

Trade Policy and America's Standard of Living: An Historical Perspective^{*}

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ABSTRACT

The U.S. has not always been a pro-free trade country. Before the Great Depression, the U.S. went through waves of protection and liberalization, as the federal government's demands for revenue and industry pressure for protection waxed and waned. Some advocates of protection then as now argued that it would enhance economic development: translated into the language of modern economics, they argued that protection shifted American economic activity toward manufacturing, and that increasing returns to scale and externalities made specialization in manufacturing uniquely valuable for economic development.

But even if protection generated endogenous productivity growth by increasing economic activity in the externality-generating manufacturing sector, it slowed the rate of growth of wages because high tariffs on imported capital goods retarded capital deepening and delayed the development of capital-intensive infrastructure and industry. For plausible magnitudes, this second effect dominates: whatever Americans gained in faster mastery of technology as a result of protection in the late 19th century, they lost more because the higher price of—imported—capital goods made it more difficult and costly to build America's transportation network and industrial base.

Introduction

The United States has not always been a free trade-loving country. Since World War II the establishment core of *both* political parties has had a free (or at least freer) -trade orientation. Relatively broad, bipartisan coalitions have enacted repeated moves toward trade liberalization, supported by broad agreement that the United States has more to gain than to lose from closer integration into an international division of labor.

Before World War II things were different. For a century and a half after the founding of the United States, free trade tended to be the exception, and protectionism the rule. Tariff rates did oscillate: they went up with the Hawley-Smoot tariff at the beginning of the Great Depression, and up to raise revenues to fight the Civil War; they went down in the 1830s as southern importers of manufactured goods from Britain made rollback of high tariffs a key sectional issue. But by and large the U.S. policy was explicitly one of moderate to high protection.

The United States before World War II tended toward protectionism for two reasons. First, customs duties were the source of a significant share of federal revenues. As Colbert is reported to have said, taxation is like plucking a goose: the object is to get the most feathers with the least hissing. Tariffs are taxes explicitly levied on foreigners: the tariff leads to a higher price for imported goods, but no American voter writes a check to the government. Economists may argue that tariffs often impose extremely high excess burdens and are an inefficient form of taxation. But from a bureaucrat's point of view tariffs use foreign producers as your tax collectors, and that makes them attractive.

Thus those interested in an expanded role for the federal government, whether in building national roads, a battle fleet, or paying post-Civil War pensions, tended to approve of higher tariffs that raised government resources. They joined political forces with the second group of potential strong supporters of a tariff: those who sought protection for their manufactured goods against foreign competition, especially from the mature industrial economy of England.

The outcome was a revenue-raising manufacturing-protecting tariff, enacted and maintained by a coalition of northeastern (and later midwestern) manufacturing interests fearing British

competition, and of western (and later eastern) interests seeking an expanded role for the federal government.

Only after World War I did American manufacturers and workers begin to see foreign industrial countries as potential markets to as great a degree as they saw them potential competitors. As the U.S. shifted from a manufactures-importing, agricultural goods-exporting economy to a manufactures- and capital-exporting economy, and after the passage of the income tax amendment that made the federal government much less concerned with tariffs as a source of revenue, the pro-protectionist coalition that held sway for most of the first century and a half of the United States broke down.¹

By the end of World War II, the dominant political constellation in both political parties was close to what we see today. The dominance of protectionist pressures in the United States was gone. And pressures for increased protection have, for the most part, remained relatively dormant for nearly half a century. Opposition to free trade has usually focused on preventing further liberalization—and not on rolling back liberalization that had previously taken place.

How did the roughly century and a half of protectionism, from 1800 to 1940, affect America's standard of living? Economists' standard tools suggest that the tariff reduced Americans' standard of living—and American workers' real wages—by an amount on the order of several tenths of a

¹ For more on the political economy of America's pre-World War II tariff, see Frank W. Taussig, The Tariff History of the United States (New York: G.P. Putnam's Sons, 1931). See also Bennett D. Baack and Edward John Ray, "The Political Economy of Tariff Policy: A Case Study of the United States," Explorations in Economic History 20:1 (January 1983), pp. 73-93; Bennett D. Baack and Edward John Ray, "Tariff Policy and Comparative Advantage in the Iron and Steel Industry: 1870-1929," Explorations in Economic History 11:1 (January 1974), pp. 33-51. Also useful are John Hansen, "Taxation and the Political Economy of the Tariff," International Organization 44, 4 (Fall 1990): pp. 527-51; Edward Kaplan and Thomas Ryley, Prelude to Trade Wars: American Tariff Policy, 1890-1922 (Westport, CT: Greenwood Press, 1994); Richard Edwards, "Economic Sophistication in Nineteenth Century Congressional Tariff Debates," Journal of Economic History 30, 4 (December 1970): pp. 802-838; and Judith Goldstein, Ideas, Interests, and American Trade Policy (Ithaca, NY: Cornell University Press, 1993).

percent of national product in the short run. Suppose that the elasticity of demand for imports was one. Then a thirty-percent tariff (a little lower than the average value over 1800-1940) would reduce the import share of national demand from a counterfactual level of nine percent to the actual level of about seven percent of national product, with the consumer and producer surplus foregone on a discouraged import amounting on average to fifteen percent of its value. The net result? A reduction in real incomes of some 0.3 percent of national product, with little reason to think that this reduction in real incomes fell disproportionately on capital rather than on labor.

In the long run, standard tools suggest that the costs of the tariff were considerably greater. The tariff made imported capital goods more expensive, and presumably raised the price of domestic capital goods that were substitutes for imports as well. A high-tariff economy is a lower investment economy; a lower capital stock economy; and a lower wage economy. The wedge driven between the amount of savings and the amount of investment by the tariff would, in the steady-state of a growth model, reduce national product and real wages by on the order of one-twentieth.

For the pre-Civil War period, this simple calculation may be seriously off. The American South was a very large supplier in the world cotton market. Tariffs on manufactured imports may have raised America's terms-of-trade enough to counterbalance (through a higher price of cotton in world markets) the deadweight loss from the tariff's discouragement of valuable imports. This issue will not be analyzed here.²

² However, see Jeffrey Williamson, Late Nineteenth-Century American Development: A General Equilibrium History (New York: Cambridge University Press, 1974); Jeffrey Williamson, American Growth and the Balance of Payments, 1820-1913 (Chapel Hill, NC: University of North Carolina Press, 1964); Clayne Pope, "The Impact of the Antebellum Tariff on Income Distribution," Explorations in Economic History 9 (July 1972), pp. 375-421; Susan Lee and Peter Passell, A New Economic View of American History (New York: W.W. Norton, 1979); John James, "The Optimal Tariff in the Antebellum United States," American Economic Review 71, 4 (September 1981): pp. 726-34; C. Knick Harley, "The Antebellum American Tariff: Food Exports and Manufacturing," Explorations in Economic History 29, 4 (October 1992): pp. 375-400; and Jeremy Atack and Peter Passell, A New Economic View of American History from Colonial Times to 1940, 2nd ed. (New York: W.W. Norton, 1994).

For the post-Civil War period as well, some have argued that this standard calculation is seriously off. Some have seen the coexistence of protectionist trade policy with America's successful nineteenth-century industrial revolution as demonstrating that protectionist policies can be a plus for a growing and industrializing economy, at least in the long-run.

Such analysts claim that, in James Fallows' words, belief in free trade:

fail[s] a test of history.... [Free trade principles] do not explain how the industrial old guard—first England, than America—rose to power. Indeed, those countries developed fastest when they paid least attention to today's... [orthodox free-trade] principles of economic growth.³

The argument for the beneficial effects of protection made by Fallows, and others, is the same argument noted and rejected in the case of the post-Civil War U.S. tariff by F.W. Taussig—or indeed the same “infant industry” argument noted and grudgingly admitted by J.S. Mill. Any who point to the coexistence of American protectionism with the industrial revolution in the United States are implicitly asserting that these benefits—from a greater degree of specialization in manufacturing induced by protection—are very great and long lasting.⁴

³ See James Fallows, Looking at the Sun: The Rise of the New East Asian Economic and Political System (New York: Pantheon Books, 1994). pp. 193-94. Other arguments in the same tradition include Williamazonick, Business Organization and the Myth of the Market Economy (Cambridge, U.K.: Cambridge University Press, 1991); Alice Amsden, Asia's Next Giant (New York: Oxford University Press, 1989); and Thomas McCraw, “Mercantilism and the Market: Antecedents of American Industrial Policy,” in C.E. Barfield and W.A. Schambra, eds., The Politics of Industrial Policy (Washington: American Enterprise Institute, 1986), pp. 33-62.

