policies in the context of nineteenth-century US economic growth and development.

Did the US Economy Even Need Manufacturing?

Debates about industrial policy in the 2020s differ greatly from those of the 1790s.[2] Few people today question the legitimacy of modern manufacturing technologies. For more than two centuries, such technologies have contributed mightily to unprecedented economic growth and development. Some term this "the Great

[1] Schumpeter (1954, p. 199) adds in a footnote that Hamilton "was one of those rare practitioners of economic policy who think it worthwhile to acquire more analytic economics than that smattering that does such good service in addressing audiences of a certain type. He knew Smithian economics well—not only Adam Smith himself—so well in fact as to be able to mold it to his own visions of practical possibilities or necessities and to perceive its limitations. All his reports . . . are much more than untutored common sense."

[2] For a nearly encyclopedic account of the pros and cons of industrial policy, including historical country case studies of where it worked and where it did not, see Fasteau and Fletcher (2024).

Enrichment," resulting in real per capita incomes of today's developed economics that are 30 or more times greater than two centuries ago (McCloskey and Carden 2020).

Much of the industrial-policy debate today occurs in mature industrial or even postindustrial economies. One issue is whether governments should intervene to alter the course that established manufacturing industries and other economic sectors might otherwise take. Proponents argue that such interventions will improve overall economic efficiency, and achieve other, perhaps noneconomic, objectives. Opponents deny that governments have any special capability to do this, and claim that attempts to do it are likely to degenerate into corruption and crony capitalism.

In the United States of the 1790s, however, many people—including some leading founders—questioned whether the country should even consider becoming a manufacturing nation. Such opponents of manufacturing could point to the new nation's abundant and mostly unsettled land resources, its high wages, and its lack of capital to justify a mostly agricultural future. The only exception that opponents of American manufacturing might allow involved considerations of national security. Congress, following up on a request from President George Washington in January 1790, asked Hamilton to report on the subject of manufactures, "and particularly to the means of promoting such as will tend to render the United States, independent on foreign nations, for military and other essential supplies" (Hamilton 1791, p. 230). Fresh in the minds of national leaders were the difficulties of equipping American military forces during the War of Independence.

Opponents of American manufacturing could point to Adam Smith's (1776) recently published *Wealth of Nations*, which a number of American leaders had studied, for justification of their position. Smith (1776, pp. 347–48) pointedly argued, for example:

> Were the Americans, either by combination or by any other sort of violence, to stop the importation of European manufactures, and, by thus giving a monopoly of such of their own countrymen as could manufacture the like goods, divert any considerable part of their capital into this employment, they would retard instead of accelerating the further increase in the value of their annual produce, and would obstruct instead of promoting the progress of their country towards real wealth and greatness.

Smith's mention of "combination" and "violence" no doubt referred to American boycotts of British imports in the revolutionary ferment of the early 1770s, when he was writing. But he likely was also thinking about what economists would later term "comparative advantage." The Americans had a lot of land and were short of both labor and capital. With such a combination of resources, manufacturing seemingly made little sense. At other places in *Wealth of Nations*, Smith agreed with the French physiocrat school of economics that agriculture was the most productive economic activity, although he disagreed with them that it was the only productive activity (Smith 1776, pp. 344–45). In any case, Smith's advice to Americans was to stick to agriculture.

A few years later, Thomas Jefferson (1785, pp. 252–53) agreed with Adam Smith that Americans should stick to farming:

> In Europe the lands are either cultivated, or locked up against the cultivator. Manufacture must therefore be resorted to of necessity not of choice, to support the surplus of their people. But we have an immensity of land courting the industry of the husbandman. Is it best then that all our citizens should be employed in its improvement, or that one half should be called off from that to exercise manufactures, and handicraft arts for the other? Those who labour in the earth are the chosen people of god. . . . [G]enerally speaking, the proportion which the aggregate of the other classes of citizens bears in any state to that of its husbandmen, is the proportion of the unsound to its healthy parts. . . . While we have land to labour then, let us never wish to see our citizens occupied at a work-bench, or twirling a distaff. Carpenters, masons, smiths are wanting in husbandry: but, for the general operations of manufacture, let our work-shops remain in Europe.

Facing such authoritative opposition to American manufacturing on both sides of the Atlantic, Hamilton had his work cut out for him. He therefore began *Manufactures* with an extended discussion of why the United States should become a manufacturing nation with a diversified agricultural/manufacturing/commercial economy. He agrees with some of Adam Smith's teachings and disagrees with others. Indeed, *Manufactures* is one of the first extended commentaries on the *Wealth of Nations*, although Hamilton made it far from easy for his readers to see this. He paraphrases Smith without attribution. At one place in *Manufactures*, he directly quotes Smith without naming him. He does mention Smith in the marginalia of the third draft of *Manufactures*, but the text refers to him only as "a judicious writer." Hamilton wrote to persuade Congress, not to make it easy for historians of economic thought to trace the origins of his ideas by including footnotes to his sources.[3]

Hamilton, ahead of his time, saw modern manufacturing technologies as the wave of the future, although they barely existed in the United States—or anywhere except England, and even there only recently. His objective was to convince Congress that going down that road was in the national interest, and to speed up the trip by enacting policy measures to "encourage" (his oft-used term) the development of modern manufacturing.

