A Merchant's Republic: Crisis, Opportunity, and the Development of American Capitalism, 1765-1807

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Abstract

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The American colonies stood among the wealthiest societies on earth when revolutionary sentiment burst into rebellion in 1775. While the struggle for independence ultimately succeeded, the war wrought widespread physical devastation, inflation, and economic collapse. While the new United States possessed vast natural resources, relative constitutional stability, and global markets eager to consume American agricultural commodities, historians have confused these opportunities for growth with guarantees of it, casting a deterministic vision that omits the characters that turned growth potential into a dynamic economic culture. Merchants and entrepreneurs led a reformation of American business following the Treaty of Paris. Spurred by depression-era declining imports, falling prices and wages, and rising debts, post-Revolutionary merchant-entrepreneurs made subtle yet radical changes to the way they allocated capital, mitigated risk, formed trade networks, and exerted political power. These changes, and the businessmen that initiated them, sparked a vital economic culture defined by flexible and specialized entrepreneurialism.

The Confederation-era business reformation touched almost every part of the American economy. Novel financial institutions and instruments like banks, commercial paper, and asset-backed contracts drove the rapid expansion and integration of the domestic economy and financed exports to previously prohibited markets in Europe, the East Indies, and South America. Increasingly sophisticated capital markets converted booming slave populations into new sources of liquid capital, which underwrote new enterprises. As goods and information began to flow more freely, merchants streamlined antiquated colonial-era business structures. Increasingly sophisticated firms overhauled management and principal-agent relationships to boost trade efficiency and increase profits. At the same time, American merchant-entrepreneurs formed institutions like the New York Chamber of Commerce and the Buttonwood group—the precursor to the New York Stock Exchange—to expand commercial relations and facilitate trust. This dissertation focuses on a cast of approximately 10 merchant-entrepreneurs in Boston, Providence, Philadelphia, New York, Charleston, and the southern agricultural hinterlands, tracing the evolution of their business practices and the capitalist culture they inaugurated.

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John Donne wrote that “no man is an island,” and that is certainly the case in academia. I could thank hundreds of people for their kindness, generosity, and assistance. Nonetheless, in the interest of time the following only notes the people or institutions without which this project literally would not exist. My undying gratitude to those not mentioned by name.

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Introduction

"To a High Pitch of National Happiness"

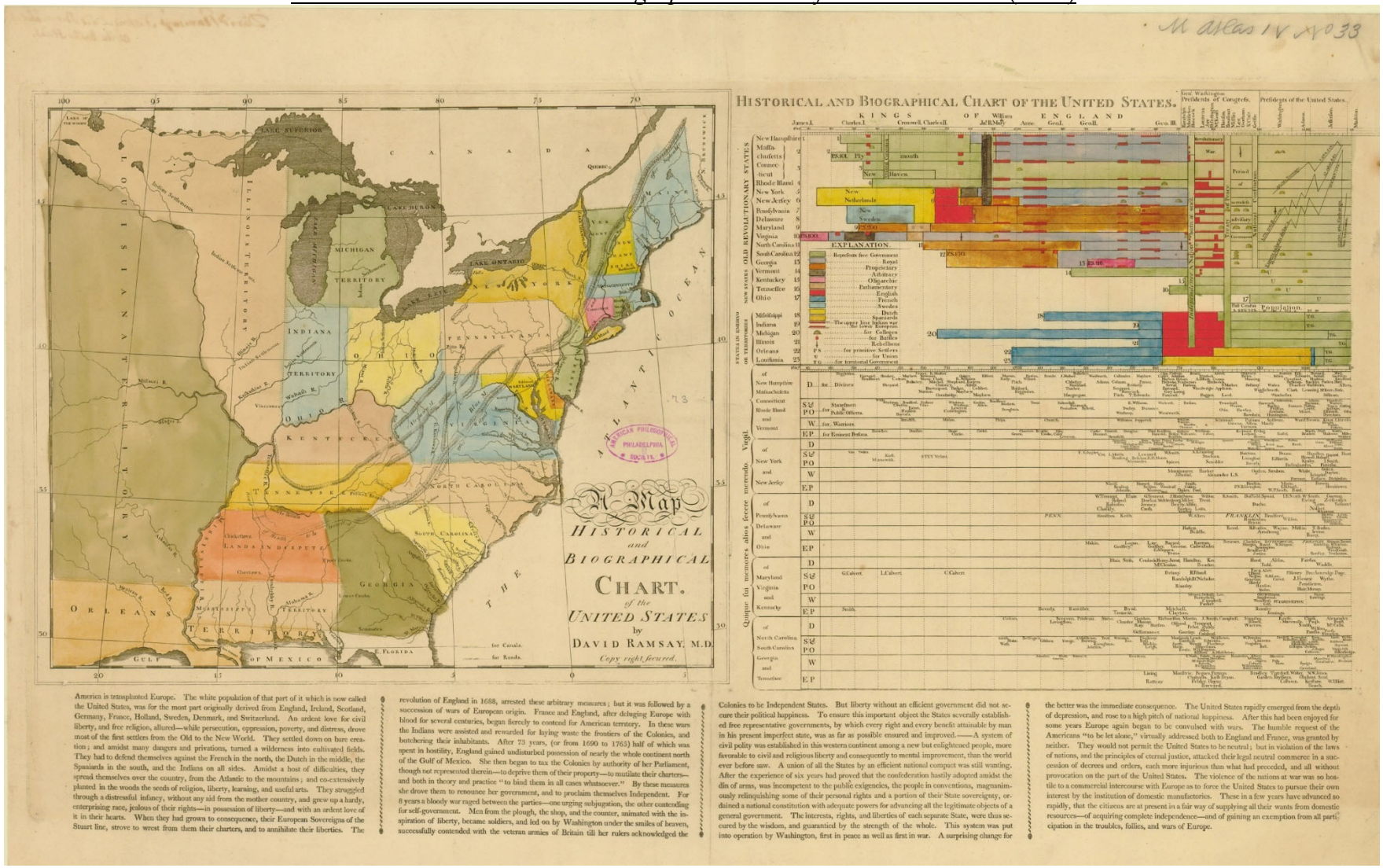
In 1810, South Carolina physician David Ramsay published his hand-colored, twenty-nine-by-seventeen-inch *Historical and Biographical Chart of the United States*. Throughout the early Republic, the Revolutionary War veteran and Continental Congressman sought to tell a comprehensive history of the United States up until that point.[1] Ramsay published several historical narratives of the period, including the nuanced *History of the American Revolution* in 1789. Ramsay's historical work reverberated with the American public, much of which sought synthetic accounts of the Revolution they just endured. Ramsay's emphasis on national unity and shared sacrifice under the benevolent guidance of heaven led him to produce several other historical works, including *The Life of George Washington, Commander in Chief of the Armies of the United States of America* in 1807, and *The History of South-Carolina, from its first Settlement in 1607, to the Year 1808* in 1809. In 1810, Ramsay brought his historical perspective to a visual medium with his *Historical and Biographical Chart of the United States*.[2]

Ramsay's *Chart* combines geographical, biographical, and historical details into a clear and strongly patriotic narrative (see Illustration I.1). Historian Michael D. Hattem describes Ramsay's *Chart* as a thoroughly "Enlightenment project of collecting, ordering, presenting, and

[1] Trained at the College of New Jersey and then the medical College of Philadelphia by Benjamin Rush, Ramsay held a first-rate intellect and a nose for detail. After his August 17th, 1780 capture by British dragoons, the patriotic Ramsay endured ten months on a British prison ship and then exile in St. Augustine, Florida. Upon his release, and perhaps more harrowing from Ramsay's perspective, the doctor served several terms in the South Carolina legislature and Continental Congress throughout the 1780s. Despite his latter success as a physician, Ramsay's intimate connection with the Revolution led him to canonize the history of American independence.

[2] David Ramsay, *The Life of George Washington, Commander in Chief of the Armies of the United States of America* (Baltimore: Joseph Cushing, 1811); David Ramsay, *The History of South-Carolina, from its first Settlement in 1607, to the Year 1808* (Newberry, S.C.: WJ Duffy, 1809).

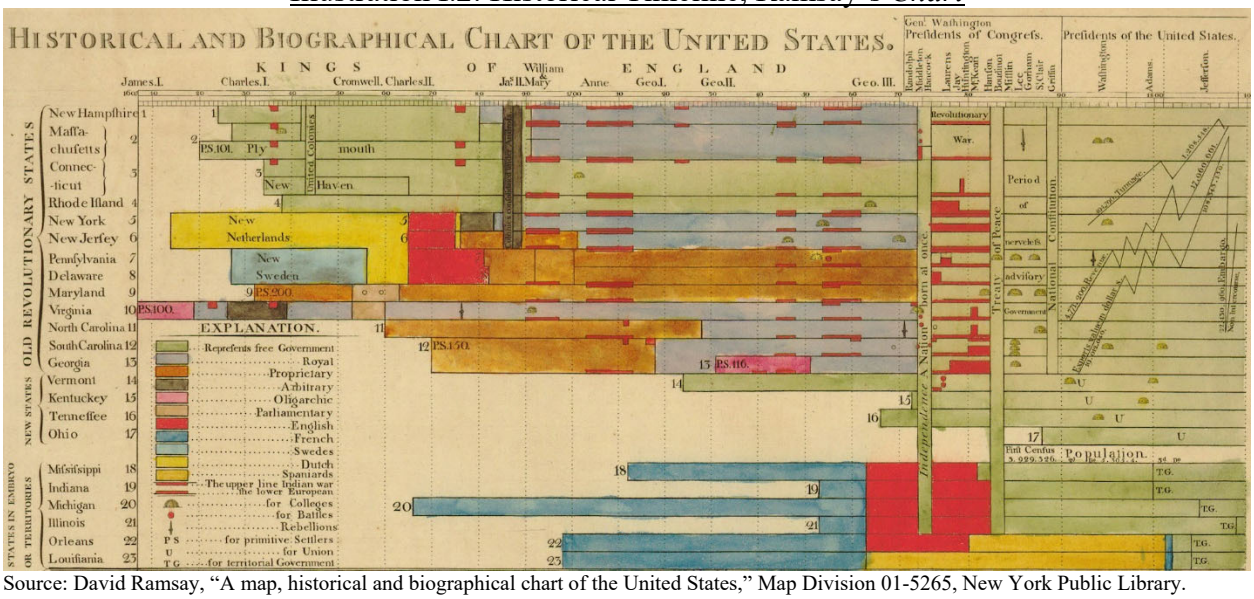
Illustration I.1: *Historical and Biographical Chart of the United States* (1810)



Source: David Ramsay, "A map, historical and biographical chart of the United States," Map Division 01-5265, New York Public Library.

disseminating useful information," and presenting that data as a progressive, linear narrative.[3] While a detailed map of the American nation and western territories dominates the document, the historical chart in the upper-right hand corner demonstrates Ramsay's exceptionalist narrative of the Revolution and creation of the American nation. The historical section presents an annotated timeline, dotted by symbols, colors, and text to articulate a clear narrative of American progress from the first settlements in Virginia through the presidency of James Madison.