⁴ Frank W. Taussig, The Tariff History of the United States (New York: G.P. Putnam's Sons, 1931), pp. 2-3: “The essential point of the argument lies in the assumption that the causes which... render protection necessary, are not natural or permanent... [S]uppose...the industry to be encouraged is the cotton manufacture.... There is no permanent cause why cotton goods should not be obtained at as low cost by making them at home.... But the cotton

Are they correct in general, over the entire span of American tariff history? That is too big a question. Instead, the latter part of this paper analyzes a similar but smaller question: is it plausible to believe that the tariffs levied on manufacturing imports in the late nineteenth century induced enough benefits to economic growth to more than offset their economic cost?

Thus the first part of this paper provides broad overview of tariffs and trade patterns in the century and a half before World War II. The second part takes a closer look at the interaction of trade policy, industrial development, and living standards in the late nineteenth century. Did America's tariffs benefit the country, in terms of increased consumption or faster economic and real wage growth, in the generation after the Civil War?

The answer appears to be no: it is difficult to argue that America was a net gainer from the protectionist policies of the late nineteenth century. Moreover, the more stress you give to the "external benefits" of investment, capital accumulation, the links between capital intensity and the ability to use new technologies, and so forth, the worse the post-Civil War tariff looks. The post-Civil War tariff did accelerate the transfer of labor out of agriculture and into manufacturing, but it also retarded investment in America's capital stock by making domestic and, especially, foreign-made capital goods more expensive.

If you want to argue that the tariff increased U.S. growth by boosting externalities to concentration in manufacturing, you have to hold the peculiar—and unsupported—belief that the higher-labor, lower capital-labor ratio U.S. nonagricultural sector generated by the tariff was a better incubator of technology and total factor productivity than the lower-labor but higher capital-intensity sector that would have developed in the absence of the post-Civil War tariff.

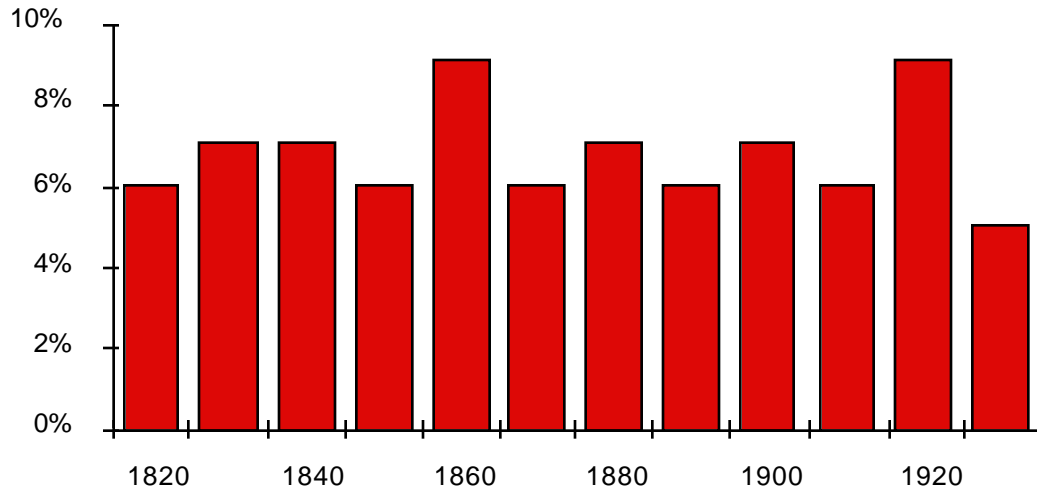
manufacture...is new; the machinery used is unknown and complicated, and requires skill and experience of a kind not attainable in other branches of production. The industry of the country runs by custom in other grooves.... If... communication of knowledge be slow, and enterprise... hesitating... the establishment of the cotton manufacture may be prevented [in the absence of tariff protection].... Under such circumstances it may be wise to encourage the manufacture by duties on imported goods..."

Patterns of Trade and Protection Before World War II

Patterns of Trade

Today imports and exports run some ten to thirteen percent of national product. Between one dollar in ten and one dollar in eight of economic activity in the United States is, ultimately, directed either toward imports or exports. Counting United States distributors and sellers of foreign-made products—Americans who sell Hondas and Volvos, whose activities do not enter our trade accounts at all—something like one in four Americans today has a job that is closely linked to international trade.

Figure 1: Exports as a Share of National Product (Approximate)



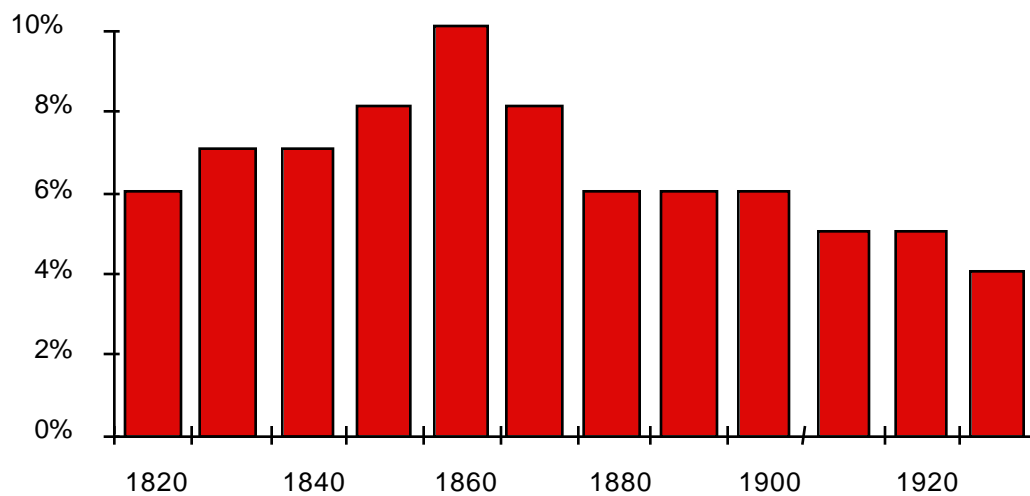
Source: *Historical Statistics of the United States*; Gallman (1960); Berry (1978).

Before World War II trade was a smaller proportion of United States total economic activity than it has been in recent years. As best we can reconstruct, trade took up about half as large a share of economic activity. Figures 1 and 2 depict this approximate picture of the evolution, at decade

intervals, of the export and import share of national product from 1820 to 1930.

Estimates of how the trade share of national product evolved between 1800 and World War II are highly uncertain. Customs tariff collections form the basis for relatively good estimates of cross-border commodity flows. The numerator of trade-share-of-national product estimates is in relatively good shape. The problem is in the denominator: our estimates of national product themselves. Small errors in estimating pre-1900 growth compound to create large errors in estimating how important trade was in the American economy.⁵

Figure 2: Imports as a Share of National Product (Approximate)



Source: *Historical Statistics of the United States*; Gallman (1960); Berry (1978).

⁵ See Thomas S. Berry, Revised Annual Estimates of American Gross National Product: Preliminary Annual Estimates of Four Major Components of Demand, 1789-1889 (Richmond, VA: Bostwick Press, 1978); Robert Gallman, "Commodity Output, 1839-1899," in William Parker, ed., Trends in the American Economy in the Nineteenth Century, NBER Studies in Income and Wealth, vol. 24 (Princeton: Princeton University Press, 1960); Robert E. Lipsey, Price and Quantity Trends in the Foreign Trade of the United States (Princeton: Princeton University Press, 1963).

Nevertheless, before the Civil War exports appear to have trended slowly upward as a share of national product. They rose irregularly from approximately six percent of national product in 1820 or so to roughly nine percent of national product on the eve of the Civil War. The rise in imports as a share of national product was in large part driven by cotton: Britain, the first industrial nation, had an extraordinary hunger for cotton imports to feed its rapidly-growing textile industry—the “leading sector” of the first half of the nineteenth century. Cotton exports accounted for upwards of 60 percent of United States exports in the 1850s.

The United States had land suitable for growing cotton, slaves who could be forced to do the hard work of growing cotton, and technology—from cotton gins to scales and barrels to rivers, harbors, and ships—necessary to turn cotton plants into the raw material needed by Britain’s factories.

The Civil War and emancipation reduced the rate of growth of this trade. After the Civil War United States exports appear to have settled back to roughly six percent of national product or so, and to have maintained that pace until the boom in exports occasioned by World War I.

After the Civil War, other agricultural products replaced cotton as America’s major export group. By 1901 agricultural exports excluding cotton were some twenty-five percent of America’s exports; cotton exports were then less than twenty percent of America’s exports. The food-growing west had replaced the south as America’s major agricultural product exporting region. Imports roughly paced exports. In the first half of the nineteenth century imports in all likelihood ran slightly ahead of exports, as the United States borrowed on net from Britain.