Given the different contexts of the 1790s and the 2020s, it might be more accurate to view Hamilton's *Manufactures* as less about "industrial policy" as that term is currently understood, and more about "industrialization policy" for an

[3]Those interested in Hamilton's possible sources of information used in writing *Manufactures* should read the extensively introduced and footnoted version in *The Papers of Alexander Hamilton* (Hamilton 1791, pp. 236–340). It is the one cited here. Fortunately, that version is now easily accessible at the website "Founders Online" sponsored by the Library of Congress.

undeveloped, overwhelmingly agricultural economy in a world economy with little modern manufacturing and virtually no prospects for free international trade. In late eighteenth century Great Britain, what much later would be termed "the Industrial Revolution" snuck up unannounced. By contrast, in the United States, Hamilton and a few others foresaw the Industrial Revolution and espoused public policies to accelerate it.

Manufactures in the Context of Hamilton's Plan for US Economic Modernization

By the time Hamilton delivered *Manufactures* to Congress in December 1791, he already had three notable policy successes: establishing a market for federal debt, a national bank with branches around the country, and a bimetallic currency standard. He refers to these steps in *Manufactures* as already working, to allay fears that the United States was ill-prepared for modern manufacturing because, most notably, it lacked the capital that would be required. Hence, *Manufactures* is in part an early report on how Hamilton saw his plans for modernization of the US economy progressing.

Hamilton's first success came in the summer of 1790 when Congress, after much debate and deal-making, enacted the essence of his plan for establishing the credit of the new federal government. The backdrop was the accumulation of national and state debts that resulted from the War of Independence. These debts had largely been unpaid, accumulating arrears of interest, because national and state governments lacked the revenues or the will, or both, to pay them. Hamilton's plan called for federal assumption of state debts, and restructuring the enlarged national debt via voluntary exchanges of old debt at par, but at a reduced rate of interest, for new debt securities. The new debt was "funded," meaning that specific government revenues were pledged to pay the interest and, when possible, the principal. Exchanges of old debt for new began in late 1790. The new federal securities rose rapidly in value, and they were actively traded in organized markets that arose in major cities. This was the birth of US Treasury bond market.

Hamilton's second notable policy success came in February 1791 when Congress enacted his plan for a national bank, the Bank of the United States. Washington's cabinet divided on the issue of the Bank's constitutionality; the president sided with Hamilton's broad construction of constitutional powers. In the corporate charter of the Bank of the United States, written by Hamilton, private stockholders would own 80 percent of the corporation's shares and elect its management; the federal government took a 20 percent stake and had oversight. The Bank would serve as the government's fiscal agent, assist it with managing the national debt, and lend it money. The Bank of the United States could (and did) open branches around the country, and engage in ordinary commercial banking by taking deposits and making loans. The bank's charter served as a model for states to emulate as they proceeded to charter more banks and other corporations (Bodenhorn 2010; Sylla,

Legler, and Wallis 1987). The home office of the Bank of the United States opened in December 1791 in Philadelphia, then the national capital, the same month Hamilton presented *Manufactures* to Congress.

A third policy success came in 1792, after *Manufactures*, when Congress established a US mint along the lines set out in Hamilton's Mint Report of January 1791. In that report, Hamilton defined the new US dollar in terms of silver and gold, establishing a bimetallic monetary base for the country. The report had no immediate bearing on his policies for encouraging manufacturing. In the longer run, however, a common currency area among US states facilitated interstate trade for manufactures and other goods and services.

A Tour of *Manufactures*

Hamilton begins *Manufactures* by making a case for why the United States needed to encourage manufacturing. International trade was far from free in the 1790s. The leading foreign nations—Britain, France, and Spain—each had a population several times larger than that of the United States, which then was about four million. Moreover, each controlled a vast overseas empire and had mercantilist trade policies that in practice restricted or excluded the newly independent Americans from trading the surplus commodities of US farms, forests, and fisheries with either the home country or its colonies. Therefore, Hamilton (1791, p. 230) wrote, many Americans had "an earnest desire, that a more extensive demand for that surplus may be created at home." Domestic manufacturing, he would go on to argue, could provide that demand, and government policies should encourage it.

Refuting Arguments Unfriendly to Encouraging *Manufactures*

To a modern reader, aware of industrialization's contributions to the Great Enrichment of the past two centuries, the early pages of *Manufactures* might seem odd. In them, Hamilton paraphrases, often in passages set off by quotation marks, the economic arguments of Adam Smith and others to the effect that a country such as the United States should stick to agriculture. One argument is straight *laissez faire*: "[I]t can hardly ever be wise in a government to attempt to give a direction to the industry of its citizens. This under the quicksighted guidance of private interest, will if left to itself, infallibly find its way to the most profitable employment, and . . . the public prosperity will be most effectually promoted. To leave industry to itself, therefore, is, in almost every case, the soundest as well as the simplest policy" (Hamilton 1791, p. 232).

Another claim for the primacy of agriculture is that the situation of the United States in 1791—small population, vast land resources, scarce labor, high wages, and a scarcity of capital—meant that "a successful competition with the manufactures of Europe must be regarded as little less than desperate. Extensive manufactures can only be the offspring of a redundant, at least a full population" (Hamilton 1791,

p. 233). In essence, this was the argument of Jefferson, who likely picked it up from Adam Smith.