Illustration I.2: Historical Timeline, Ramsay's *Chart*



Source: David Ramsay, "A map, historical and biographical chart of the United States," Map Division 01-5265, New York Public Library.

As seen in Illustration I.2, "Old Revolutionary States" occupy the vertical axis, and time, delineated by political leadership, comprises the horizontal plane. While numerous features mark the document, three primary elements dominate Ramsay's visual depiction of the colonial era. First, "Kings of England" appear above the horizontal axis. Below this label sits the names of individual monarchs, marking the years of their reign. Second, Ramsay illustrates each row in color, with each color denoting the dominant ethnic group in every colony. "English," "French,"

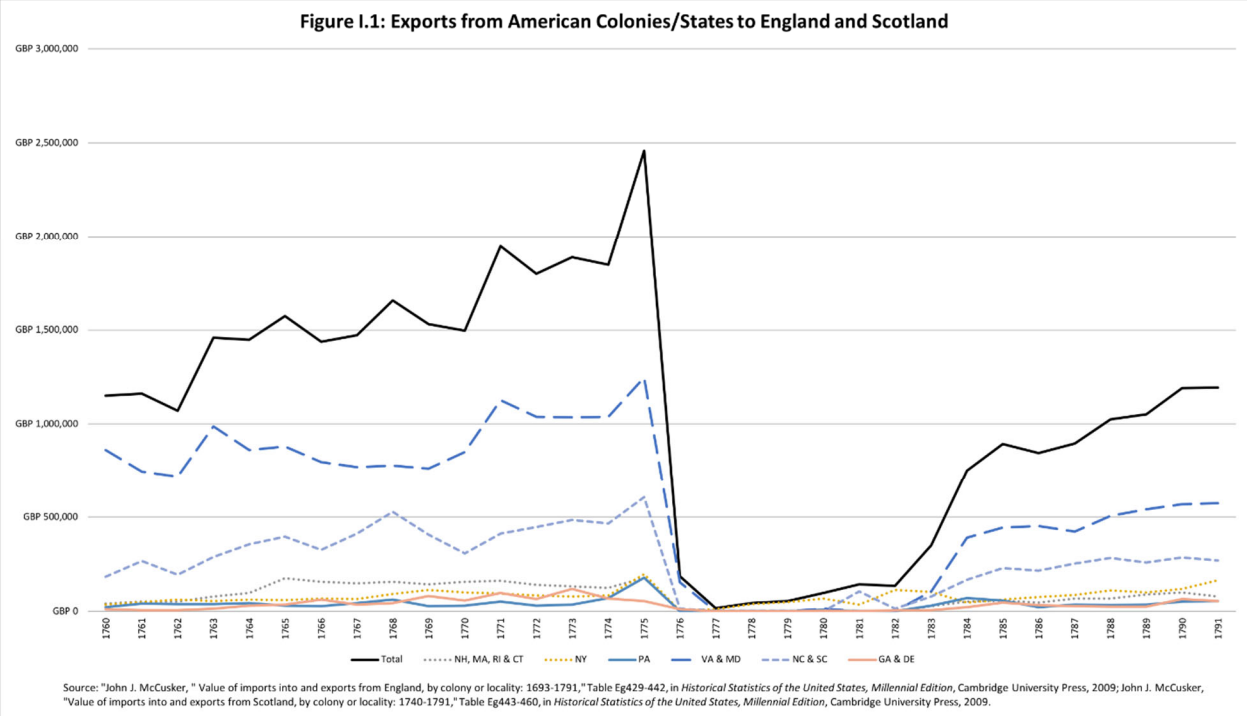
[3] Michael D. Hattem, "Historical Charts and David Ramsay's Narrative of Progress," *The Junto: A Group Blog on Early American History*, May 26, 2015, https://earlyamericanists.com/2015/05/26/historical-charts-and-david-ramsays-narrative-of-progress.

"Swedes," "Dutch," and "Spaniards" dominate this portion of the table. Finally, red bars denoting "Indian" and "European" wars pockmark Ramsay's colonial timeline. Ramsay records at least fourteen individual conflicts, some of which rest in all thirteen rows and others that mark only one. Despite the variance from row to row, Ramsay clearly suggests that three features—royalty, ethnicity, and warfare—dominated colonial American life. In Ramsay's articulation, the "old Revolutionary States" existed in a disjointed and externally-enforced union in which unenlightened and anti-republican forces drove the colonies toward an inevitable schism with the mother country.

According to Ramsay, much more than political independence occurred in 1776. Ramsay inserts a vertical bar separating the colonial era from that which comes after, reading, "*Independence* A Nation born at once." The red bars of warfare understandably dominate Ramsay's depiction of the war years. However, a new era emerges after the "Treaty of Peace" and brief "Period of nerveless advisory Government." Following Ramsay's notations for the "National Constitution," "Presidents of the United States" replace the "arbitrary" "Kings of England" across the top of the *Chart*. More importantly, the red bars of warfare and colored rows of ethnic differentiation disappear. In their place, a uniform brown area that "Represents free Government" replaces the symbols of royal and ethnic strife. Most strikingly, instead of the red bars of warfare, the new era features dramatically upward sloping bars of economic and commercial growth. While a few small saw tooth regressions appear from time to time, Ramsay clearly articulates a period of dramatic economic expansion. Commercial tonnage, revenues, and export values all jet upward with little hindrance until Jefferson's Embargo of 1807-1808.

The message of Ramsay's *Historical and Biographical Chart of the United States* leaps off the page: ethnicity, royalty, and war defined the colonial period, but the new American

republic inaugurated an age of national unity and commercial expansion. In his chart, Ramsay proclaimed a Novus Ordo Seclorum, "a new order of the ages," in which trade and economic growth replaced the quasi-feudal colonial regime dominated by bloodlines, kings, and commanders. Ramsay reinforced this sudden change to the American republic with text below the chart. "The interests, rights, and liberties of each separate States, were thus secured by the wisdom, and guarantied [sic] by the strength of the whole," Ramsay wrote. "A surprising change for the better was the immediate consequence. The United States rapidly emerged from the depth of depression, and rose to a high pitch of national happiness."[4] The Revolution came, Ramsay proclaimed, and independent prosperity decisively followed.

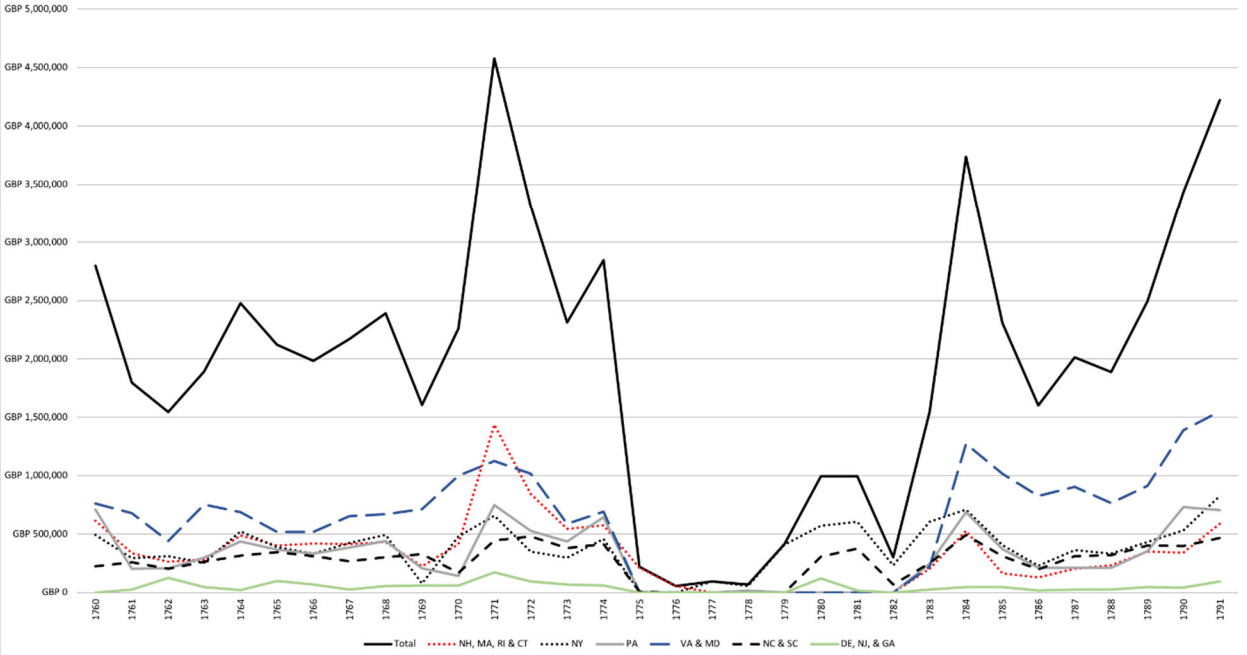


But prosperity did not simply follow independence. The War devastated the American economy. As shown in Figures I.1 and I.2, exports and imports collapsed upon the outbreak of

[4] *A Chronological Table of the Principal Events which have taken place in the English Colonies Now United States, from 1607, till 1810, explanatory of and supplementary to Dr. Ramsays Map Historical and Biographical Chart of the United States and noticing the Progress of Improvement in the same* (Charleston: From the Press of J. Hoff, no. 6, Broad-Street, 1811).

hostilities with Great Britain.[5] The closure of British ports to American goods and seizure of American ships by the Royal Navy depleted the American merchant marine and cut off the flow of specie to the newly independent states. In addition to the collapse of foreign trade, coastwise commerce came under threat from the heavy British military presence along the eastern seaboard. As a result, American commodities piled up in ports as merchants could not ship, transfer, or sell their goods to buyers at home or abroad.