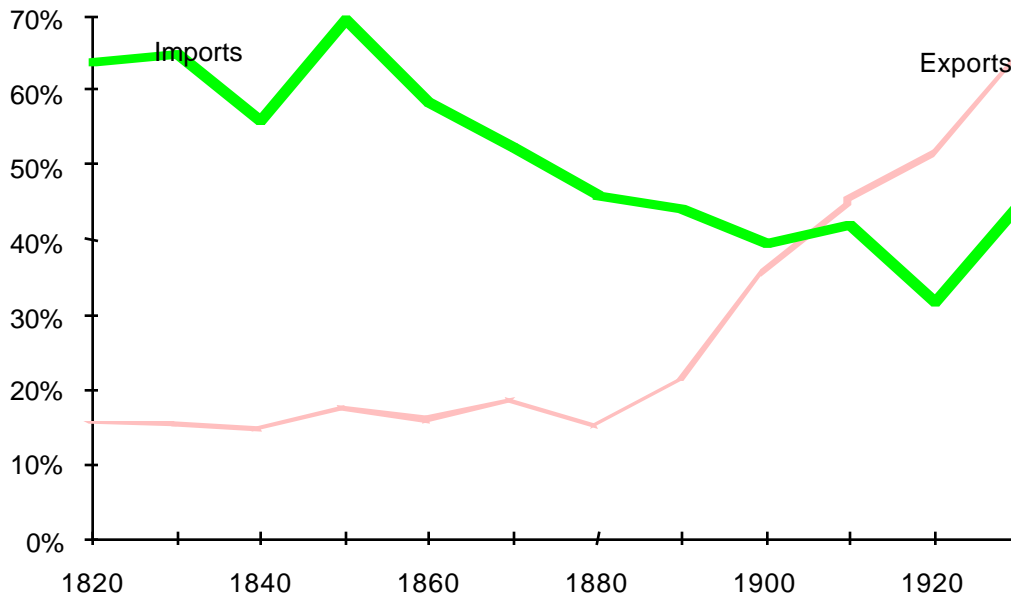
In the second half of the nineteenth century, interest and dividends paid on previous foreign investments came closer to offsetting new borrowing and investment from abroad. By the 1880s U.S. commodity exports exceeded commodity imports, and by the 1890s the U.S. was repaying its previous net borrowing from the industrial core of the world economy.⁶ World War I brought heavy borrowing from the United States by the Allied powers of Britain and France, a large surplus of

⁶ See Robert L. Lipsey, “U.S. Foreign Trade and the Balance of Payments, 1800-1913,” Working Paper 4710 (Cambridge, MA: NBER, 1994).

exports over imports, and the rapid transformation of the United States from a debtor to a creditor nation.

Figure 3 below shows the relative shares of imports and exports made up of non-food manufactures.⁷ At the start of the nineteenth century, the United States had a pattern of trade that exactly fit that of a stylized periphery, agricultural economy. More than three out of every five import dollars paid for imports of manufactured goods. And slightly more than half of manufactures imports came from Britain. The early nineteenth century pattern of trade persisted late into the century: it was not until after the Civil War that the proportion of United States imports that were manufactured goods fell to less than half.

Figure 3: Non-Food Manufactures Share of Trade



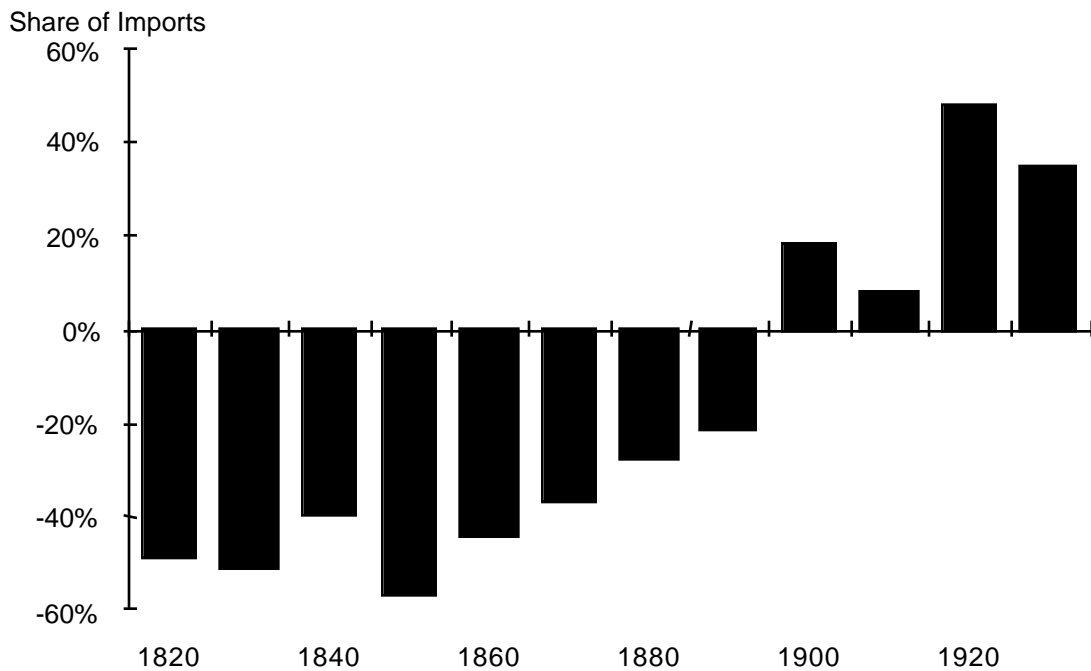
Source: *Historical Statistics of the United States*.

⁷Food processing exports are omitted to sharpen the comparison: a high proportion of the value in processed foods, especially in the nineteenth century, was added in agriculture. America has always ranked relatively highly in exports of processed foods.

By contrast, less than one of every six American export dollars at the start of the nineteenth century was a manufactures export dollar. It was not until 1890 that the share of manufactured goods in United States exports was, for the first time, higher than twenty percent. After 1890, however, the share of manufactured goods in United States exports began a steep climb. By 1920, the share of manufacturing exports had risen to more than fifty percent of the total of exports.

Figure 4 below shows the balance of trade in manufactured goods, scaled by total imports. From 1820 to the Civil War the United States deficit on manufactures was approximately half of total imports: an exchange of agricultural products for manufactured goods. After the Civil War the deficit in manufactures narrowed, at first slowly and then more rapidly. By 1900 there was a surplus in non-food manufactures. In 1920 America's surplus on manufactured goods was as large, measured as a share of total imports, as America's habitual deficit had been a century before.

Figure 4: Manufactures Trade Balance



Source: *Historical Statistics of the United States*.

Thus by the end of World War I the United States had made the transition from a primary

product-exporting, manufactures-importing economy to a manufactures-exporting industrial economy. To the extent that pressures for nineteenth-century protectionism grew out of a habitual deficit in manufactures, and thus a view by manufacturing interests that free trade was not their friend but their foe, these pressures had vanished by the interwar period.

Patterns of Protection before the Civil War

Figure 5 below shows the average tariff rate charged by the United States from 1820 to 1940: total tariff collections, divided by imports intended for domestic consumption. The average tariff rate is around 30 percent for most of the nineteenth century—sometimes higher, sometimes lower. The average tariff rate is as high as 44 percent at the end of the 1820s: the so-called “Tariff of Abominations” that sparked one of the first in the series of sectional crises that were to lead to the Civil War. The average tariff rate dips below 20 percent for a few years around 1840, and a few years just before the Civil War.

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Source: *Historical Statistics of the United States*.

These episodes aside, tariffs as a share of imports do not drop below twenty percent until 1910. They remain around ten percent for the interwar period—even the infamous Hawley-Smoot tariff of 1930 merely raises total tariff collections as a share of imports to twenty percent, a level that in the nineteenth century would have been a low, not a high tariff.

After World War II, United States tariffs continued their decline. In not a single post-World War II year were tariff collections as much as ten percent of imports. With the phasing-in of the Uruguay Round GATT agreement and the creation of the World Trade Organization, United States tariffs will be three percent of the value of imports, or less. The past generation has seen the rise of an alternative system of trade controls: for example the quota regime of the Multi-Fiber Agreement, and the threat of antidumping suits serving as an incentive for the creation of Voluntary Export Agreements. The quantitative, trade-restricting impact of this second layer of non-tariff trade

restrictions is hard to evaluate, but it is almost surely more important than the residual tariffs that remain today.

At the start of the nineteenth century, almost every single import was subject to some tariff: ninety-six percent of the value of imports were dutiable in 1821. The share of imports subject to tariff oscillated between half and ninety-six percent before the Civil War, rising back up into the ninety-plus percent range during the Civil War, as the government's financial needs became overwhelming.