Hamilton countered that these arguments, while having "certainly respectable pretensions," did not actually govern the conduct of nations. They were based, moreover, on the notion that "[a]griculture is, not only, the most the most productive . . . species of industry" (as Adam Smith contended), but that agriculture was "the only productive species," as the French physiocrats asserted. In both cases, Hamilton (1791, p. 240) deemed the notion "both quaint and superficial. It amounts to this—That in the production of the soil, nature co-operates with man; and the effect of their joint labour must be greater than that of the labour of man alone." Hamilton (1791, pp. 240–241) noted that in manufacturing, nature—say, in the form of water-powered machinery—also cooperated with man:

> It is very conceivable, that the labour of man alone laid out upon a work, requiring great skill and art to bring it to perfection, may be more productive, *in value* [italics in the original], than the labour of nature and man combined, when directed towards more simple operations and objects: And when it is recollected to what an extent the Agency of nature, in the application of the mechanical powers, is made auxiliary to the prosecution of manufactures, the suggestion, which has been noticed, loses even the appearance of plausibility.

Hamilton (1791, pp. 241–42) completes his refutation of the economic superiority of agriculture by noting that labor in agriculture is "periodical and occasional, depending on seasons," while labor in manufacturing is "constant and regular, extending through the year, embracing in some instances night as well as day. . . . And if it may likewise be assumed as a fact, that manufactures open a wider field to exertions of ingenuity than agriculture, it would not be a strained conjecture, that the labour employed in the former, being at once more *constant* [italics in original], more uniform and more ingenious, than that which is employed in the latter, will be found at the same time more productive."

Why Manufacturing Makes a Positive Contribution to Economic Growth

Hamilton (1791, p. 249) next lists and discusses seven reasons why manufacturing establishments would make the total product and income—his terms were "Produce" and "Revenue"—of a country "greater than they could possibly be, without such establishments." Most items on the list are familiar to modern economists. The list:

1. The division of Labour.
2. An extension of the use of Machinery.
3. Additional employment to classes of the community not ordinarily engaged in business.
4. The promoting of emigration from foreign Countries.

> 5. The furnishing greater scope for the diversity of talents and dispositions which discriminate men from each other.
> 6. The affording a more ample and various field for enterprize.
> 7. The creating in some instances a new, and securing in all, a more certain and steady demand for the surplus produce of the soil.

The first item Hamilton takes from Adam Smith and discusses in Smithian terms. To illustrate the second, Hamilton (1791, p. 252) cites "[t]he Cotton Mill invented in England, within the last twenty years. . . . [A]ll the different processes for spining (sic) cotton are performed by means of Machines, which are put in motion by water, and attended chiefly by women and children. . . . And it is an advantage of great moment that the operations of this mill continue with convenience, during the night as well as through the day. . . . To this invention is to be attributed essentially the immense progress, which has been so suddenly made in Great Britain in the various fabrics of Cotton."

Hamilton explains the third item on his list in terms of increased labor force participation. Women and children were underemployed in American agriculture, the country's predominant economic activity. Manufacturing enterprises would provide them with job opportunities and cash incomes. Modern readers might question whether employing children in manufacturing was a good thing. But such thinking is anachronistic; in America and the world of 1791, children often worked at early ages. Manufacturing would also provide "occasional and extra employment to industrious individuals and families" when they were seasonally idle. He likely was referring to farmers and their families in the off-seasons.

Items 4–6 on Hamilton's list are almost self-explanatory. A diversified economy, with agricultural, commercial, and manufacturing sectors, would appeal to a wider range of immigrants, thereby alleviating America's labor shortage: "[T]he results of human exertion may be immensely increased by diversifying its objects" (Hamilton 1791, pp. 255–56). Moreover,

> The spirit of enterprise, useful and prolific as it is, must necessarily be contracted or expanded in proportion to the simplicity or variety of the occupations and productions, which are to be found in a Society. It must be less in a nation of cultivators, than in a nation of cultivators and merchants; less in a nation of cultivators and merchants, than in a nation of cultivators, artificers and merchants.

Item 7 on the list harks back to the beginning of *Manufactures*, where Hamilton indicated that the mercantilist regulations of the European empires made it difficult for the United States to export its surplus agricultural commodities. Mercantilist policies, Hamilton (1791, p. 258; italics in the original) now says, "sacrifice the interests of a mutually beneficial intercourse to the vain project of *selling everything* and *buying nothing*." They made the foreign demand for the products of American agriculture "casual and occasional" rather than "certain or constant." The United

States therefore needed a "an extensive domestic market," Hamilton (1791, p. 258) argued: "To secure such a market, there is no other expedient, than to promote manufacturing establishments. Manufacturers who constitute the most numerous class, after the Cultivators of land, are for that reason the principal consumers of the surplus of their labor."

Hamilton (1791, pp. 262–65) next shows that he knew his Adam Smith, and also knew why Smith's keen theoretical insights were not relevant to the situation faced by the United States:

> If the system of perfect liberty to industry and commerce were the prevailing system of nations—the arguments which dissuade a country in the predicament of the United States, from the zealous pursuit of manufactures would doubtless have great force. . . . But the system which has been mentioned, is far from characterizing the general policy of nations. [The prevalent one has been regulated by an opposite spirit.]
>
> The consequence of it is, that the United States are to a certain extent in the situation of a country precluded from foreign Commerce. They can indeed, without difficulty obtain from abroad the manufactured supplies, of which they are in want; but they experience numerous and very injurious impediments to the emission and vent of their own commodities. . . . The regulations of several countries, with which we have the most extensive intercourse, throw serious obstructions in the way of the principal staples of the United States. . . .
>
> If Europe will not take from us the products of our soil, upon terms consistent with our interest, the natural remedy is to contract as fast as possible our wants of her.