Figure I.2: Imports to American Colonies/States from England and Scotland



Source: "John J. McCusker, " Value of imports into and exports from England, by colony or locality: 1693-1791," Table Eg429-442, in *Historical Statistics of the United States, Millennial Edition*, Cambridge University Press, 2009; John J. McCusker, "Value of imports into and exports from Scotland, by colony or locality: 1740-1791," Table Eg443-460, in *Historical Statistics of the United States, Millennial Edition*, Cambridge University Press, 2009.

Substantial capital loss only compounded export-import problems. Physical capital destruction ravaged American capital stocks, as rampaging armies burned fences, destroyed buildings, trampled fields, and confiscated tools, machinery, and animals. Allan Kulikoff rightly argues that, "by confiscating farm surpluses, armies made local exchange impossible and

[5] Susan B. Carter, Scott S. Gartner, et al., *Historical Statistics of the United States, Millennial Edition Online*, 2009, Cambridge University Press, hsus.cambridge.org.

impoverished farmers, already struck hard by embargoes, plunder, and inflation."[6] The loss of capital and productivity reverberated in the cities as well as the countryside. The diminishment of overall productivity, combined with British embargos and closed ports, decimated the capital stocks in export hubs like Boston and Charleston, both of which experienced severe physical damage that they lacked the capital to rebuild. New York suffered even greater physical capital loss when a fire sparked on September 20, 1776 destroyed approximately 25 percent of the structures on Manhattan Island.[7] Due to the subsequent British occupation of New York City that lasted until the end of the war, little capital restoration took place until 1784.

The loss of human capital proved even more detrimental to the American economy. Approximately 25,000 American patriots died as a result of the conflict, roughly equaling 1 percent of the 2.5 million prewar population.[8] At least an equal number suffered debilitating injuries that diminished their postwar productivity and required costly care for the rest of their lives. In addition, thousands of loyalists departed for Canada, the West Indies, or Britain itself. As a result, the war decimated the American labor supply, raising already high wages that few employers could pay.[9] Labor force participation rates plummeted both during and immediately after the war as able bodied men fought and either died of suffered injury. In addition to the toll on the white male population, human capital stocks suffered even more as thousands of slaves decamped for British lines, and women abandoned farms and shops to service military camps.[10]

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[6] Allan Kulikoff, "'Such Things Ought Not To Be': The American Revolution and the First National Great Depression," in Andrew Shankman, ed., *The World of the Revolutionary American Republic* (New York: Routledge, 2014), 141.
[7] Edwin G. Burrows and Mike Wallace's *Gotham: A History of New York City to 1898* (New York, 1999), 241-244; Barnet Schecter, *The Battle for New York: The City at the Heart of the American Revolution* (New York: Walker & Company, 2002), 273-384.
[8] Robert F. Bruner and Scott C. Miller, "America's Depression of 1784-1787 and the Advent of Nationalism," UVA-F-1778 (Charlottesville, VA: Darden Business Publishing, 2017), 2-3.
[9] Kulikoff, "'Such Things Ought Not To Be'," 145.
[10] Alan Taylor, *American Revolutions: A Continental History, 1750-1804* (New York: W.W. Norton & Company, 2016), 226-233.

Finally, immigration nearly stopped during the war as well, preventing outside labor from filling the needs of the wartime and immediate-postwar economy.[11]

American financial capital stocks also suffered greatly during the War. The colonies had long relied on British capital and credit to operate its export trade, which fostered the robust linkage effects that drove the domestic American economy.[12] The colonists who possessed significant financial capital stocks tended to hold strong links to the British state, such as Boston merchant Richard Clark and members of New York's DeLancy family. Thus, upon the outbreak of hostilities in 1775, the thirteen colonies experienced significant capital flight as loyalists moved assets and financial connections out of the colonies. At least 10,000 loyalists departed from New York City alone at the end of the war, many of them leading merchants and landowners.[13] Perhaps even more damaging, American merchants lost credit connections with British commercial houses, which limited export potential even if the Americans could find receptive markets.

The war drastically impacted capital flows as well as capital stocks. The near-absolute collapse of foreign trade and a lack of federal fiscal authority resulted in both states and the Continental Congress financing wartime expenses with debt.[14] Congress borrowed over $11 million from foreign sources during the war, including Dutch bankers and the French state. However, these loans failed to cover the costs of revolution. To fill the funding gap, both state governments and Congress resorted to a myriad of paper credit instruments. Congressional

[11] Kulikoff, "'Such Things Ought Not To Be'," 135-137.
[12] Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 3-58; Stuart Bruchey, *The Roots of American Economic Growth* (New York: Harper & Row, 1968), 17-55.
[13] Philip L. White, *The Beekmans of New York in Politics and Commerce, 1647-1877* (New York: New York Historical Society, 1956), 497.
[14] E. James Ferguson, *The Power of the Purse; a History of American Public Finance, 1776-1790* (Chapel Hill: Published for the Institute of Early American History and culture at Williamsburg, Va., by the University of North Carolina Press, 1961), 179–286.

authorities issued loan office certificates, indents, Treasury-registered debt receipts, and many other IOUs to suppliers, soldiers, and foreign creditors. Continental bills of credit, the infamous "Continentals," became the most prominent symbol of the revolutionary confederation's precarious finances. Market saturation and a lack of confidence in Congress's ability to redeem these notes resulted in a rapid depreciation of all forms of government paper. The devaluation of Continentals reached such epic proportions that Congress revalued previously issued currency at only 2.5 percent of its original face value after only three years.[15] Congressional bills of credit depreciated at a nearly equal rate. By the time of Constitutional ratification in 1788, Continental bills of credit traded at ten to fifteen cents on the dollar.[16]

Making matters worse, state governments ran steep fiscal deficits during the war. The lack of hard money, collapsing exports, and declining land values made state tax collection virtually impossible. Deteriorating tax receipts also resulted in deficit financing on a state level. As a result, the new nation faced a crushing debt burden upon independence. The combined state governments ended the war with approximately $25 million in unfunded debts, largely to domestic suppliers, soldiers, and creditors. The Continental government added an additional $11.7 million in foreign loans, and approximately $40.4 million in domestic debt.[17] Taken together, these debts demanded approximately $4.5 million in annual interest payments. This figure registers well above gross annual tax revenues in 1783, meaning that debt payments on many levels of government faced suspension or non-payment in the new republic's first years.

[15] John Steele Gordon, *Hamilton's Blessing: The Extraordinary Life and Times of Our National Debt* (New York: Walker, 1997), 12.
[16] Max M. Edling, *A Revolution in Favor of Government: Origins of the U.S. Constitution and the Making of the American State* (New York: Oxford University Press, 2003), 153.
[17] Gordon, *Hamilton's Blessing*, 21-24.

Adding to the wartime fiscal problems, patriot authorities failed to withdraw emitted bills from circulation. Since Congress did not have the authority to tax Continental bills out of existence, they remained on the market even as congressional authorities issued more paper to cover the mounting costs of war.[18] To extinguish old bills, as well as raise new revenue, Congress began issuing bonds payable in previous issues. However, these new securities only added to the already bloated debt burden and failed to reduce the paper money supply.[19] Rampant inflation resulted in the effective death of Continental bills by 1781.

In that same year, Congress virtually abandoned the Continental and stopped paying interest on its debt. The Congressional suspension of its paper obligations helped quell inflation but it also left the new nation with no viable currency and no plan for a replacement. The cessation of wartime specie infusions—mostly from French procurement officers and Continental quartermasters—only exacerbated the dearth of circulating currency. Making matters worse, Continental authorities failed to attract specie as states refused—or often were unable—to meet their requisition quotas.[20] The lack of hard money made state tax collection virtually impossible. Many citizens, despite having sufficient wealth, lacked the currency to pay their tax

[18] An extensive debate, largely between Bruce D. Smith and Ron Michener, revolves around the microeconomics of colonial and wartime inflation. For the fundamentals of this debate, see Bruce D. Smith, "American Colonial Monetary Regimes: The Failure of the Quantity Theory and Some Evidence in Favor of an Alternative View," *The Canadian Journal of Economics/Revue Canadienne d'Economique*, Vol. 18, No.3 (Aug., 1985), pp. 531-565 and Ronald Michener, "Fixed Exchange Rates and The Quantity Theory in Colonial America," *Carnegie-Rochester Conference Series on Public Policy*, 27, (1987), 233-308. For a deeper examination of the issue, see Farley Grubb, "Creating the U.S. Dollar Currency Union, 1748-1811: A Quest for Monetary Stability or a Usurpation of State Sovereignty for Personal Gain?," *The American Economic Review* 93, no. 5 (December 1, 2003): 1778–1798; Richard Sylla, "The Transition to a Monetary Union in the United States, 1787–1795," *Financial History Review* 13, no. 01 (2006): 73–95; Mary M. Schweitzer, "State-Issued Currency and the Ratification of the U.S. Constitution," *The Journal of Economic History* 49, no. 2 (June 1, 1989): 311–322; Ferguson, *The Power of the Purse; a History of American Public Finance)*, 179–286.