The post-Civil War period saw a slow decline in the share of imports subject to duty. The share of imports subject to tariffs dropped to roughly fifty percent by 1900. It had dropped further to between thirty and forty percent by the interwar period.

Note that the reduction in the share of imports subject to tariffs is in fact slightly faster than the reduction in tariff revenue as a share of the value of imports. There is no sign of any systematic fall before World War II in tariffs charged on those goods judged worth subjecting to tariff. The later nineteenth and early twentieth century see more goods exempted from tariffs altogether, but they also see somewhat higher average rates of tariff charged on the remaining items.

The fact that tariffs were at a relatively high level in 1820—more than forty percent of the value of imports in that year—did not reflect any settled protectionist pressure. Instead, it was a combination of two factors: the War of 1812, and the central place of tariffs in federal finances.

First, the War of 1812 had left the government with what was then a staggering debt burden. Debt interest cost the governments of James Madison and James Munroe some \$7,000,000 (yes, seven million dollars) a year. This was more than three times the debt burden paid in George Washington's first term.

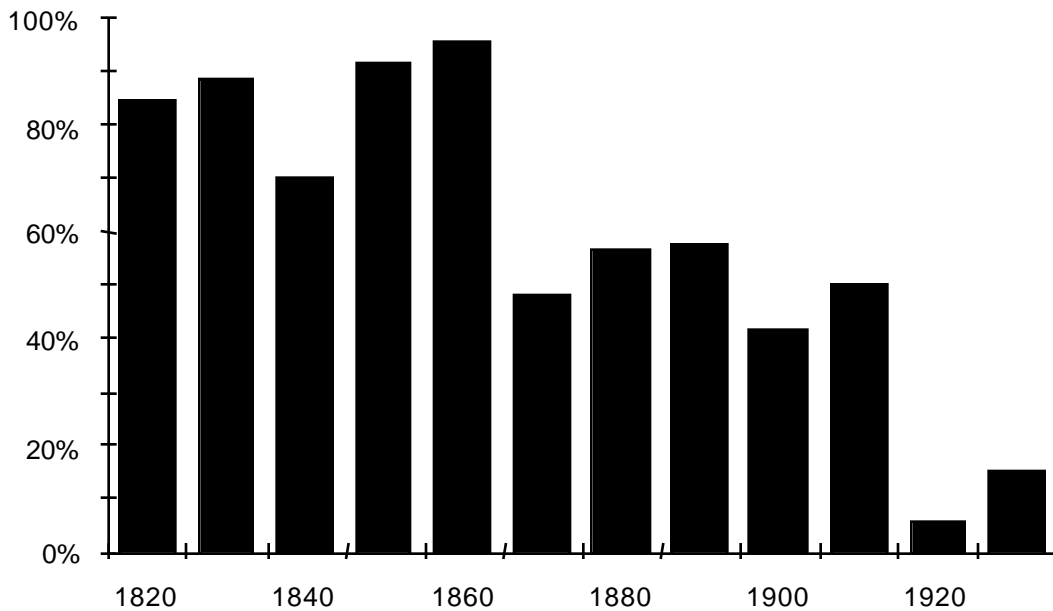
Combined with up to \$3,000,000 a year in veterans' compensation, and an additional \$7,000,000 a year to support the enlarged, War of 1812-size military establishment, federal spending in 1820 was more than four times what it had been in Washington's first term.

Second, tariffs were the federal government's only significant revenue source. Tariff revenues averaged some eighty percent of federal revenue before the Civil War. The federal government

could adjust to lower tariffs—it did so in the 1830s, cutting back on spending on internal improvements and shifting to other, internal revenue sources. But in the aftermath of the War of 1812, high tariffs were the only plausible way for the government to fund its military establishment and pay off its debt.

However, once tariffs had been raised to substantial levels on account of the government’s need for revenue, protected manufacturers soon noticed that by manipulating the tariff they could affect foreign competition. The first strong and explicit links between advocacy of protection and the encouragement of particular industries appear in the United States in the later 1820s. The Senators and Representatives from New England were not the first advocates of protection for the sake of industrial development: New England immediately after the War of 1812 was still more a mercantile than an industrial economy; the first advocates of protection for the sake of industry came from the middle states of Pennsylvania and New Jersey, where shipping interests were weaker and manufactures at least as strong.

Figure 6: Tariffs as a Share of Total Federal Revenue



Source: *Historical Statistics of the United States*.

However, New England manufacturers were not far behind. The woolen manufacturers of Boston, especially, appear to have organized the first trade association, engaged in what was certainly one of the first formal lobbying efforts, and lodged the first unfair trade practice claims in 1826. Boston's woolen manufacturers claimed that British exporters were understating the value of their goods—thus evading a substantial part of the 33 1/3 percent *ad valorem* tariff in effect.

The woolen manufacturers asked for a minimum valuation of 40 cents a yard on wool imports, and for an imposed minimum valuation of \$2.50 a yard on woolen goods worth more than 40 cents a yard. The effect of the woolen manufacturers' proposals would have been to keep—in the letter of the law—the 33 1/3 percent *ad valorem* rate, but to charge an average tariff of approximately 80 percent on woolen goods imports.

Explicit protectionism for industrial policy purposes won its first significant legislative victory in the passage of the 1828 “Tariff of Abominations.”⁸ But the high level of tariffs reached as a result of the 1828 act galvanized opponents: the tariff became a grievance of the south against the north. And in 1833 consumer interests—organized section-by-section—reached a compromise that provided for gradual reduction of tariffs to a twenty percent rate, but that postponed realization of the twenty percent rate for a decade.

The 1840s saw a tariff increase proposed and enacted by a Whig congressional majority, and then a Democratic rationalization of tariff rates in terms of efficiency, that raised tariffs to roughly 23 percent on average. 1857 saw a general tariff reduction provoked by the move of the federal budget into structural surplus. And protectionist pressures were not brought to bear in opposition to

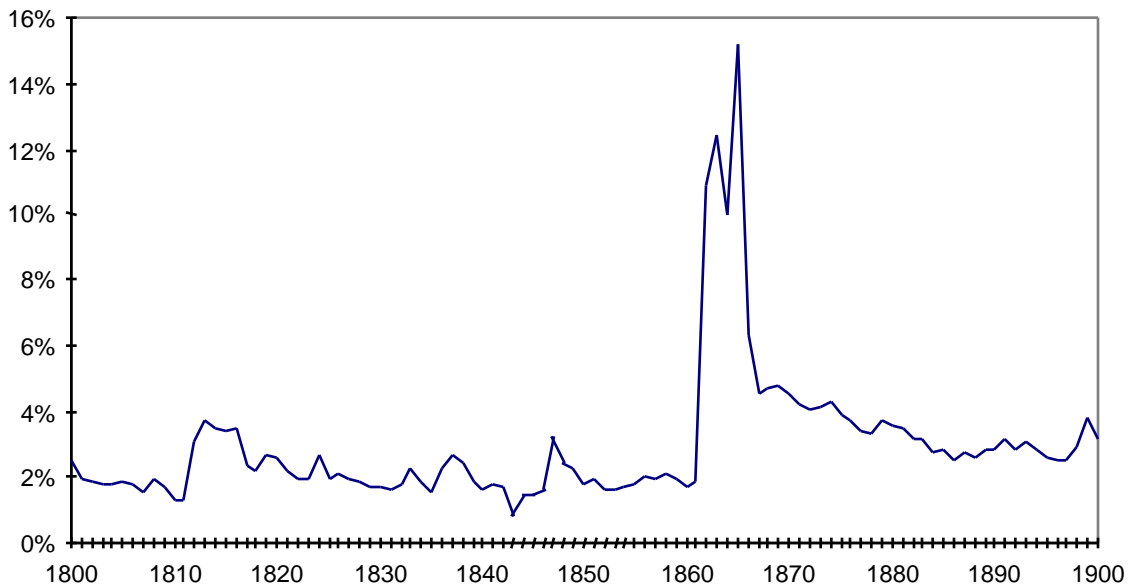
⁸Passage of which John C. Calhoun later blamed on an inept and over-clever legislative strategy adopted by the Jacksonian Democrats. They sought to defeat the proposed tariff increase, but to lay the blame for defeating the tariff on the supporters of John Quincy Adams. Thus southern Jacksonian Democrats voted against amendments to strip the “abominations” from the tariff. See Taussig (1931), pp. 88-102; William Freehling, *Secessionists at Bay: 1776-1854* (New York: Oxford University Press, 1990).

the tariff reduction in 1857.