Refuting Other Objections to a Policy of Encouraging *Manufactures*

Hamilton then considers and refutes a number of additional arguments against government encouragement of manufacturing.

The first is a repeat of the *laissez-faire*, Adam Smith doctrine that "[i]ndustry, if left to itself, will naturally find its way to the most useful and profitable employments" without government aid (Hamilton 1791, p. 266). Hamilton answers that people are risk averse and reluctant to launch untried ventures. Also, the "long matured establishments of another country" make it difficult for new domestic ventures to compete on quality and price—what has become known as the infant-industry argument. Most problematic of all for would-be American manufacturers, however, was that other countries extensively subsidized the exports of "the establishments to be imitated." Hamilton (1791, pp. 266–68) hence concludes: "To produce the desireable (sic) changes, as early as may be expedient, may therefore require the incitement and patronage of government."

He next discusses contentions that manufacturing in the young United States could not be successful because of the "scarcity of hands—dearness of labour—want of capital." Hamilton (1791, pp. 269–71) admitted that the first two were obstacles, largely because the availability of cheap and fertile land on the frontier was a magnetic attraction for people in the more fully settled regions of the country. But, he noted, the US economy did have settled regions, and they were already engaged in manufacturing pursuits. He reiterates that women, children, and immigrants would become new sources of labor. His strongest emphasis, however, is machinery as a substitute for labor: "the vast extension given by the late improvements to the employment of Machines, which substitute the Agency of fire and water, has prodigiously lessened the necessity for manual labor."

Machinery, of course is a capital investment, and the United States supposedly had a shortage of capital. Not so, says Hamilton, in moving to a discussion of considerations that "remove all inquietude on the score of a want of Capital." In this part of *Manufactures*, Hamilton points with pride to the successes his previous fiscal and banking reforms were already having. New banks were lending, and foreign investors were transferring capital to the United States by purchasing Treasury bonds, shares in the Bank of the United States, and other corporate securities (Sylla, Wilson, and Wright 2006). Hamilton (1791, pp. 274–76) notes:

> The introduction of Banks . . . has a powerful tendency to extend the active Capital of a Country. Experience of the Utility of these Institutions is multiplying them in the United States. It is probable that they will be established wherever they can exist with advantage. . . .
>
> The aid of foreign Capital may safely . . . be taken into calculation. Its instrumentality has long been experienced in our foreign commerce, and it has begun to be felt in various other modes. Not only our funds [the national debt], but our Agriculture and other internal improvements have been animated by it. It has already in a few instances extended even to our manufactures. . . .
>
> It is at least evident, that in a Country situated like the United States, with an infinite fund of resources yet to be unfolded, every farthing of foreign capital, which is laid out in internal ameliorations, and in industrious establishments of a permanent nature, is a precious acquisition.

Most of Hamilton's discussion of why a supposed lack of capital was not a barrier to manufacturing, however, dealt not with banks and foreign capital, but to his restructuring of the national debt. "It happens," Hamilton (1791, p. 277) says, "that there is a species of Capital actually existing within the United States, which relieves from all inquietude on the score of a want of Capital—This is the funded Debt. . . . Public Funds answer the purpose of Capital, from the estimation in which they are usually held by Monied men; and consequently from the Ease and dispatch with which they can be turned into money."

What Hamilton meant was that the liquid securities markets emerging in major US cities in the early 1790s, together with a growing number of banks, made it possible for holders of public debt to sell their securities easily to gain money to finance other investments, or to collateralize the securities for bank loans for the same purpose. Sylla (1998; relying on Davis 1917) indicates that by 1792, banks accepted the new 6 percent US debt securities at 100 percent of par value as loan collateral.

For these reasons, "The operation of public funds as capital is too obvious to be denied." Of course, some writers, notably Adam Smith with his unfavorable view of public debt, did deny that more public debt could increase the capital of a country, and might even decrease the capital of a country if public debt crowded out private investment. Hamilton (1791, pp. 281–83, italics in original) spends several pages analyzing this issue, concluding:

> [I]t is important to distinguish between an *absolute increase of Capital, or an accession of real wealth, and an artificial increase of Capital*, as an engine of business, or as an instrument of industry and Commerce. In the first sense, a funded debt has no pretensions to being deemed an increase in Capital; in the last, it has pretensions which are not easy to be controverted. Of a similar nature is bank credit and in an inferior degree, every species of private credit. . . .
>
> [A]s far as the nature of the subject admits of it, there appears to be satisfactory ground for a belief, that the public funds operate as a resource of capital to the Citizens of the United States, and, if they are a resource at all, it is an extensive one.

What Hamilton did not directly say, but must have had in mind, is that his public-debt restructuring by December 1791 had greatly increased the market value of the national debt since he took office in September 1789. At the earlier date, the par value of the federal debt was $52.2 million (not including the later federal assumption of state debts), and its market value was $22.5 million. The market value was thus only 43 percent of the par value. By December 1791, the par value of the national debt (now including assumed state debts) was $77.3 million, and its market value risen to $69.6 million. If the roughly $20 million par value of assumed state debts had the same market value discount of 43 percent as the federal debt, its market value would have been $8.1 million, making the sum of federal and state debts have about $31.1 million in market value in 1789. This was far below the $69.6 million at which the market valued them a little more than two years later. (For context, in 1792, the first year the Treasury paid interest on assumed state debts, federal expenditures were $5.1 million, revenues $3.7 million, and the resulting deficit of $1.4 million raised the total national debt at par to $80.4 million. Rough estimates of US GDP at this time place it as around $200 million.)