[19] Robert E. Wright, *One Nation under Debt: Hamilton, Jefferson, and the History of What We Owe* (New York: McGraw-Hill, 2008), 50–53.

[20] Woody Holton, *Unruly Americans and the Origins of the Constitution* (New York: Hill & Wang, 2007), 65-67, 72-77, & 153-155.

bills. Increasing seizures of illiquid assets like land resulted in the prices of those assets plummeting.

The resultant deflation squeezed household wealth and sent the real value of indebtedness across the nation skyrocketing. Many states legislated confiscatory tax rates upon independence, necessitated by their need to satisfy their foreign creditors.[21] The combination of exorbitant state tax rates, reduced property values, and the universal dearth of money resulted in a deep economic stagnation of commercial activity. Interest rates bloomed sky high—a direct result of the tight monetary situation—which, in concert with the decline in property values, resulted in a crash in labor and commodity prices.[22] Depressed export levels made specie even more scarce, completing the vicious deflationary cycle.

Thus, saddled with a devastated economy Americans marched into independence in late-1783. Unfortunately, the mid- and late-1780s would be even worse. As detailed in Chapter 2, the Depression of the 1780s resulted in widespread economic disaster, with estimates approaching an approximate net 30 percent GDP loss.[23] Bankruptcies and defaults reached epidemic proportions as merchants and farmers alike could not obtain currency or credit. Civic unrest blossomed across the new nation, to the point that Robert Morris opined in February 1787, "With great concern I see that blood has been drawn across the States. It now behooves Government to pursue the Strikes with Vigor or they are ruined. Lenity will be pusillanimity; Severity is mercy and can alone restore order."[24] The crisis produced so much devastation and unrest that financial historian Thomas K. McCraw called the 1780s "likely the worst decade in American history

[21] Edling, *A Revolution in Favor of Government*, 155–156.
[22] Wright, *One Nation under Debt*, 70.
[23] Peter H. Lindert and Jeffrey G. Williamson, *Unequal Gains: American Growth and Inequality since 1700* (Princeton, N.J.: Princeton University Press, 2016), 85.
[24] Robert Morris to Samuel Meredith, February 6, 1784, Box 10, Folder 36, Clymer-Meredith-Read Family Papers, New York Public Library.

except for the 1930s. And since the country was not yet a nation in anything but name, persistent economic crisis raised the specter of political disintegration."[25]

Yet less than two decades after the worst years of the Depression, David Ramsay's vision of peace and prosperity seemed to have become a reality. By the middle of Thomas Jefferson's second term, American nominal GDP more than tripled from approximately $189 million in 1790 to $617 million in 1806. Over the same period, nominal GDP per capita more than doubled.[26] According to data compiled by Douglass C. North, the American Shipping Activity Index hit a record high in early 1807, while aggregate indebtedness fell to its lowest levels since 1791.[27] The economic outlook appeared so promising that Jefferson promised millions in Federal funds for "canals, roads, colleges, &c," while reducing the federal debt by half and planning to extinguish it entirely.[28] By 1807, the American economy had not only recovered from the Revolutionary War and Depression of the 1780s, but it did so at a record pace. "The years 1793–1808 were years of unparalleled prosperity," North writes. "The evidence suggests that this period was a high water mark in individual well-being which was to stand for many years."[29]

The present study examines how the American economy recovered from the ravages of the Revolution and established a foundation for half a century of prosperity. The American economy did not simply resume the colonial form that preceded the Revolution, but it developed into a new and uniquely American system. Continuities certainly existed between the colonial

[25] Thomas K. McCraw, *The Founders and Finance: How Hamilton, Gallatin, and Other Immigrants Forged a New Economy* (Cambridge, Mass: Belknap Press of Harvard University Press, 2012), 47.
[26] Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018, accessed at https://www.measuringworth.com/datasets/usgdp/sourcegdp.php.
[27] North, *The Economic Growth of the United States*, Table A-III and Table C-IV, 219 & 231.
[28] Thomas Jefferson to Albert Gallatin, May 29, 1805 in John Lauritz Larson, *Internal Improvements: National Public Works and the Promise of Popular Government in the Early United States* (Chapel Hill: The University of North Carolina Press, 2001), 57; Gordon S. Wood, *Empire of Liberty: A History of the Early Republic, 1789-1815* (Oxford: Oxford University Press, 2009), 298-299.
[29] North, *The Economic Growth of the United States*, 53-54.

and post-Revolutionary commercial structures, but the balance between domestic and foreign trade, the integration of markets, the formation of commercial networks, and the execution of business itself fundamentally changed after the Revolution. The war and subsequent Depression of the 1780s forged a new economic reality in the United States, forcing commercial actors to alter their businesses or face insolvency. Of course, the profound and constant volatility of the Napoleonic era opened many opportunities for Americans, resulting in distinct successes and profound disappointments. Nevertheless, the constant experimentation, innovation, failure, and reinvention contributed to a broader capitalist culture defined by dynamic and specialized entrepreneurialism.

Historians have long attributed the revival of short-term economic growth in the early Republic to constitutional stability, Alexander Hamilton's financial revolution, and the dramatic expansion of the Napoleonic-era neutral carrying trade.[30] Other scholars attribute long-term development to America's abundance of unfree labor and non-reproducible natural resources.[31]

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[30] Holton, *Unruly Americans and the Origins of the Constitution*, 3-103; Wright, *One Nation Under Debt*, 4-169; Robert E. Wright, *Wealth of Nations Rediscovered* (Cambridge: Cambridge University Press, 2010); Gordon C. Bjork, "The Weaning of the American Economy: Independence, Market Changes, and Economic Development," *The Journal of Economic History* 24, no. 4 (December 1, 1964): 553–554; Gordon S Wood, *The Creation of the American Republic, 1776-1787* (Chapel Hill: Published for the Institute of Early American History and Culture at Williamsburg, Va., by the University of North Carolina Press, 1969), 394; Forrest McDonald, *We the People: The Economic Origins of the Constitution*, A Publication of the American History Research Center (Chicago: University of Chicago Press, 1958), 167–169; James F. Shepherd and Gary M. Walton, *The Economic Rise of Early America* (Cambridge: Cambridge University Press, 1979), 187–189; Merrill Jensen, *The New Nation: A History of the United States during the Confederation, 1781-1789* (New York: Knopf, 1950), 339–340.

[31] Edward E. Baptist, *The Half Has Never Been Told: Slavery and the Making of American Capitalism* (New York: Basic Books, 2014); Edward E. Baptist, "Toxic Debt, Liar Loans, Collateralized and Securitized Human Beings, and the Panic of 1837" in Michael Zakim and Gary J. Kornblith, *Capitalism Takes Command: The Social Transformation of the Nineteenth-Century America* (Chicago: The University of Chicago Press, 2012); Sven Beckert, *Empire of Cotton: A Global History* (New York: Vintage Books, 2015); Seth Rockman, *Scraping By: Wage Labor, Slavery, and Survival in Early Baltimore* (Baltimore: Johns Hopkins University Press, 2009); Seth Rockman, "What Makes the History of Capitalism Newsworthy?" *Journal of the Early Republic* 34, no. 3 (2014): 439–66; Walter Johnson, *Soul by Soul: Life Inside the Antebellum Slave Market* (Cambridge: Harvard University Press, 1999); Calvin Schermerhorn, *The Business of Slavery and the Rise of American Capitalism, 1815-1860* (New Haven, CT: Yale University Press, 2015); Gavin Wright, "The Origins of American Industrial Success, 1879-1940," *The American Economic Review* 80, no. 4 (September 1, 1990): 651–68; A. Paul David and Gavin Wright, "Increasing Returns and the Genesis of American Resource Abundance," *Industrial and Corporate Change* 6, no. 2 (March 1, 1997): 203–45.

However, as Thomas M. Doerflinger writes in *A Vigorous Spirit of Enterprise: Merchants and the Economic Development in Revolutionary Philadelphia*, the best single volume on the early American economy, "abundant resources are neither a necessity nor a sufficient condition for national prosperity. Many nations with plentiful resources have failed to build strong and vital economies, while other lands enjoying few natural advantages, including Holland, Japan, England, and New England have prospered mightily."[32] In the case of the United States, historians have confused opportunities for growth with guarantees of it, casting a deterministic vision that omits the characters that turned growth potential into a vital economic culture.

The present study examines the merchants who capitalized on the new nation's natural advantages, the structures they created, and the business culture that arose from their actions. The United States's rise as a global economic superpower has blinded citizens and scholars alike to the fact that the Revolution could have very well broken the American economy beyond repair. Whether America's farmers, shopkeepers, statesmen, and merchants could resurrect the American economy remained an open question as the Constitution came into practice in 1789. While the great leaders of the Revolution such as Washington, Madison, Gallatin, and especially Hamilton often receive credit for America's economic resurrection, individual commercial actors, and especially the trans-regional merchant community, made David Ramsey's vision of American prosperity a reality.

Let me be clear: America's commercial resurrection did not run smoothly. Bankruptcy, volatility, crisis, and instability dominated the early Republic's economic environment. However, the story of how American merchants built a dynamic economic system amidst constant and pervasive volatility deserves careful examination. The historical record shows that

[32] Thomas M. Doerflinger *A Vigorous Spirit of Enterprise: Merchants and the Economic Development in Revolutionary Philadelphia* (New York: W.W. Norton & Company, 1986), 4.

American merchants successfully resurrected the American economy and laid the groundwork for the Industrial Revolution of the 1820s and 1830s. This project explains how they did so.