Patterns of Protection from the Civil War to the Great Depression

In 1860 the federal government spent \$63.1 million—somewhat less than two percent of national product. In 1865 the federal government spent \$1.30 billion—the first time the annual federal budget exceeded a billion dollars, and the only time federal expenditures exceeded a billion dollars until the United States entered World War I. 1865 federal expenditures amounted to approximately one fifth of national product. After the Civil War, debt interest alone was as large a share of national product as all federal expenditures had been before the war.

Figure 7: Nineteenth-Century Federal Spending as a Share of National Product (Approximate)



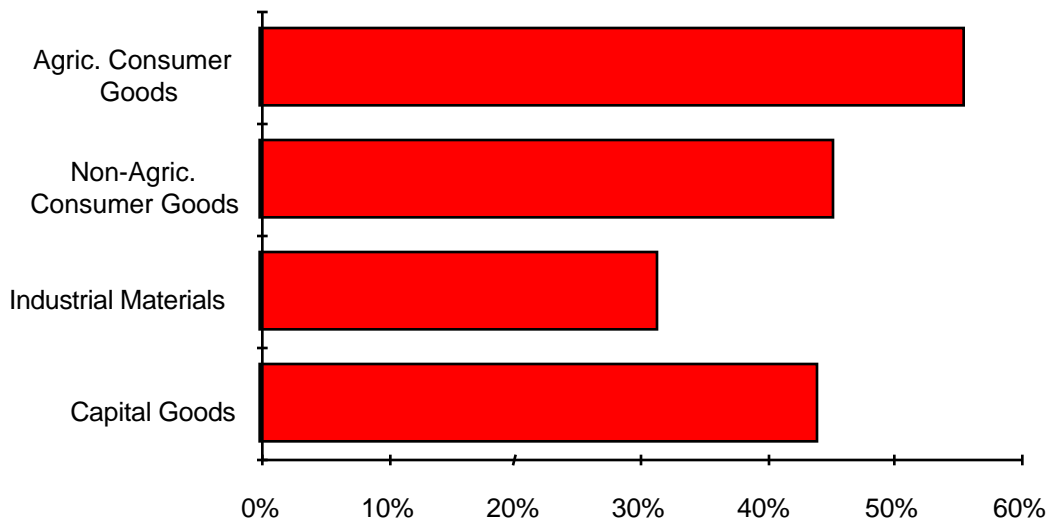
Source: *Historical Statistics of the United States*.

The federal government financed the Civil War through every channel conceivable—creation of a national banking system, borrowing, income taxes, other internal revenues, and a large increase in tariffs. Measured as a share of imports, tariffs tripled as a result of the Civil War. The tariff structure was roughly even across broad groups of commodities. Agricultural product-based

consumer goods faced the highest average tariffs of nearly fifty five percent, but the average tariffs on other consumer goods and on capital goods were forty percent or so. A small break was given to industrial materials, with an average tariff of thirty percent or so ad valorem.

More narrow tariff levels varied widely, from a low of ten percent on imports of dyestuffs to a high of 252 percent on imported distilled liquors. But there is no discernible economic logic underlying the pattern.

Figure 8: Ad Valorem Tariff Rates, 1870



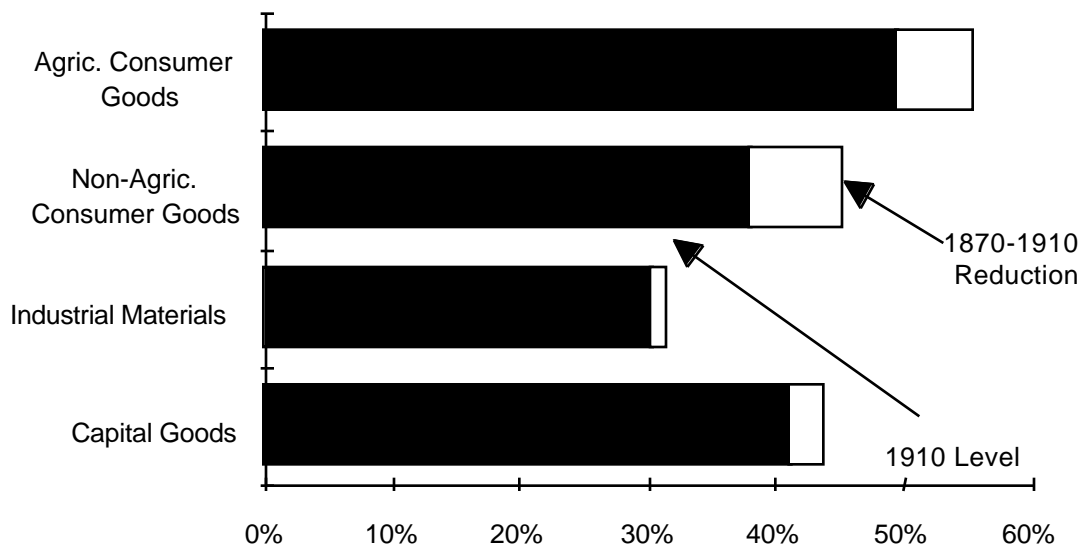
Source: *Historical Statistics of the United States*; U.S. Treasury; author's calculations from data underlying Baack and Ray (1983).

For nearly twenty years after 1870, the tariff structure was more-or-less frozen in the form it had reached in the aftermath of the Civil War. Duties on pure revenue goods—like tea and coffee were eliminated. Tariffs on some imports were lowered to satisfy consumer sentiment. Tariffs on other goods were raised, or goods were reclassified to fit into a higher tariff category, in response to protectionist pressures.

There was some reduction in tariff rates in the immediate aftermath of the war. But tariffs were not returned to their pre-1861 or even their average 1840-1860 level. For taxpayers, the reduction and elimination of the wartime income and excise tax machinery was a higher priority.

For consumers, reductions in any tariffs were equally welcome. Industries that had grown comfortable behind the protectionist walls created by the more-or-less uniform tariff increases of the war lobbied for the preservation of their own duties, and the reduction of others. Thus the less a commodity was produced in the United States, the greater was the reduction in its tariff in the post-Civil War round of tariff reductions.

Figure 9: Ad Valorem Tariff Rates 1910, and 1870-1910 Tariff Reduction



Source: *Historical Statistics of the United States*; U.S. Treasury; author's calculations from data underlying Baack and Ray (1983).

The only major move toward across-the-board tariff reduction came in the late 1880s, and it ultimately proved ineffective. President Grover Cleveland made tariff reduction—and Democratic championing of western consumer interests—an important election issue. Subsequent Republican victories in the election of 1888 gave Republicans sufficient confidence to generate the first non-war general tariff increase since the 1840s—the McKinley tariff of 1890.

The McKinley tariff was itself reversed when the elections of 1890 and 1892 gave the Democrats control of the Senate and the House, and the Presidency as well. The reelected Cleveland

sponsored a tariff reduction in 1894 that rolled back the 1890 increase, and cut duties by approximately one-fifth in addition.

But the lifespan of the 1894 tariff reduction was even shorter than the lifespan of the 1890 tariff increase. The 1894 tariff reductions were reversed almost immediately, as the victory of William McKinley over William Jennings Bryan in 1896 carried the Republicans to legislative majorities as well.

Tariffs as a share of imports fell by approximately one-third between 1898 and 1910, but not because of any legislative action. The cause was a fall-off in the relative amount of imports of heavily tariffed manufactures as the United States became self-sufficient in more and more classes of industrial commodities. The years around 1910, however, did see a significant break in the strength of the pro-protection coalition that had kept tariffs at or near their Civil War levels for more than a generation. The Democratic Party began to run—and win elections—on a consistently pro-tariff reduction platform.

As is almost always the case, the links between good economic judgments and the terms of political discourse were extremely tenuous: the Democrats blamed the tariff for the high cost of living, and the slow one to three percent per year inflation that had taken hold since the 1890s.⁹ Nevertheless, the number of Republicans in the House of Representatives fell from 214 in the 61st Congress of 1909-1910 to 122 in the 63rd Congress of 1913-1914. The number of Republicans in the Senate fell from 60 in the 61st Congress to 44 in the 63rd Congress.

The tariff reductions of 1913 were themselves partially reversed a decade later, when agricultural and industrial producers demanded action to divert demand in their direction in the sharp post-World War I depression. But the tariff increase of 1922 did not restore the overall level of tariffs to its pre-1913 level, let alone the levels of 1900 or of 1880.

It took the Hawley-Smoot tariff of 1930 to boost the average level of protection above the pre-

⁹It is much easier to argue that the inflation was the result of a sudden increase in the rate at which the world's monetary gold supply, the fundamental reserve of the international monetary system, grew. The rate of gold production had increased severalfold as a result of the construction of the South African gold mining industry.

1913 level. And the Hawley-Smoot tariff itself was extremely short-lived: much of the increase passed in June of 1930 was gone by the end of Roosevelt's first term.