Hamilton's policies thus had increased the wealth of public creditors by about $38.5 million, in the same way a rise in the stock market or in house values raises

the wealth of those asset owners today.[4] This increase in the capital was potentially available for investment. Studies of Treasury documents, moreover, indicate that the public debt was more widely held than earlier historians had supposed (Wright 2008). Hamilton had good reasons to take pride in the increased access to capital fostered by his policies.

After citing 17 areas of US manufacturing that had "grown up and flourished with a rapidity which surprises" (Hamilton 1791, pp. 283–84), Hamilton goes on to tout the benefits of a diversified agricultural, commercial, and manufacturing economy (Hamilton 1791, pp. 287–92). A diversified economy offers consumers a great variety of goods and services, and it reduces the risks of stagnation that an undiversified, agricultural economy faces when demand for its produce declines.

Finally, in this refutation section of *Manufactures*, Hamilton takes up perceptions of conflicts of interest between agriculturalists and manufacturers in the early years of the country. Some Southerners shared Jefferson's notions of agriculture as a way of life, and disliked Hamilton's plan to use national revenues to encourage manufacturing because most manufacturing was located in the New England and Middle Atlantic states. Northern manufacturers, although Hamilton does not get into this, wanted protection against the competition of imported manufactures and would come to view the rapid expansion of western agriculture as drawing away from them the supply of industrial labor and raising the wages they had to pay.

Hamilton denies any such conflicts of interests, saying that it is "a maxim well established by experience . . . that the aggregate prosperity of manufactures, and the aggregate prosperity of Agriculture are intimately connected." Because most proponents of the supposed conflict were southerners, Hamilton (1791, pp. 293–95) counters their doubts by noting that much manufacturing at the time involved processing the outputs of agriculture, forestry, and mining. Therefore, the farmers of the South and the North would benefit by a growing demand for their inputs by the expansion of manufacturing. A formal economic modeling exercise of the varied interests, conducted two centuries later, concluded that Hamilton was correct on these issues (Passell and Schmundt 1971).

Policy Tools to Encourage *Manufactures*

How did other countries promote their manufactures? Hamilton (1791, pp. 296–311) provides and discusses the pros and cons of a long list of policies:

I Protecting duties—or duties on those foreign articles which are rivals of the domestic ones, intended to be encouraged . . .
II Prohibitions of rival articles or duties equivalent to prohibitions . . .
III Prohibitions of the exportation of the materials of manufacture . . .
IV Pecuniary bounties . . .

[4]The par and market values of the national debt are from a spreadsheet compiled by George Hall, and shared with me by Thomas Sargent. They are described in Hall, Payne, and Sargent (2018).

V Premiums . . .
VI The Exemption of the Materials of manufactures from duty . . .
VII Drawbacks of the duties which are imposed on the Materials of Manufactures . . .
VIII The encouragement of new inventions and discoveries, at home, and of the introduction into the United States of such as may have been made in other countries; particularly those, which relate to machinery . . .
IX Judicious regulations for the inspection of manufactured commodities . . .
X The facilitating of pecuniary remittances from place to place . . . by rendering more easy the purchase of raw materials and the payment for manufactured supplies . . .
XI The facilitating of the transportation of commodities.

In his discussion of these policy tools, Hamilton (1791, pp. 296–97) notes that the United States already had mildly protective (not prohibitive) duties on many imports, which in fact were the federal government's main source of revenue from the 1790s to the 1860s. To promote manufacturing, he argued, such import duties should not fall on raw materials.

Prohibitive duties obviously encouraged domestic manufactures, but were "only fit to be employed when a manufacture, has made such a progress and is in so many hands as to insure a due competition, and an adequate supply on real terms" (Hamilton 1791, p. 297).

Hamilton (1791, pp. 297–98) was skeptical about export prohibitions. He was fond, however, of "bounties," which we call "subsidies," on several grounds. One was that bounties, unlike tariffs, encouraged manufacturing without raising prices to consumers. Another was that unlike high protecting duties, bounties did not tend to create scarcities. But "continuance of bounties on manufactures long established must almost always be of questionable policy" (Hamilton 1791, pp. 300–301). Despite his preference for bounties over protective tariffs, Hamilton noted: "There is a degree of prejudice against bounties from an appearance of giving away the public money . . . and from a supposition that they serve to enrich particular classes, at the expence of the Community." In fact, Congress would reject the bounties Hamilton proposed.

"Premiums"—essentially prizes—were akin to bounties, but more specific than general. They "serve to reward some particular excellence or superiority, some extraordinary exertion of skill. . . . But their effect is to stimulate general effort" (Hamilton 1791, pp. 304–05).

Hamilton thought that, with a few exceptions, it was good policy to exempt raw materials used by manufacturers from import duties. If the United States imposed duties on such materials, a "drawback," in the form of a refund of the duty paid by the domestic manufacturer, would be appropriate for manufactures to be particularly encouraged—but only for infant, not mature, industries.