Chapter 1 of this study examines the macroeconomic climate of the Revolutionary era from a statistical perspective. Using assertions by Peter H. Lindert and Jeffrey G. Williamson, and John J. McCusker, of rampant economic growth during the 1790s as a starting point, this chapter outlines the dynamics of American economic development as it emerged from nearly two decades of war and depression. Contrary to the scholarly consensus, the domestic economy comprised almost all American economic activity, as well as net growth, during the early Republic. Extensive growth of the domestic American economy, combined with intensive productivity enhancement, drove dramatic improvement in the American economic condition. American commerce also became more specialized and sophisticated, while producers began to capture value-added that British merchants previously controlled. In the foreign sector, trade with Great Britain decreased and commerce with the rest of the world increased, while American foreign traders adeptly navigated the volatility of Napoleonic era imperial contestation. As a result, American foreign trade became more efficient even as it dwindled in importance. Thus, the increasingly productive foreign sector, combined with the burgeoning domestic market, resulted in nearly two decades of economic growth.

Chapter 2 analyzes the impact of constant crisis and instability on the development of the American economy. After examining the massive debt deflation cycle that ravaged the American economy during the 1780s, this chapter discusses the series of crises that shook American markets in 1791, 1792, 1797, and 1801-1803. At the same time, this chapter unveils the raft of vital institutional, governmental, and private sector reforms that arose directly from the crises. The Depression of the 1780s resulted in constitutional changes that lowered interstate tariff

barriers and paved the way for an integrated domestic market, while the Panics of 1791 and 1792 established the Federal government as a lender of last resort in times of crisis. In the private sector, individual market actors banded together to formalize and regulate financial and commodity markets. They also created vital financial institutions like banks and chambers of commerce, which eased liquidity and credit scarcities. While devastating in the short term, the Depression of the 1780s produced substantial capital consolidation that boosted much-needed investment. Crisis accelerated early American economic development by clearing out old institutions and incentivizing much needed reform in the public and private sector.

Chapter 3 traces the rapid integration of the American domestic economy just before and after the American Revolution. Following the post-Seven Years War recession, American trade between the separate colonies increased dramatically. This pattern of intercolonial, and later interstate, trade accelerated after the Revolution as wartime distribution networks became the foundation of new interstate trade connections. Merchants built new and expansive networks as state, local, and federal governments financed small but vital infrastructure that connected markets across the new nation. Swelling urban centers integrated local and regional producers into their supply chains, thus increasing the productivity of the rapidly integrating urban economies. At the same time, improvements in small roads and river navigation connected rural centers to each other and broader regional entrepôts. Transportation costs and travel times fell dramatically in the decade after the Revolution, allowing goods to flow more freely and providing mechanisms for commodity gluts to arbitrage away. The movement toward an integrated domestic economy made imports less expensive, reduced product scarcities and gluts, and solidified a national economic base that propelled growth into the nineteenth century.

Chapter 4 illuminates the evolution of early American commercial networks. Using New York merchant William Constable as a case study, this chapter employs quantitative and network analysis to map the origins and development of William Constable's commercial structure. First, this chapter establishes that Revolution-based contacts played a vital role as Constable built his network immediately after the war. However, the importance of these Revolution-based contacts diminished significantly as the network itself developed. Using the social network software Gephi to map and analyze nearly 20,000 commercial relationships over 15 years, this chapter reveals that Constable's network contracted and became progressively specialized and increasingly valuable as the years went on. Over time, the average value of commercial connections increased, while the network became increasingly dense and efficient. While Constable's network in the early years relied on a vast number of low-value connections, his later, denser network depended on an increasing number of "network brokers" that facilitated connectivity and network efficiency.

Chapter 5 analyzes the evolution in American business practices after the Revolution and Depression of the 1780s. Almost immediately after the Revolution, Americans began changing their business practices to capitalize on the opportunities of independence and European war. On a micro level, American merchants employed sophisticated and creative ways of circumventing trade impediments such as tax barriers or the closing of foreign ports. American merchants also expanded their information collection apparatuses to solicit, consume, and analyze vast amounts of market data. Using that information, American firms engaged in risky ventures to satisfy scarcities caused by global conflict, natural disasters, or economic mismanagement. As they did so, the American mercantile community became increasingly specialized. Commercial actors that focused on specific trades or specific markets arose, making expertise and specialized

knowledge a valuable method of risk mitigation. Merchants brought Alexander Hamilton's financial reforms to life by inventing new ways to collateralize federal debt and execute business transactions. To survive consistent economic shocks, merchants like Nicholas Brown, Levi Hollingsworth, and Robert Morris each restructured their firms, some with greater effect than others. These reforms to the American business system made it more efficient and dynamic in the face of intense global instability.

The present study illuminates American merchants' navigation of four decades of revolutionary crisis and the opportunities opened by them. As they, in the words of Adam Smith, relentlessly "trucked, bartered, and exchanged," these merchants laid the foundations of American capitalism. One shock did not create the American system as we know it. Rather, two decades of revolutionary chaos and imperial contestation created a sea of opportunities that American merchants stood willing, if not always able, to capitalize on. America's eventual economic power was not predestined, but neither was it an accident. This is the story of those who converted opportunity into economic success, and the struggles they encountered as they did so.

Chapter 1

Trade: Independence and Growth

In the months following independence, most Americans had an irrepressible optimism about their commercial prospects. Ezra Stiles, the Connecticut-born theologian and President of Yale College proclaimed that the new nation's merchants "will carry the American flag around the globe itself," gathering commercial knowledge that would then "reblaze back from america [sic] to europe, asia and africa, and illuminate the world with truth and liberty."[1] While grandiose and quixotic, Stiles's vision represented the optimism that permeated the American commercial community.

That Revolutionary optimism came to a screeching halt in late-1784. Wartime devastation to real property, mountains of debt, the cessation of French specie infusions, and an unusually harsh winter led to widespread bankruptcies on both sides of the Atlantic.[2] International commerce slowed precipitously, resulting in a collapse of customs duty revenue.[3] Importers liquidated stocks and exporters experienced massive market fluctuations. Lacking currency, wholesalers on both sides of the Atlantic stopped paying their debts and scaled back purchases. Mechanics and artisans curtailed production due to a lack of demand. By early 1785, the American economy had entered a deep, dark, and long depression that shrunk American economic output per capita by over 30 percent.[4]

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[1] Ezra Stiles, *The United States Elevated to Glory and Honor…* (New Haven, CT: 1783), 50, in Drew McCoy, *The Elusive Republic: Political Economy in Jeffersonian America* (New York: W.W. Norton & Company, 1980), 89.
[2] George William Van Cleve, *We Have Not a Government: The Articles of Confederation and the Road to the Constitution* (Chicago: The University of Chicago Press, 2017), 39-41.
[3] Robert A. East, *Business Enterprise in the American Revolutionary Era* (Gloucester, Mass.: P. Smith, 1964), 241–249; Thomas M. Doerflinger, *A Vigorous Spirit of Enterprise: Merchants and Economic Development in Revolutionary Philadelphia* (Chapel Hill: The University of North Carolina Press, 1986), 246–250.
[4] Peter H. Lindert and Jeffrey G. Williamson, "American Incomes Before and After the Revolution," *The Journal of Economic History* 73, no. 03 (September 2013): 725–65; John J. McCusker, "Estimating Early American Gross

While the American economy emerged from depression by 1788–1789, the early Republic remained a period of immense volatility and change. Geopolitical contestation brought a cascade of trade disputes, closed markets, tariff barriers, and armed conflict that halted American forays into foreign markets before they began. At home, Americans' rapidly changing ideas about trade, and political economy in general, exacerbated interstate commercial conflicts, scarce money and credit, segmented markets, and high labor costs. Even the most promising opportunities such as trade with the Far East, Latin America, and the expanding American interior featured grave uncertainty. In sum, early American merchant-entrepreneurs faced a global economic climate riven with war, economic depression, commercial volatility, and political instability. Nonetheless, amidst this chaotic atmosphere American merchants drove the new nation's economy to rampant growth in the first decades after independence.

Contrary to most of its peers across the Atlantic World, the American economy experienced significant economic expansion throughout the 1790s and early 1800s. While difficult to calculate, economic historians Peter H. Lindert and Jeffrey G. Williamson argue that the American economy reached growth levels of 1.4 to 1.6 percent per capita in the mid-1790s. John J. McCusker suggests that per capita growth reached 1.9 percent between 1793 and 1800, while Samuel Williamson estimates an even higher 2.7 percent. While 2.7 percent growth is likely too optimistic, these figures in totem represent a remarkable accomplishment in an era in which positive economic growth of any level would be judged a triumph.[5] The rapid expansion of the domestic economy in per capita and absolute terms anchored the development of raw American economic power.

Domestic Product," *Historical Methods*, Vol. 33, No. 3 (Summer 2000): 156-159; John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill: The University of North Carolina Press, 1985).

[5] Peter H. Lindert and Jeffrey G. Williamson, *Unequal Gains: American Growth and Inequality since 1700* (Princeton, NJ: Princeton University Press, 2016), 92.

While generations of historians have emphasized foreign trade as the driver of post-Revolutionary growth, it was in fact the domestic market that dominated American economic expansion in the early Republic.[6] While the Napoleonic era carrying trade and Far East "gold rush" commanded steady returns, much of the gains simply restored American foreign commerce to prewar levels. For almost the entirety of the early Republic, extensive growth in the American economy, or the absolute expansion of GDP, came from the rapidly developing domestic sector. Expansion of the domestic market arose from a combination of population growth, market integration, increased investment, entrepreneurial activity, and productivity enhancement. While scarce data prevents a sophisticated analysis of these growth drivers, the story of American economic development in the early Republic rests on an eruption of economic activity at home.