Interpreting Pre-World War II Tariffs

One view, advanced by F.W. Taussig, is that the reduction of U.S. tariffs is a story of the interrupted triumph of economic rationality. In Taussig's narrative, tariffs start high in the aftermath of war because of customs duties' role in federal finance; industrialists seize on high tariffs for protectionist purposes; but eventually Americans and their legislators see through the—largely specious—claims that protection is in the public interest, and tariffs fall. In Taussig's narrative the United States goes through two such tariff cycles: one in the forty-five years after the War of 1812, and a second longer cycle—which is not complete as of Taussig's final edition—generated by the tariff increases of the Civil War.

A more cynical interpretation would be that told by Baack and Ray (1974, 1983): the story of a shifting balance of power among different economic interest groups and a revenue-hungry federal government. It would also see two cycles, and it would see the same beginning to each one as Taussig's interpretation: a revenue-hungry government raises tariffs (both in the War of 1812 and the Civil War) to pay for its armies and navies; protected manufacturers then attempt to preserve the wartime tariff structure and warp it to their economic interest. Before the Civil War, southern opinion leaders and legislators realize that their section has a stake in free trade—and the south is a sufficiently powerful and, in large part because of its peculiar institution, cohesive section that its legislators are able to put tariffs on a downward path. This ends the first protectionist cycle.

The second protectionist cycle, in this interpretation, ends because those for whose sake protectionist barriers are constructed lose interest. The United States shifts from a manufactures-importing to a manufactures-exporting economy, and a high level of protection for manufactured goods becomes a less and less important politico-economic goal (see Baack and Ray (1983), p. 83). This interpretation is essentially Taussig's in pessimistic guise: the standard economic arguments against protection *were* made, and eventually they *were* persuasive. It is difficult to untangle the

degree to which their persuasiveness was established by their logical force, or by the balance of material interest in politically-active pressure groups.

Protection and Nineteenth Century Growth

But was this special-interest and war-debt driven late nineteenth century tariff in fact the “correct” policy for a rising, industrializing economy seeking to become a world power? Before the Civil War, the policy of protection to force the hothouse growth of an industrial sector was undermined by the strength and cohesion of southern consumer interests. The Civil War eliminated the political power and cohesion of southern pro-free trade slaveholders. And by World War I the United States was an industrialized economy, able to meet all comers in the struggle for the rents from ownership of the world’s high-tech industries. It no longer needed a protectionist tariff. So to all appearances the post-Civil War protectionist policy worked.

But are the possible links from high tariffs to faster growth and industrial development large enough to carry the weight of this argument, as applied to the post-Civil War United States? Three channels are noted in the literature that calls for “getting relative prices wrong” in order to assist industrial development. First is the role of trade policy in producing an economy oriented toward production and investment rather than “consumption.” Second is the extent to which specialization in manufacturing shifts labor and capital toward high value-added industries and activities. Third is the role of learning-by-doing and other externality-generating factors in giving production and employment in manufacturing a social rate of return in excess of its private rate of return.¹⁰

¹⁰ For studies of these factors in the context of American economic history, see Jeremy Atack, “Economies of Scale and Efficiency Gains in the Rise of the Factory in America, 1820-1900,” in Peter Kilby, ed., Quantity and Quiddity: Essays in U.S. Economic History (Middletown, CT: Wesleyan University Press, 1987); Paul David, “Learning by Doing and Tariff Protection: A Reconsideration of the Case of the Ante-Bellum United States Cotton Textile Industry,” in Paul

Consumption vs. Production

One effect of high tariffs on imported goods is to bias spending patterns away from consumption of imported luxuries, and perhaps toward investment. In an economy like the post-Civil War United States that imported some six percent of national product, a 30 percent tariff on the average imported good would divert 1.8 percent of national product into the hands of the government.

A government that imposed such a tariff, used it to retire war debt more rapidly,¹¹ and

David, Technical Choice, Innovation, and Economic Growth (New York: Cambridge University Press, 1972); and Jeffrey Williamson, "Embodiment, Disembodiment, Learning-by-Doing, and Returns to Scale in Nineteenth-Century Cotton Textiles," Journal of Economic History (1972); Robert Zevin, "The Growth of Cotton Textile Production After 1815," in Robert Fogel and Stanley Engerman, eds., The Reinterpretation of American Economic History (New York: Harper and Row, 1971); Sukkoo Kim, "Regions, Resources, and Economic Geography: The Evolution of the U.S. Regional Economies, 1860-1987" (St Louis, MO: Washington University working paper, 1995); and especially Louis Johnston, Endogenous Growth and the American Economy, 1840-1900 (Berkeley, CA: U. Cal. Berkeley Ph.D. Diss., 1990).

For the more general literature on "increasing returns" broadly construed, see Paul Romer, "Increasing Returns and Long Run Growth," Journal of Political Economy 94:5 (October 1986), pp. 1002-1037; Adam Jaffe, "Technological Opportunity and Spillovers of Research and Development: Evidence from Firms' Patents, Profits, and Market Value," American Economic Review 76:5 (December 1986), pp. 984-1001; Eric Bartelsman, Ricardo Caballero, and Richard Lyons, "Customer- and Supplier-Driven Externalities," American Economic Review 84:4 (September 1994), pp. 1075-1084; Kenneth Arrow, "The Economic Implications of Learning-by-Doing," Review of Economic Studies 29 (June 1962), pp. 155-73; Kevin Murphy, Andrei Shleifer, and Robert Vishny, "Industrialization and the Big Push," Journal of Political Economy 97:5 (October 1989), pp. 1003-1026; and Allyn Young, "Increasing Returns and Economic Progress," Economic Journal 38:4 (December 1928), pp. 527-542.

¹¹As in Louis D. Johnston, *Endogenous Growth and the American Economy, 1840-1900* (Berkeley, CA: University of California Ph.D. Diss., 1990).

succeeded by imposing the tariff in boosting the national savings and investment rate by half of this amount: 0.9 percentage points of national product per year. Such a policy could have a small but not insignificant effect on the rate of economic growth. The share of gross capital formation in American national product after the Civil War averaged some 20 to 25 percent of national product. In a standard neoclassical growth model, such a boost to annual gross savings and investment would in the long run raise the level of national product relative to the baseline growth path by some one to two percent of national product.

However, it is far from clear that additional tariff revenue crowded in even half as much net investment in the United States. World capital markets were open in the second half of the nineteenth century.¹² The Civil War debt was retired relatively rapidly, but thereafter taxes were not lowered—instead, Republican governments spent one to two percent of national product on pensions for Civil War veterans.¹³

¹² See Michael Edelstein, Overseas Investment in the Age of High Imperialism: The United Kingdom, 1850-1914 (New York: Columbia University Press, 1982).

¹³ As Richard Sutch has pointed out, post-Civil War veterans' pensions were uniquely effective as a way of channeling government funds to Republican supporters and only Republican supporters. Urban immigrant voters for Democratic machines had not fought in the Civil War. Southerners had not fought in the Civil War on the right side.

For analyses of Civil War debt retirement and its impact on growth, see Jeffrey Williamson, "Watersheds and Turning Points: Conjectures on the Long-Term Impact of Civil War Financing," Journal of Economic History 34:3 (September 1974), pp. 636-61; John James, Money and Capital Markets in Post-Bellum America (Princeton: Princeton University Press, 1978); John James, "Public Debt Management Policy and Nineteenth Century Economic Growth," Explorations in Economic History 21(2) (April 1984): pp. 192-217; John James and Jonathan Skinner, "Sources of Savings in the Nineteenth Century United States," in Peter Kilby, ed., Quantity and Quiddity: Essays in U.S. Economic History (Middletown, CT: Wesleyan University Press, 1977); Louis Johnston, Endogenous Growth and the American Economy, 1840-1900 (Berkeley, CA: University of California Ph.D. Diss., 1990); Moses Abramovitz and Paul David, "Reinterpreting American Economic Growth: Parables and Realities," American Economic Review 63:2 (May 1973), pp. 428-39.