Hamilton also thought that the encouragement to inventors and authors provided by patents and copyrights ought to extend to "Introducers" of foreign

improvements to the United States. He suggests that the foreign introducer, not necessarily the inventor, of an improvement receive US patent protection, but admits that an authority to do that was questionable. As an alternative, toward the end of *Manufactures* he would suggest (Hamilton 1791, pp. 338–40) the establishment and funding of a Board to encourage and pay for the transfer of important foreign technologies and the migration of workers skilled in them to the United States. Hamilton (1791, pp. 308–09) lamented the "selfish and exclusive policy" of other countries that sought to prevent technological transfers. As a public official, he had to respect other nations' intellectual property and laws. Unofficially, he and other American officials encouraged to a considerable extent the pirating and smuggling of protected foreign technologies (Ben-Atar 2004).

Regulated inspection of American manufactures to weed out shoddy goods would be a form of quality control that would both protect domestic consumers and increase the reputation of US exports (Hamilton 1791, pp. 308–09).

As regarded facilitating pecuniary remittances, a "general circulation of Bank paper" such as the currency notes of the Bank of the United States would aid interstate payments for raw materials and manufactured products. He further suggested that national rules making inland bills of exchange drawn in one state and payable in another negotiable everywhere would be another aid to interstate commerce (Hamilton 1791, pp. 309–10).

To justify the last item on his list of policy tools, transportation improvements, Hamilton approvingly introduces a long direct quotation from Adam Smith, without identifying Smith as the author. Among other things, Smith said these were "the greatest of all improvements" (Hamilton 1791, p. 311). Hamilton favored a national plan of transportation improvements, and direct aid from the federal government to implement it. From the 1790s to the 1860s, constitutional issues and clashing state interests undermined such a national program. During those decades, state and local governments would plan and execute nearly all internal transportation improvements.

Specific Policy Recommendations

In the final pages of *Manufactures*, Hamilton proposes increases and reductions in existing tariffs for some manufactures and raw materials, and bounties for others. The affected manufactures and raw materials included iron, copper, lead, coal, wood, skins, grain, flax and hemp, cotton, wool, silk, glass, gun powder, paper, printed books, and refined sugars and chocolate.[5] Hamilton (1791, pp. 313–14)

[5] In his discussion of cotton, almost as an aside, Hamilton (1791, p. 328) writes: "[I]t may be announced, that a society is forming with a capital which is expected to be extended to at least half a million of dollars; on behalf of which measures are already in train for prosecuting on a large scale, the making and printing of cotton goods." This was the Society for Establishing Useful Manufactures. What Hamilton did not say is that he himself had selected the site in Paterson, New Jersey, where the Passaic River offered waterpower to run machinery. He also authored the Society's corporate charter and worked to ensure its enactment in 1791 by the New Jersey legislature. The Society was a mixed success. Mismanagement prevented it from opening the factories it intended to build in the 1790s as demonstration projects. But the corporation continued to provide sites and power for other entrepreneurs into the twentieth

selected these industries based on five criteria: "the capacity of the Country to furnish the raw material—the degree in which the nature of the manufactures admits of a substitute for manual labour in machinery—the facility of execution—the extensiveness of the uses, to which the article can be applied—its subserviency to other interests, particularly the great one of national defense."

The details of Hamilton's tariff recommendations need not detain us here. Irwin (2004, pp. 812–13) nicely summarizes them in a one-page table, and makes some pertinent points. One is that, despite what many historians said about him, Hamilton was not a protectionist: "The import duties he proposed were quite modest in comparison to what domestic manufacturers would have liked (and in comparison to those imposed later in the nineteenth century)." Duties already in effect in 1791 ranged from 5 to 12.5 percent ad valorem. Hamilton's proposals changed this range from zero to 15 percent. The modest duties caused manufacturers who desired more protection to shift their political support away from Hamilton's Federalist Party and toward Jefferson's Democratic Republican Party, which favored tougher measures to reduce imports from Britain, the leading trading partner of the United States. Hamilton and his Federalist party would pay a political price for their support of moderate tariffs for revenue instead of high tariffs to protect manufacturers.

According to Irwin (2004, pp. 813–14), Hamilton in *Manufactures* "was skeptical of high protective tariffs because they sheltered inefficient and efficient producers alike, led to high prices for consumers, and gave rise to smuggling, which cut into government revenue." And Hamilton very much needed more revenue. Federal revenues, mostly from customs duties, were not sufficient to cover interest payments on the national debt and fund the government's ordinary operations until the last year (1794–1795) of Hamilton's tenure as Treasury Secretary. In the interim, to cover the revenue shortfall, Hamilton had to borrow from domestic and foreign sources (Sylla 2010).

One policy proposal toward the end of *Manufactures* deserves special attention. In discussing iron, the manufacture of which he deemed "entitled to preeminent rank," Hamilton (1791, pp. 314–17) proposed a tariff of 15 percent, his top rate, on imports of firearms and other military weapons. Weapons manufacturers already existed and "only require the stimulus of a certain demand to render them adequate to the supply of the United States." To ensure that demand, he proposed that the federal government make annual purchases of weapons of domestic manufacture, store them in government arsenals, and replace any withdrawals. He further proposed that that the government itself should consider manufacturing weapons, as an exception to the "general rule" that "manufactories on the immediate account of Government are to be avoided." Congress adopted the essence of Hamilton's proposals (as discussed below), which had beneficial long-term effects on US technological development and industrial growth. National security and economic growth continue to be objectives of current industrial policies.

---

century, and Paterson became a major center of American manufacturing (Davis 1917). There is now a Paterson National Historical Park to commemorate these Hamiltonian industrial origins.