Historians have long flocked to the data-rich foreign sector, where significant collections of trade statistics made quantitative evaluation more precise and thus more attractive. However, this data bias led scholars to almost completely ignore the statistically opaque domestic

[6] Many excellent studies of the colonial prices, economic structures, growth patterns, and trade exists, including James F. Shepherd and Gary M. Walton, "Economic Change after the American Revolution: Pre- and Post-War Comparisons of Maritime Shipping and Trade," *Explorations in Economic History* 13, no. 4 (1976): 397–422; John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill: The University of North Carolina Press, 1985); James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America,* (Cambridge, UK: Cambridge University Press, 1972); Anne Bezanson, *Prices and Inflation during the American Revolution; Pennsylvania, 1770-1790,* (Philadelphia: University of Pennsylvania Press), 1951; Anne Bezanson, *Wholesale Prices in Philadelphia, 1784-1861,* (Philadelphia, 1936), http://hdl.handle.net/2027/wu.89056836109; Joshua L. Rosenbloom and Thomas Weiss, "Economic Growth in the Mid-Atlantic Region: Conjectural Estimates for 1720 to 1800," *Working Paper Series.*, no. 17215 (2011); Peter C. Mancall, Joshua L. Rosenbloom, and Thomas Weiss, "Exports and the Economic of the Lower South Region, 1720-1770," *Research in Economic History.* 25 (2008): 1–68. While some of these studies traverse the American Revolution itself, many more studies, including, Merrill Jensen, *The New Nation: A History of the United States during the Confederation, 1781-1789* (New York: Knopf, 1950); Jonathan M. Chu, *Stumbling Towards the Constitution: The Economic Consequences of Freedom in the Atlantic World* (Palgrave Macmillan, 2012); Cathy Diane Matson, "Fair Trade, Free Trade: Economic Ideas and Opportunities in Eighteenth-Century New York City Commerce" (Ph.D., Columbia University, 1985); Joseph Stancliffe Davis, *Essays in the Earlier History of American Corporations*, vol. 2, 3 vols., Harvard Economic Studies v.16 (Cambridge: Harvard University Press, 1917); Robert Bruce Bittner, "The Definition of Economic Independence and the New Nation" (Ph.D., The University of Wisconsin - Madison, 1970); Robert A. East, "The Business Entrepreneur in a Changing Colonial Economy, 1763-1795," *The Journal of Economic History* (May 1, 1946): 16–27; Gordon Carl Bjork, "Stagnation and Growth in the American Economy, 1784-1792" (Ph.D., University of Washington, 1963), focus on the post-Revolutionary period.

economy. This is a tragic blunder. While export markets provided an outlet for American products and entrepreneurial energy, a close study of the export sector reveals the importance of domestic commercial expansion to American economic development as a whole. Put simply, if American economic development rested on foreign trade, and the Napoleonic Era carrying trade in particular, the American economy would have seen negligible growth during the Federal Era.

Persistent agility in the face of politico-economic and macroeconomic volatility allowed American merchant-entrepreneurs to consistently convert opportunities for growth into realizations of it. Subsequent chapters detail the ways in which merchant-entrepreneurs across the United States adapted to and capitalized on the instability that dominated the early American economic sphere. Merchants like Levi Hollingsworth, Nicholas Brown, William Constable, and thousands of their peers absorbed shocks en masse, and demonstrated the ability to seek out new commercial partners, provide new products, and even build new markets. Of course, the story of early American economic development is not one in which newly liberated American merchants simply set out across the globe and conquered all comers. In many cases, the opposite was true—bankruptcy, commercial failure, and macroeconomic chaos dominated early American commercial life. In fact, the secret to early American economic success often came in Americans' ability to respond to and capitalize on what many commercial actors described as an almost constant state of crisis. The data presented below demonstrates that despite decades of war, depression, politico-economic instability, and macroeconomic volatility, American merchant entrepreneurs built an economic system that not only drove short term commercial growth, but also built a foundation for future economic prosperity.

Pervasive Volatility

The volatility of the post-Revolutionary era began with the tenuous relationship between citizens, commercial actors, and the state. Domestic and international political economy remained in substantial flux throughout the 1790s and early-1800s. While historians have long debated the practical stringencies of British mercantilist restrictions, postwar Americans were unprepared to operate without the commercial privileges and protections of a global economic superpower.[7] Trading relations with individual British firms resumed soon after the war, but American merchants faced imperial Britain as a commercial competitor for the first time. American traders soon found themselves locked out of British markets in the West Indies and subject to unfamiliar tariff barriers. Imperial subsidization of colonial industries like iron also disappeared. While colonial traders experienced both benefits and drawbacks as part of the British Empire, this much is clear: Americans faced an unprecedented change to their commercial environment in 1783. Amidst this rampant uncertainty, American merchants needed to adapt or forfeit the remarkable commercial opportunities of independence.

Domestic political economy remained equally volatile, if not more so. The Constitution resolved conflicts over interstate tariff barriers and revenue sources, but the prohibition against

[7] Prior to 1776, American external trade remained severely limited by the strictures of British imperial rule. An extensive historiography on British mercantilist policy needs not be reviewed here, other than to emphasize the depth to which British "Navigation Laws" constrained American exports to destinations not under British imperial control. Established by a series of legislation in 1651, 1660, and 1673, the Navigation Acts sought to wrest Atlantic commercial domination from Dutch traders, establish London as the preeminent European entrepôt, promote a system of production and supply complementarity amongst the mother country and its imperial holdings, and restrict the production of wealth—and the circulation of bullion—to the empire itself. While smuggling certainly took place, recently work by Nuala Zahedieh and Cathy D. Matson, see Nuala Zahedieh, *The Capital and the Colonies: London and the Atlantic Economy, 1660-1700* (New York: Cambridge University Press, 2010) and Cathy D. Matson, *Merchants & Empire: Trading in Colonial New York* (Baltimore: Johns Hopkins University Press, 1998), suggests that elicit trade comprised a far smaller percentage of the colonial import/export sector than scholars have previously thought. The Navigation Laws perpetuated the mercantilist vision by requiring that British subjects own or build ships trading within the empire. Even more important, the Acts created a list of "enumerated goods," including major staples such as tobacco, sugar, indigo, rice, naval stores, and furs, which parliament required to be shipped through London before continuing to their final destination. In effect, the Navigation Laws drew such an ambitious trade cordon around the British economic empire that historian Lawrence A. Harper, *The English Navigation Laws: A Seventeenth-Century Experiment in Social Engineering* (New York: Columbia University Press, 1939), v, called it, "the most famous English…experiment in social engineering" in history.

state issued currency resulted in widespread exchange rate problems and monetary scarcity. Even during the bumper economic growth of the mid-1790s, merchants constantly complained about a lack of money and turbulent market conditions. While Hamiltonian financial reforms rectified the national fiscal crisis, American merchants continued to face widespread economic volatility on the international, state, and local level.

After two decades of economic turmoil and political revolution, Americans remained conflicted about how they should structure their politico-economic systems. Emerging from two centuries of British mercantilist control and flush with enlightenment ideas of natural liberty, newly independent American merchants rejoiced at the prospect of open ports across the globe. Many Americans emerged from the Revolution with a predilection for Smithian free trade, a philosophy they viewed as commensurate with the democratic ideas of the Revolution. Merchants like Jeremiah Wadsworth of Hartford envisioned an economic system in which primary producers exported the fruit of America's natural resources to newly-opened markets while importers like himself supplied increasingly wealthy Americans with manufactured goods from Europe.[8] The Depression of the 1780s shattered Americans' belief in natural market equilibria and led them to demand tariff protection from foreign competition. Further politico-economic conflict over the role of industry and agriculture only added to the tumult. Nonetheless, American merchants relished the opportunity to send their produce to new markets across the world.[9]

[8] John David Ronalds Platt, "Jeremiah Wadsworth, Federalist Entrepreneur" (Ph.D. Dissertation, Columbia University, 1955), 46–60.
[9] Robert Bruce Bittner, "The Definition of Economic Independence and the New Nation" (Ph.D., The University of Wisconsin - Madison, 1970), 10; Lawrence A. Peskin, *Manufacturing Revolution: The Intellectual Origins of Early American Industry* (Baltimore, Md.: Johns Hopkins University Press, 2003), 69–71.

The basket of goods leaving American shores for foreign markets revealed nearly as much change as the macroeconomic situation itself. The years from 1792 to 1807 saw the continued decline of tobacco and the rise of cotton as America's staple crop. Yet while a baseline staple remained important to the American export basket, the goods around it demonstrated marked change. Americans slowed their production and exportation of raw agricultural goods like wheat, indian corn, indigo, rice, and flaxseed, while accelerating their trade in semi-processed commodities like flour, pine boards, beef, and pork. The rise of these semi-processed goods show a transition in which American producers captured and retained a significant share of value added that British firms previously controlled. Increased investment in small-scale manufactories like grist mills and distilleries raised productivity and fueled intensive growth in both the burgeoning domestic economy and foreign export sector.

The market environment in which Americans traded their produce remained equally volatile. The Napoleonic era fostered rapid changes in market access, both in Europe and amongst its colonies throughout the Atlantic world. In many cases, the vagaries of imperial contestation resulted in conflicting incentive structures—the need for American raw materials and foodstuffs resulted in high prices but the threat from combat and navies, privateers, and pirates forced Americans to constantly change how they valued markets. Independence from Great Britain opened Americans to trade with foreign ports like Amsterdam and Rotterdam, St. Petersburg, Hamburg and Bremen, and Cadiz that had previously been closed to them. However, shifting battle lines shut many of the ports in rapid succession with little warning. Similar contestation affected access to West Indian ports. Distant markets in China, India, Brazil, Honduras, and the Rio de la Plata offered opportunities for bilateral trade, but the inherent risk of long-distance commerce caused problems of their own. Rapidly changing market conditions,

asymmetric information, and volatile price regimes made long-distance trade an interesting, if relatively insignificant, anecdote to early American economic development.

Trade Across the Globe

In searching for the foundations of early American economic development, scholars have repeatedly turned to foreign trade, especially that which arose during the Napoleonic Wars. While, as demonstrated below, the American domestic market drove economic growth in the early Republic, the resurrection of American external trade after the Revolution remains a relevant and important topic of examination. Douglass C. North showed that the United States experienced "a five-fold increase in the value of exports and in net earnings from the carrying trade" between 1793 and 1801, most of which came from re-exports.[10] Prominent scholars including Gary M. Walton and James F. Shepherd, Stuart Bruchey, Gordon Bjork, and North have all posited a development model in which "the economic success of the nineteenth century actually stemmed from…a foreign war [that] opened up exceptional trade opportunities [and American] merchants stood ready and able to provide the ships, physical installations and know-how to permit the new nation to seize its advantage."[11] While much of the 1790s foreign trade boom simply returned American trade to a pre-war growth path, the export sector provided revenue streams for merchants recovering from nearly two decades of economic depression.