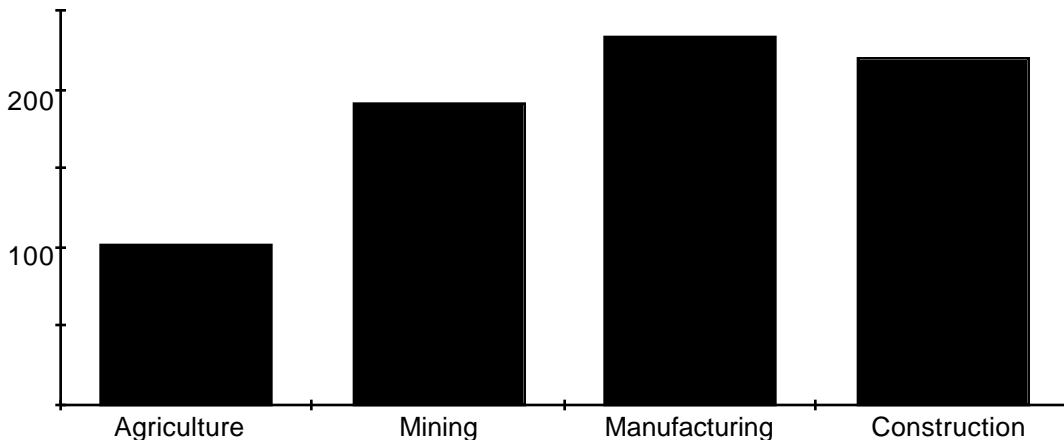
Concentration in High Value-Added Sectors

A second reason often advanced for why early specialization in manufacturing is beneficial is the claim that manufacturing industry has a higher than average level of labor productivity, and the assertion that transferring workers from other, lower productivity sectors to manufacturing boosts average productivity in the economy. Figure 10 below gives some crude measures of relative raw labor productivity in different sectors in 1870, in the aftermath of the Civil War.

There are many reasons not to take such estimates of intersectoral productivity differences at face value. First, agriculture in 1870 was an extremely heterogeneous sector, made up of rich northern farmers on substantial ranges of good land with ample capital and tools and of poor southern farmers on little land with next to no implements.

Second, the appearance of substantial differences in productivity across sectors may well be a reflection of the tariff, rather than a justification for it. To the extent that tariffs of more than fifty percent on British iron and steel products insulated Carnegie Steel from competition and made Andrew Carnegie rich, such tariffs could lead to large divergences in productivity—for Carnegie was one of the very few Americans licensed to use the Bessemer process in making steel—but would be an argument for reducing the tariff, not increasing it.

Figure 10: Raw Labor Productivity in Different Sectors, 1870



Source: *Historical Statistics of the United States*.

Nevertheless, suppose we take the differentials in raw labor productivity at face value, and assert that high post-Civil War tariffs averaging 50% on manufacturing imports aided the economy by allowing for the substitution of high-value manufacturing for low-value agricultural employment.

In the generation after the Civil War, imports of manufactured goods averaged some three percent of national product. At an assumed import elasticity in the range from one-half to two, between 0.7 and 3.0 percent more of national product was produced in the manufacturing sector than would have been the case in the absence of the tariff. If the entire difference in raw productivity between agriculture and manufacturing were gained for each worker shifted into manufacturing as a result of the tariff, national product might have been on the order of 0.3 and 1.5 percent higher as a result of this effect of the tariff.

The Tariff and Foregone Exports

Offsetting these possible benefits from a higher tariff are two certain costs.

First, the tariff meant that the U.S. gave up the opportunity to export more high value-added agricultural products to Europe to boost its national income. Suppose for the simplicity's sake that the elasticity of demand for imports was one. Then a thirty-percent tariff (a little lower than the average value over 1800-1940) would reduce the import share of national demand from a counterfactual level of nine percent to the actual level of about seven percent of national product. The consumer and producer surplus foregone on each discouraged import would amount, on average, to fifteen percent of the import's value.

The net result? A reduction in real total factor productivity of some 0.3 percent of national product as the U.S. was forced to shift economic activity away from its most efficient pattern of specialization in the world division of labor. More generally, a thirty percent tariff would generate a reduction of $0.3(e^2)$ percent in total factor productivity, where e is the elasticity of demand for

imports. There is little reason to think that such a reduction in real incomes would fall disproportionately on capital rather than on labor, and so equalize the distribution of income and wealth. There is good reason to think that such a reduction in real incomes would transfer wealth from Western farmers to Eastern industrialists, and so make late nineteenth-century America a more unequal society.¹⁴

The Tariff and Foregone Investment

Second, the tariff made a very wide range of investment goods—from British machine tools and steam engines to steel rails to precision instruments—more expensive. For more than a generation after the end of the Civil War, British machinery and iron and steel exports remained competitive in much of the United States market, implying that the roughly 50 percent tariffs imposed on imports of capital goods from abroad had an impact not only on the one two percent or so of national product spent on imported goods for investment, but on prices of domestically-produced capital goods as well.

The impact of the tariff on accumulation of imported investment goods is straightforward. Because Americans chose to import them in spite of the tariff, they must have had a high economic value. The tariff meant that an American investor who spent £3 on British-investment goods received only £2 worth of goods in return. Thus the tariff diminished real investment in imported capital goods by on the order of one percentage point of national product.

The effect of the tariff on the quantity of investment in domestically-produced capital goods is harder to assess. In the post-Civil War generation, some 16 percent of national product on average was invested in domestically-produced, non-residential construction capital goods. If each \$1 of tariff imposed on a foreign-made capital good raised the cost of its domestic substitute by as little as 12.5¢, then a 50 percent tariff on imported manufactures would diminish the share of national product devoted to investment in domestically-produced capital goods by one percentage point of national product. If each \$1 of tariff imposed on a foreign-made capital good raised the cost of its

¹⁴ See Jeffrey Williamson, *Inequality, Poverty, and History* (Cambridge, MA: Basil Blackwell, 1991).

domestic substitute by 37.5¢, then a 50 percent tariff on imported manufactures would diminish the share of national product devoted to investment in domestically-produced capital goods by three percentage points of national product.

If this is indeed the plausible range, then the damaging effects of the tariff on investment were extremely important for nineteenth-century growth. A reduction in the real investment share of national product of two to four percent carries with it, in the long run, a reduction in the capital-output ratio of ten to twenty percent—and a reduction in productivity, and real wages, of five percent or more.¹⁵

Such a loss is certainly as large as whatever offsetting effect the tariff might or might not have had in shifting the pattern of spending away from consumption by inducing savings, or in shifting employment into higher value added sectors.

Learning-by-Doing and “Increasing Returns”

There remains one question: doesn't the analysis above ignore the dynamic, growth-increasing effects of investment and specialization in manufacturing to focus on the static, neoclassical, one-time effects? Wouldn't consideration of a model in which investment, and specialization in manufacturing, had long-run dynamic effects on the growth rate of total factor productivity reverse the verdict?

One line of thought—the line explored by Louis Johnston in reinvestigating analyses of the

¹⁵ For aggregate growth models fitted to nineteenth-century U.S. experience, see Moses Abramovitz, “Resource and Output Trends in the United States since 1870,” American Economic Review 46:2 (May 1956), pp. 5-23; Moses Abramovitz and Paul David, “Reinterpreting American Economic Growth: Parables and Realities,” American Economic Review 63:2 (May 1973), pp. 428-39.

possible impact of Civil War debt repayment¹⁶—is that, in a sense, the economy’s “stock of industrial knowledge” is proportional to its stock of industrial capital. Past *net* (not replacement) investments produce not only capital but knowledge: knowledge about how to employ new production technologies, about how to make machines run more efficiently, about how to manage workers and businesses in an industrial environment: knowledge that cannot be kept the “private” property and resource of the firm that did the investing, but rapidly becomes available to all producers through inspection of their competitors’ operations and the hiring away of their competitors’ engineers.¹⁷

In this case, start from the standard neoclassical production function:

$$(1) \quad y = \alpha (\dot{n}) + (1 - \alpha)(\dot{k}) + a$$

where “ y ” is the proportional change in total production, “ n ” is the proportional change in the economy’s labor supply, “ k ” is the proportional change in the accumulated net capital stock, “ α ” is the share of national income earned by labor, and “ a ” is the proportional change in “technological knowledge” determined by some process of invention and innovation, unrelated to factor accumulation, elsewhere in the society. But “new growth” models allow for feedback from factor accumulation to technological knowledge, and replace “ a ” with “ $a' + \mu \dot{k}$ ”—a portion a' of advances in technological knowledge that truly is generated by factors outside the macroeconomy, and a portion $\mu \dot{k}$ that is a byproduct of increases in the total net stock of accumulated capital. The aggregate production function is thus:

$$(2) \quad y = \alpha (\dot{n}) + (1 - \alpha)(\dot{k}) + a' + \mu \dot{k}$$

$$(3) \quad y = \alpha (\dot{n}) + (1 - \alpha + \mu)(\dot{k}) + a'$$

¹⁶ In addition to Louis Johnston, *Endogenous Growth and the American Economy* (Berkeley, CA: Berkeley Ph.D. Diss., 1990), see also John James, “Public Debt Management Policy and Nineteenth Century Economic Growth,” *Explorations in Economic History* 21(2) (April 1984): pp. 192-217.