Practical Effects of *Manufactures*

Congress received, debated, and enacted the essential provisions of Hamilton's earlier reports on Public Credit in 1790 (Hamilton 1790a, pp. 65–110), the National Bank (Hamilton 1790b, pp. 305–42), and a Mint (Hamilton 1790b, pp. 570–607). In the case of *Manufactures*, it only received the report; there was no debate on it, and no comprehensive enactment of its policy proposals.

There are, however, two examples of quick adoption of Hamilton's recommendations. Within months of receiving *Manufactures*, Congress in 1792 adopted most of Hamilton's recommended tariff modifications. They did so, however, less to encourage manufacturing than to gain revenue to fund increases in military spending after a disastrous rout of a US army by Native American forces on the western frontier (Irwin 2004).

Then in 1794, Congress passed "An Act to provide for the erecting and repairing Arsenals and Magazines, and for other purposes" (Peters 1845–1867, p. 352). The act led to the establishment of arsenals and armories owned and operated by the federal government, as Hamilton had suggested in *Manufactures*. Over subsequent decades, these public enterprises, especially the federal armory at Springfield, Massachusetts, became hotbeds of technological development in machine tools, standardized interchangeable parts, and mass production (Smith 1977). By the middle of the nineteenth century, American armaments-making technology was second to none. British officials came to the United States in the 1850s to study the technology and to purchase it for Britain's armories.

As the nineteenth century unfolded and the United States would pass Britain to become the leading manufacturing nation, policymakers only sometimes chose a Hamiltonian path, and not always in ways Hamilton had suggested. US tariffs first became consciously protective in 1816, and rose to still higher levels of protection amidst political controversy in 1824 and 1828. Before 1816, international trade was severely disrupted by the protracted Napoleonic wars in Europe, the US embargo of 1808 (in which the US passed a law forbidding US imports and exports) and related trade restrictions, and the War of 1812 between the United States and Britain. Import disruptions of that time stimulated domestic manufacturing, especially in mechanized cotton spinning. When peace came in 1815, Britain flooded the United States with manufactured imports, prompting cries for protection, to which Congress responded. Britain clearly intended to squelch nascent US manufacturing by dumping its manufactures on American markets. Henry Lord Brougham, a member of Parliament, wrote, "It was well worthwhile to incur a loss upon the first exportation in order by glut to stifle in the cradle those rising manufactures in the United States which the war has forced into existence contrary to the usual course of nature" (quoted by Higgins 2024, p. 30).

The US government did not implement transportation improvements according to the sort of comprehensive national plan that Hamilton recommended in *Manufactures*, and that Albert Gallatin, Jefferson's Treasury Secretary, would endorse in a lengthy report on roads and canals delivered in 1808. National

politics and presidential vetoes repeatedly defeated proposals for federal involvement in this area. Instead, until the 1860s, state and local governments would do most of the sponsoring and financial supporting of roads, canals, river and harbor clearing, and railroad building. Still, substantial public investments did occur, and the use of federal budget surpluses to pay off the national debt aided state government borrowing to fund them. Domestic transportation costs fell dramatically, extending and linking markets in the ways that both Adam Smith and Hamilton had envisioned.

After 1860, US economic policy became more decidedly Hamiltonian. Congress raised tariffs, first to help finance the Civil War and then to generate surpluses that gradually paid down the war debt during the late nineteenth century. In 1863–1864, it established a national banking system and introduced a uniform national currency backed by the federal government to replace the previous system in which thousands of state-chartered banks issued their own currencies. The US government went well beyond Hamilton's board to promote arts, agriculture, manufacturing, and commerce by establishing both a Department of Agriculture and land-grant colleges to foster research and education in agriculture and the mechanic arts. It encouraged railroad building with grants of federal land along the routes that railway companies developed, and authorized financial subsidies from the Treasury for some railway companies. In the Homestead Act of 1862, which granted free federal land to settlers who would live for a time on the land and develop it, Congress went beyond anything Hamilton had recommended. The act did stimulate immigration, which was one of Hamilton's goals to alleviate labor scarcity.

During what economic historians call the "long nineteenth century" from 1789 to 1915, US industrial production rose dramatically. According to the Davis index (Davis 2004), industrial production expanded steadily over the entire period at an average annual rate of roughly 5 percent, or a doubling roughly every 14 years. Industrial production in 1915 was 455 times what it was in 1790; over same period US population increased 26 times, from 3.9 million to 100.5 million. When World War I began, the United States produced more than one-third of world industrial output. No other country came close. Hamilton could not have asked for more.

Business-cycle interruptions to the growth of industrial production were relatively short. Whenever the Davis index of industrial production reaches a peak, the trough is mostly a year later, sometimes two years, and then expansion resumes. The only exceptions to steady secular growth around 5 percent per year appear to be a slowdown from roughly 1807 into the mid-1820s, and then above-average growth from the mid-1820s to the mid-1850s. The former period featured Jefferson's embargo on US exports, the War of 1812, and the Panic of 1819. The latter period marked the rapid expansion of mechanized cotton textile production, the leading manufacturing industry of the antebellum decades, and the early boom in railroad building. Industrial production grew at roughly 5 percent per year both before and after the Civil War.

Of course, we should not attribute the remarkable and steady expansion of nineteenth-century US industrial output entirely or even mostly to Hamilton's paper

on *Manufactures*. Many other factors were involved, including territorial acquisitions, the spread of banking and capital markets, the discovery and exploitation of natural resources, waves of immigration, widespread land ownership, property rights, the growth of a vast domestic market, and broadly laissez-faire policies encouraged by public policies of the sort Hamilton had recommended. But back in 1791, Hamilton had a prescient vision of how America's economy with governmental backing could shift from an agricultural economy and become a major manufacturing nation. His vision was not far off from the way that future actually unfolded.