The ability of American merchants to reconstruct a thriving export industry amid the politico-economic and macroeconomic tumult of the late 18th-century deserves consideration. As noted above, scholars have long understood the broad structure of the late-eighteenth century

[10] Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 25.
[11] James F. Shepherd and Gary M. Walton, *The Economic Rise of Early America* (Cambridge: Cambridge University Press, 1979), 3.

trade boom. This section aims to not simply revisit the classic carrying trade thesis, but to deconstruct it; to understand what that trade looked like in practice.[12] In the foreign sector at least, Americans did not have the financial or political clout to become market makers—they adjusted to macroeconomic forces as they came. In other words, this section examines the volatile commercial world in which early American merchants operated, and isolates where those American entrepreneurs traded, what they traded, and how they created a commercial system that adapted to, and capitalized on, the volatile Napoleonic age.

The stark decline of America's export relationship with the British Empire between 1772 and 1806 solidified the Revolutionary rupture between the new nation and its former imperial master. While Britain recaptured a portion of its pre-war trade soon after the Revolution (31 percent by 1790-1792), its share of American exports declined to just 19 percent in 1804-1806 (see Table 1.1). Yet a comparison of 1804-1806 data with pre-Revolutionary figures only underscores the broadening of post-Revolutionary Americans' commercial reach. Between 1768 and 1772, Great Britain, Ireland, and the British West Indies accounted for 85 percent of

[12] The quantitative analysis of the American export sector set forth in this chapter relies on the work of economic historians James F. Shepherd and Gary M. Walton, James F. Shepherd and Gary M. Walton, "Economic Change after the American Revolution: Pre- and Post-War Comparisons of Maritime Shipping and Trade," *Explorations in Economic History* 13, no. 4 (1976): 397–422." Shepherd and Walton compared two periods on each side of the Revolution—1768-1772 and 1790-1792—providing economic analysis that includes the often-disregarded 1780s. Unfortunately, Shepherd and Walton only carried their analysis to the beginning of the Federal era. Shepherd and Walton likely ended their study in 1792 because US Treasury records, presented in *American State Papers: Documents, Legislative and Executive, of the Congress of the United States* (Washington: 1832), stopped presenting export values along with quantities after Hamilton left the Treasury. I have recreated these values and present my findings in the subsequent pages, but doing so was exceedingly difficult.

This chapter extends their model to 1804-1806 by creating a methodologically identical model of American shipping and trade while adding significant geographic analysis to Shepherd and Walton's coverage of the 1790-1792 period. My method close follows Shepherd and Walton's model with two exceptions. First, I developed my own deflator, using a Fisher average instead of the Paasche index implied in Shepherd and Walton's work. This different caused slight variances in deflated values for 1804-1806 compared to their calculations for 1790-1792. Second, I made several additions and subtractions to the commodity basket used by Shepherd and Walton to better reflect the changing economy (most importantly, I added sugar and coffee to the 1804-1806 basket). These changes, however, are clearly noted. Analysis of three snapshots of the pre-Revolutionary, early Federal, and pre-embargo periods provides a far-reaching view of American trade during the Revolutionary Era and how it changed over time.

American exports. By 1806, the British Empire's share of the American export basket fell to 27 percent, a nearly 70 percent decline. While American merchants still relied on British firms for a plurality of their imports, the collapse of British monopoly power of American exports suggests that America had indeed broken out of the British imperial system by the first years of the nineteenth century.

Table 1.1: Average Annual Exports to Overseas Areas--The 13 Colonies, 1768-1772, the United States, 1790-1792, and the US, 1804-1806 (Thousands of Pounds Sterling; 1768-1772 prices)[a]

Destination[b]	1768-1772	Percentage of Total	1790-1792	Percentage of Total	1804-1806[c]	Percentage of Total
GB and Ireland	1616	58	1234	31	2211	19
Northern EU			643	16	3628	31
Southern EU	406	14	557	14	1356	12
UK WI	759	27	402	10	932	8
Foreign WI			956	24	2588	22
Africa	21	1	42	1	202	2
Canadian Colonies			60	2	185	2
Other			59	1	601	5
Total	2802	100	3953	100	11703	100

Source: Average annual exports for 1768-1772 and 1790-1792 are taken from James F. Shepherd and Gary M. Walton, "Economic Change after the American Revolution: Pre- and Post-War Comparisons of Maritime Shipping and Trade," Explorations in Economic History 13, no. 4 (1976): 406; Average annual exports and price data for 1804-1806 from *U.S.A.S.P.* (1832), Anne Bezanson, *Wholesale Prices in Philadelphia, 1784-1861* , (Philadelphia, 1936), 102-267, and *The Gazette of the United States* , January 1804-December 1806.

[a] Walton and Shepherd converted the values for 1790-1792 into 1768-1772 pounds sterling on the basis of a Paasche price index value of 4.924 based on the real values of the commodity exports for 1790-1792 in TABLE 2. This value includes the exchange rate and changes to the general price level. For numerous reasons, I calculated my values for 1804-1806 based on a Fisher average of 6.011. See TABLE 1.2, note e, for details on the construction of this index.

[b] Northern Europe includes continental Europe countries north of Cape Finisterre, including Russia, Prussia, Sweden, Denmark and Norway, the Netherlands, Hansiatic Hamburg and Bremen, and France. Southern Europe includes Spain, the Canary Islands, Portugal, Madiera, the Azores, the Cape Verde Islands, Gibraltar, Italy, Malta, and other Mediterranean ports in Europe (except French ports). The Foreign West Indies includes the Swedish, Danish, Dutch, French, and Spanish Caribbean colonies. Africa includes Morocco, the west coast of Africa (including French and British colonial ports), Bourbon and Mauritius, and the Cape of Good Hope. The Canadian colonies include the British American colonies (including Newfoundland and the British fisheries), St. Pierre, Miquelon, and the French fisheries. Other destinations include the East Indies, the northwest coast of America, Florida and Louisiana, the coast of Brazil, Turkey and the Levant, the South Seas, Spanish Honduras, China, and Trieste.

[c] I calculated the average annual export values for 1804-1806 by multiplying the annual quanties set forth in *U.S.A.S.P.* by a 12-month average of Philadelphia wholesale prices found in Bezanson, *Wholesale Prices in Philadelphia, 1784-1861,* combined with a yearly average of weekly market price quotes from Philadelphia's *The Gazette of the United States* , January 1804-1806. See TABLE 1.2 notes for details on the construction of this price series.

British command over American exports may have been even smaller than its plurality share suggests. As shown in Table 1.2, tobacco dominated colonial exports to the British metropole in 1768-1772 (31 percent of total exports). However, other staple crops including rice (12.6 percent of total exports), indigo (4.6 percent), wheat (4.7 percent), and other raw commodities buttressed tobacco's dominance and diversified American commercial relationships with British importers. However, by the second half of the eighteenth century, European demand for American tobacco stagnated and prices began to fall.[13] By 1804-1806, the "noxious weed" declined as a share of the American export basket to just 16.9 percent. While cotton supplanted tobacco as the United States's primary staple crop by 1804-1806 (22.7 percent), the exportation of second-tier staples like rice (7.8 percent) and indigo (0.2 percent) collapsed.[14]

Not only did rice and indigo fall in terms of their percentage of the American export basket, their absolute exportation fell as well. In 1804-1806, rice exports fell to an average of 90,610 barrels from 140,254 barrels produced in 1768-1772. While the aggregate value of rice crept up from £311,000 to £370,000 (1768-1772 current GBP), indigo faced a different fate. Not only did total indigo exports collapse from an average of 547,649 pounds in 1768-1772 to a mere 74,877 pounds in 1804-1806, the value of those exports fell from £113,000 to £18,000. In short, second-tier staples' total export value collapsed after independence, not simply their percentage share of the export basket. As a result, southern planters became even more reliant on their primary staple crops, such as cotton.

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[13] Craig Muldrew, "Atlantic World 1760-1820," in Nicholas Canny and Philip Morgan, *The Oxford Handbook of the Atlantic World: 1450-1850* (Oxford: Oxford University Press, 2011); Michael Jarvis, *In the Eye of All Trade: Bermuda, Bermudians, and the Maritime Atlantic World, 1680-1783* (Chapel Hill: the University of North Carolina Press, 2010), 105-110.

[14] It is possible that changes in the export basket, discussed in footnote b of Table 2, make the declines of rice and indigo less significant than they appear. However, considering most of the large additions to American exports in the Federal era came via the re-export/carrying trade, which was based in northern ports, that the South did indeed become even more reliant on a single cash crop during the 1790s.