¹⁷ See Jeremy Atack, “Economies of Scale and Efficiency Gains in the Rise of the Factory in America, 1820-1900,” in Peter Kilby, ed., *Quantity and Quiddity: Essays in U.S. Economic History* (Middletown, CT: Wesleyan University Press, 1987).

A given increment to the capital stock boosts production by more in “new growth” models because a given investment not only increases the productivity of the investing firm, but adds to the stock of practical experience and social knowledge about how to use modern machine technologies productively. Businesses, however, do not take into account the effect of their investment decisions on overall economy-wide productivity: because all their competitors rapidly gain access to the same “technological knowledge” as well, benefits of increased economy-wide productivity show up one-for-one in higher wages, and have no effect on firm profits. But the economy as a whole exhibits *increasing returns*. Thus policies that boost savings, investment, and overall capital accumulation make a significant difference in faster productivity and economic growth, and higher standards of living. Could adopting this approach reverse the presumption that high late-nineteenth century tariffs lowered output and retarded growth? The answer is “No.” The key problem is that the United States levied its heavy tariffs on those manufactured capital goods whose accumulation is the trigger for advances in knowledge and total factor productivity.

To see this, close the model above with a simple capital accumulation equation: the proportional rate of growth of the capital stock k depends on the depreciation rate δ , on the economy’s savings rate s , and on the price of capital goods, p^k , relative to the price of output in general:

$$(4) \quad k = \frac{s}{p^k} \frac{Y}{K} - \delta$$

where capital Y and capital K are the *levels* of production and of the accumulated net capital stock, respectively. And, for simplicity, assume that labor force growth n and the exogenous component of productivity growth a (or a') are constant. Consider three cases: the neoclassical model, in which total factor productivity growth is unconnected with factor accumulation ($\mu=0$); the particular specification used by Louis Johnston ($\mu=0.05$), with the magnitude increasing returns estimated from his study of industry location in the nineteenth century; and a specification giving a stronger role to increasing returns ($\mu=0.10$). The parameter values needed for the models made up of (1) and (4) or (3) and (4) to replicate growth over the post-Civil War generation 1870-1910 in the “baseline” high-tariff case are shown in table 1 below.

Table 1: Parameter Values, One-Sector Model

Parameter		Neoclassical Model	"Low Externality" Model	"High Externality" Model
n	Annual labor force growth	2.7%	2.7%	2.7%
s	Savings rate	19.5%	19.5%	19.5%
pk	Relative price of capital goods	1, 1.1, 1.2	1, 1.1, 1.2	1, 1.1, 1.2
	Annual depreciation	3%	3%	3%
	Labor share of income	68%	68%	68%
a	Annual exogenous TFP growth	1.13%	0.87%	0.64%
μ	Productivity effect of investment	—	0.05	0.10

What is the effect of removing the tariff on this model? First, there is a one-time boost to total factor productivity. With a counterfactual import share of GDP in the late nineteenth century of eight percent, and with a thirty percent average tariff, the one-time boost to economy-wide total factor productivity as a result of tariff elimination is 0.3 percent under an assumed unit elasticity of demand. Second, the tariff had artificially elevated the relative prices of industrial goods, including the relative price of capital goods. A higher price of capital goods means that any given savings effort will generate less investment. Thus with a high tariff the rate of growth of the capital stock will be *lower* than with free trade no matter what the original stock of capital. No matter where the economy starts, capital accumulation will be lower with a higher tariff—and so, over time, productivity will fall further behind both because a lower-productivity economy will support a lower savings effort and because the higher price of capital goods translates the lower savings effort into a still lower amount of net investment.

Table 2 shows the effect of tariff elimination in these three specifications for two cases: the “low effect” case in which removal of the tariff would have boosted net investment by only two percent of national product, and the “high effect” case in which removal of the tariff would have boosted net investment by four percent of national product. In the neoclassical “no externalities” model, removal of the tariff would have generated a substantial boost to economic growth: total national product in 1900 is 4.3 to 7.8 percent higher. But when analyzed in “new growth” models—

models that assume a link between investment, learning-by-doing, and the stock of social “technological knowledge” that boosts total factor productivity—the late nineteenth-century tariff imposed even higher costs on the U.S. economy. National product in 1900 was depressed by between 5.1 and 11.4 percent because of the late nineteenth-century tariff. The mechanisms by which tariffs retard growth are the same. A high-tariff economy throws away some of the potential gains from the international division of labor. A high tariff economy is a low-investment economy, hence a slower growth economy. And these effects are larger because the link between investment and growth is stronger as we move away from the simple neoclassical specification.

Table 2: Effect of Tariff on Economic Growth, One-Sector Model

	Boost to Output Over 30 Years	Boost to Annual Growth
<i>Neoclassical Model</i>		
Tariff elimination: low effect	4.3%	0.14%
Tariff elimination: high effect	7.8%	0.25%
<i>Increasing Returns—Moderate Case (23.5% of TFP growth due to "externalities")</i>		
Tariff elimination: low effect	5.1%	0.16%
Tariff elimination: high effect	9.4%	0.30%
<i>Increasing Returns—High Case (46.5% of TFP growth due to "externalities")</i>		
Tariff elimination: low effect	5.8%	0.19%
Tariff elimination: high effect	11.4%	0.36%

Only if Eastern industrialists had a markedly higher propensity to save than Western farmers,¹⁸ or if eastern workers responded to better opportunities in industry by investing especially heavily in their own educations—and we have no good reason to think that either of these was the case—would the standard neoclassical growth analysis suggest that the late nineteenth century tariff might

¹⁸ For some evidence that this was not the case, see John James and Jonathan Skinner, “Sources of Savings in the Nineteenth Century United States,” in Peter Kilby, ed., *Quantity and Quiddity: Essays in U.S. Economic History* (Middletown, CT: Wesleyan University Press, 1977), and Susan B. Carter and Richard Sutch, “The Myth of the Industrial Scrap Heap: A Revisionist View of Turn-of-the-Century American Retirement,” *Journal of Economic History* 56, 1 (forthcoming March 1996).

have boosted the growth of the American economy.

Thus the particular structure of the late nineteenth-century American tariff makes it hard to see how the fact that production is carried on in different sectors might reverse the one-sector model's conclusion that the tariff was bad for growth. Perhaps a tariff that focused on light manufactures or consumer goods, and left investment goods free of duty might have been good for economic growth. But a tariff that lay heavily on capital goods needed for industrialization and accumulation was not.

Conclusions

The U.S. has been a free-trade country for perhaps half a century, or a bit more. Before the Great Depression pressure for protection waxed and waned, but was usually strong enough to maintain tariffs in the thirty to fifty percent *ad valorem* range on manufactured imports. Some—like F.W. Taussig—would argue that the dominance of protection in the pre-Great Depression United States was the result of federal demands for revenue coupled with industry demands for protection and an insufficient degree of economic literacy, and looked to education and rational debate to bring the country closer to free trade.

A second interpretation—one I favor—would argue that once industry has grown up inside a hot house created by war-driven revenue tariffs, protection is all but inevitable until industry becomes sufficiently competitive to no longer value it highly; under this interpretation the United States outgrew its attachment to relatively high tariffs in the early twentieth century.

A third interpretation would see the coming of free trade as a horrible mistake, that threatens to leave us defenseless against more ruthless practitioners in this century of the trade policy America used in the last century. But even on its own terms—a viewpoint that views growth, production, and national power as all, and consumption as nothing—it is hard to argue that America's protectionist impulses did its industrial development a favor in the nineteenth century. The benefits to early specialization and concentration in manufacturing are too small, and the costs

to making the purchase of foreign-produced investment goods too great, to convincingly and quantitatively argue that America's nineteenth century manufacturing tariffs were in any sense an aid to economic development.

The problem is that the dynamic effect of "new growth theory" is a two-edged sword. It is hard to argue that the benefits of the tariff for growth had dynamic effects that greatly multiply their impact on national product without also implicitly arguing that the costs—a higher price of investment goods, and thus a reduced flow of investment and a slower pace of capital deepening—had dynamic effects that greatly multiplied their impact as well. Yes, the theorists of the new growth theory have issued us a license to think of policies as possibly having effects orders of magnitude larger than in conventional neoclassical approaches to growth. However, destructive policies—like tariffs that diminish national product and make investment especially expensive—have their quantitative effects amplified as well.

Thus it is not simple or straightforward to point to the coexistence of a late nineteenth-century tariff with America's industrial revolution, and to argue that the benefits of the late nineteenth-century tariff in concentrating labor in industrial sectors where external economies and effects *may* have been important aided America's economic growth and standard of living. The first-order effect of the tariff was not to shift labor from agriculture to industry, but to make investment more expensive. And there is no vision of industrial development that holds that the way to enhance it is to make investment difficult and expensive.

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