■ *For constructive comments on an early draft of this article, the author thanks Jonathan Parker, Hugh Rockoff, Nancy Spannaus, Timothy Taylor, and Heidi Williams.*

References

Ben-Atar, Doron S. 2004. *Trade Secrets: Intellectual Piracy and the Origins of American Industrial Power.* New Haven: Yale University Press.

Bodenhorn, Howard. 2010. "Federal and State Commercial Banking Policy in the Federalist Era and Beyond." In *Founding Choices: American Economic Policy in the 1790s*, edited by Douglas A. Irwin and Richard Sylla, 151–76. Chicago: University of Chicago Press.

Cohen, Stephen S., and J. Bradford DeLong. 2016. *Concrete Economics: The Hamilton Approach to Economic Growth and Policy.* Boston: Harvard Business Review Press.

Davis, Joseph H. 2004. "An Annual Index of U.S. Industrial Production, 1790–1915." *Quarterly Journal of Economics* 119 (4): 1177–1215.

Davis, Joseph Stancliffe. 1917. *Essays on the Earlier History of American Corporations.* Cambridge: Harvard University Press.

DiLorenzo, Thomas J. 2009. *Hamilton's Curse: How Jefferson's Arch Enemy Betrayed the American Revolution—and What It Means for Americans Today.* New York: Three Rivers Press.

Fasteau, Marc, and Ian Fletcher. 2024. *Industrial Policy for the United States: Winning the Competition for Good Jobs and High-Value Industries.* New York: Cambridge University Press.

Hall, George, Jonathan Payne, and Thomas Sargent. 2018. "US Federal Debt 1776–1960: Quantities and Prices." New York University Leonard N. Stern School of Business New York University Working Paper 18-25.

Hamilton, Alexander. 1790a. *The Papers of Alexander Hamilton*. Vol. VI, edited by Harold C. Syrett. New York: Columbia University Press, 1962.

Hamilton, Alexander. 1790b. *The Papers of Alexander Hamilton*. Vol. VII, edited by Harold C. Syrett. New York: Columbia University Press, 1963.

Hamilton, Alexander. 1791. *The Papers of Alexander Hamilton*. Vol. X, edited by Harold C. Syrett. New York: Columbia University Press, 1966.

Higgins, Mark J. 2024. *Investing in U.S. Financial History: Understanding the Past to Forecast the Future.* Austin, TX: Greenleaf Book Group Press.

Hogeland, William. 2024. *The Hamilton's Scheme: An Epic Tale of Money and Power in the American Founding.* New York: Farrar, Straus and Giroux.

Irwin, Douglas A. 2004. "The Aftermath of Hamilton's 'Report on Manufactures.'" *Journal of Economic History* 64 (3): 800–821.

Irwin, Douglas A. 2017. *Clashing Over Commerce: A History of US Trade Policy*. Chicago: University of Chicago Press.

Jefferson, Thomas. 1785. *Notes on the State of Virginia*. Edited with an Introduction and Notes by Robert Pierce Forbes. New Haven: Yale University Press, 2022.

McCloskey, Deirdre Nansen, and Art Carden. 2020. *Leave Me Alone and I'll Make You Rich: How the Bourgeois Deal Enriched the World*. Chicago: University of Chicago Press.

McCraw, Thomas K. 1994. "The Strategic Vision of Alexander Hamilton." *American Scholar* 63 (1): 31–47.

Parenti, Christian. 2020. *Radical Hamilton: Economic Lessons from a Misunderstood Founder*. London and New York: Verso.

Passell, Peter and Maria Schmundt. 1971. "Pre-Civil War Land Policy and the Growth of Manufacturing." *Explorations in Economic History* 9 (1): 35–48.

Peters, Richard, ed. 1845–1867. *The Public Statutes at Large of the United States of America, from the Organization of the Government in 1789, to March 3, 1845*. 8 Vols. Boston: Charles C. Little and James Brown.

Schumpeter, Joseph A. 1954. *History of Economic Analysis*. New York: Oxford University Press.

Smith, Adam. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. New York: The Modern Library, 1937.

Smith, Merritt Roe. 1977. *Harpers Ferry Armory and the New Technology: The Challenge of Change*. Ithaca: Cornell University Press.

Sylla, Richard. 1998. "U.S. Securities Markets and the Banking System, 1790–1840." *Federal Reserve Bank of St. Louis Review* 80 (3): 83–98.

Sylla, Richard. 2010. "Financial Foundations: Public Credit, the National Bank, and Securities Markets." In *Founding Choices: American Economic Policy in the 1790s*, edited by Douglas A. Irwin and Richard Sylla, 59–88. Chicago: University of Chicago Press.

Sylla, Richard, John B. Legler, and John J. Wallis. 1987. "Banks and State Public Finance in the New Republic, 1790–1860." *Journal of Economic History* 47 (2): 391–403.

Sylla Richard, Jack W. Wilson, and Robert E. Wright. 2006. "Integration of Trans-Atlantic Capital Markets, 1790–1845." *Review of Finance* 10 (4): 613–44.

Wright, Robert E. 2008. *One Nation Under Debt: Hamilton, Jefferson, and the History of What We Owe*. New York: McGraw Hill.