Table 1.2: Annual Average Exports of Selected Commodities from the 13 Colonies, 1768-1772, and the United States, 1790-1792 and 1804-1806

	Thirteen Colonies, 1768-1772[a] (1)				The United States, 1790-1792 (2)				The United States, 1804-1806[b] (3)				
Commodity[c]	Quantity	Value (Thousands of Current £)	Value (Thousands of 1790-1792 $)	% Total Value	Quantity	Value (Thousands of Current $)	Value (Thousands of 1768-1772 £)	% Total Value	Quantity[d]	Value (Thousands of Current $)	Value (Thousands of 1768-1772 £)[e]	Value (Thousands of 1790-1792 $)[f]	% Total Value
Beef	26,036 bbl	51	209	2.1%	60,457 bbl	367	159	2.2%	122,616 bbl	1775	332[g]	1390	4.8%
Pork	bbl			0.0%	29,741 bbl	285		1.7%	55,976 bbl	1046	189[h]	819	2.8%
Bread	38,634 tons	410	2534	16.6%	3,823 tons	221	712	1.3%	4,269 tons	335	56	262	0.9%
Flour				0.0%	63,256 tons	4178	888[i]	25.0%	69,119[j] tons	6320	1051	4935	17.0%
Cotton	29,425 lbs	1	7	0.0%	163,822 lbs	41	8	0.2%	36,360,575[k] lbs	8454	1407	6618	22.7%
Fish, dried[k]	308,993 quintals	154	740	6.2%	375,619 quintals	900	187	5.4%	539,944 quintals	2636	439	2064	7.1%
Flaxseed	233,065 bu	42	189	1.7%	352,079 bu	286	64	1.7%	271,275 bu	427	71	334	1.1%
Indian Corn[l]	839,314 bu	83	424	3.4%	1,926,784 bu	974	191	5.8%	1,290,212 bu	1307	217	1023	3.5%
Rice	140,254 bbl	311	1971	12.6%	129,367 bbl	1818	287	10.9%	90,610 bbl	2887	370	1741	7.8%
Wheat	599,127 bu	115	654	4.7%	998,862 bu	1090	192	6.5%	77,283[m] bu	109	18	86	0.3%
Indigo[n]	547,649 lbs	113	567	4.6%	493,760 lbs	511	101	3.1%	74,877 lbs	93	18	73	0.2%
Iron, Bar	2,416 tons	36	195	1.5%	300 tons	24	4	0.1%	379 tons	38	16	30	0.1%
Iron, Pig	4,468 tons	22	116	0.9%	3,667 tons	95	18	0.6%	299 tons	9	2	7	0.0%
Cattle	3,443 No.	21	63	0.8%	4,861 No.	89	29	0.5%	6,406 No.	[o]			
Horses	6,048 No.	60	240	2.4%	7,086 No.	282	71	1.7%	4,788 No.	[o]			
Pitch	11,384 bbl	5	21	0.2%	7,279 bbl	13	3	0.1%	9,383 bbl	36	6	29	0.1%
Tar	90,472 bbl	34	135	1.4%	68,463 bbl	102	25	0.6%	64,550 bbl	174	29	136	0.5%
Turpentine	19,870 bbl	9	42	0.4%	51,194 bbl	108	24	0.6%	82,733 bbl	280	47	219	0.8%
Oil, whale	3,841 tons	46	212	1.9%	1,826 tons	101	22	0.6%	2,776 tons	344	57	269	0.9%
Potash	1,381 tons	35	134	1.4%	4,872 tons	472	123	2.8%	3,861 tons	534	89	418	1.4%
Rum, American	342,366 gal	22	132	0.9%	441,782 gal	170	28	1.0%	[p]				
Tobacco[q]	87,986 hhd	766	3093	31.0%	110,687 hhd	3891	964	23.3%	79,260 hhd	6305	1049	4935	16.9%
Pine Boards	38,991 M ft	70	228	2.8%	45,118 M ft	264	81	1.6%	85,629 M ft	1767	294	1384	4.7%
Staves and Headings[r]	21,585 M	65	275	2.6%	31,554 M	401	95	2.4%	40,433 M	2374	395	1858	6.4%
Coffee[s]									48,312,713 lbs	15155	2521	11863	19.8%[t]
Sugar[s]									75,096,401 lbs	25202	4193	19728	32.9%[t]
	Total Value	2471	11878	100	Total Value	16683	4276	100	Total Value	37250	6078	28319	100

Sources: Shepherd and Walton, "Economic Change after the American Revolution," 408-410; *U.S.A.S.P.* (1832), 590-694; Bezanson, *Wholesale Prices in Philadelphia, 1784-1861* , 102-267; Susan B. Carter, ed., *Historical Statistics of the United States: Earliest Times to the Present: Millennial Edition* (Cambridge: Cambridge U.P., 2006), Section Z; and Timothy Pitkin, *A Statistical View of the Commerce of the United States* (New York: Augustus M. Kelley, 1967), 108–109.

[a] The data for section 1, Thirteen Colonies, 1768-1772, and section 2, The United States, 1790-1792, come from Shepherd and Walton, "Economic Change after the American Revolution," 408-410, except for the "% Total Value" columns and the deflated value for Flour in section 2, which were calculated by the author. See footnote i for detail on the creation of this figure.

[b] Section 3, The United States, 1804-1806, features the same basket of commodities as sections 1 and 2 as established by Shepherd and Walton for the purpose of easy comparison. Nonetheless, this methodolgy poses several particular problems. First and foremost, th basket of commodities does not reflect how the export structure changed over the three periods. In an effort to demonstrate the importance of considering export market changes, the author has included figures for Sugar and Coffee, both of which comprised a s portion of the export basket in 1804-1806 but were not included in Shepherd and Walton's model. See footnotes s and t for details on the importance of these commodities and their place in this table. Secondly, the paucity of records made it rapidly appearen and Walton did not extend their analysis into the nineteenth century. Section 1 is derived from a uniquely detailed series of British colonial port records upon which Shepherd and Walton anchored their excellent book *Shipping, Maritime Trade, and the Economic Development of Colonial North America* (1972). Likewise, the statistics from Section 2 are derived from uniquely complete Treasury Department records from *U.S.A.S.P.* (1832) that that contained both quantities *and* values of American exports. Unfortunately, record keeping became increasingly haphazard after Alexander Hamilton's departure from the Treasury. By 1804, most export records contained quantities but no values, leaving the author to reconstruct price series' of these goods from scratch. In most cases, the author uses Philade proxy for the United States to preserve consistency, though he is aware that Philadelphia prices are not necessarily representative of the nation as a whole. In most cases, the author used wholesale prices derived from Bezanson and other sources. However, num circumstances (noted below) required an alternative price source. In these cases, the author created price series' of Philadelphia market prices, derived largely from newspaper price currents and auction reports.

[c] Various sources listed four commodities (Bread, Flour, Whale Oil, and Rice) in different units than those used by Shepherd and Walton. Therefore, the author used the following ratios to convert extraneous source units to those used by Shepherd and Walton for purposed of comparison. These ratios come from Shepherd and Walton and Arthur H. Cole, *Wholesale Commodity Prices in the United States, 1700-1861* (Cambridge, Mass.: Harvard University, 1938), x-xii, and Bureau of the Census, "Historical Statistics of the United States, Colonial Times to 1970: Part 1" (United States Department of Commerce, September 1975), 1163.

Commoditiy	Conversion Equivalencies
Bread	1 bbl = 5 kegs = 100 lbs
Flour	1 bbl = 196 lbs = .114285714 tons
Whale Oil	252 gal = 1 ton
Rice	1 tierce = 600 lbs = 1.1429 barrels

Table 1.2 Continued Below...

[d] Sources of quantities for Section 3 did not always clearly define the good it listed. For example, sometimes the sources would simply list "bread," while other times it would list "ship bread and biscuit." In these cases, and because Shepherd and Walton never they meant by bread, the author always reverted to the lowest common denominator in the listings--i.e. if one year listed "ship bread and buscuit" the author considered all three listings "ship bread and biscuit" and used that equivalent price to calculate could cause theoretically result in moderate divergences with Sections 1 and 2, but such divergences can not be avoided.

[e] Walton and Shepherd converted the values for 1790-1792 into 1768-1772 pounds sterling by creating a Paascue price index value of 4.924 based on the real values of the commodity exports for 1790-1792 in TABLE 2. This Paasche index value considers the exchang and changes in the general price level. To acheive a more even evaluation of long-term price changes and compensate for missing data, the author calculated and used a Fisher average index values for 1804-1806 of 6.011 to deflate 1804-1806 price levels to 17 sterling. A primary reason for the discrepancy between the two deflators is missing data, most incompatible data for flour, pork, rum, horses, and cattle.

[f] The Fisher price index used to deflate Section 3 to 1790-1792 prices is the same as discussed above except it does not compensate for exchange rate.

[g] Weights and measure changed significantly during the early Republic. Barrels of beef weighed approximately 225 lbs before 1789 and approximately 200 lbs after. Thus, the author made an adjustment of +.125 when deflating 1804-1806 values back to 1768-1772 p sterling.

[h] The author made a similar adjustment to that discussed in the previous note (note g), only changing the adjustment to +.085 as barrels of pork weighed an approximate 617 lbs before 1789.

[i] Shepherd and Walton failed to give a deflated value for 1790-1792 flour in 1768-1772 pounds sterling, likely because they do not have data on flour for Section 1. The authour has filled this gap by multiplying Shepherd and Walton's four digit 1790-1792 curr .212531145013805 stipulated by his existing Fisher index deflator. This method is very imprecise for many reasons, not the least being that Shepherd and Walton's figure is given in thoundsands of dollars. The figure given above is simply meant to give reade of the deflated value.

[j] Americans exported numerous types of flour to overseas markets. While it is impossible to calculate the exact mix of common and superfine flour shipped to overseas markets, the author has estimated a simplified mix of 75% common flour and 25% superfine flou weighted his calculations accordingly, but readers should consider the implications of even slight changes to this mix. With superfine averaging $8.52 and common $7.84 for 1804-1806, even a slight change to the ratio could yield significant changes to the to flour exports.

[k] Like flour, American cotton exports sent various types of their product to overseas markets. The author has estimated a ratio of 90% less-valuable Upland cotton and 10% Sea Island cotton, though the 10% dedicated to Sea Island cotton is most likely high.

[l] The author has calcuated this value based on a self-constructed price series of weekly Philadelphia market prices which means that this current valuation is likely high. While wholesale prices would be closer to the actual export value of indian corn, no co reliable sources could be found.

[m] The period of 1804-1806 saw near-record low wheat exports, largely do to consecutive years of drought and devastating floods (see Brooke Hunter, “Rage for Grain: Flour Milling in the Mid -Atlantic, 1750–1815” (Ph.D., University of Delaware, 2002), 236–237.) 180 exceptional regression with its 18,041 exported bushels approaching the worst years of the Hessian Fly crisis of the mid-1790s. Thus, 1804-1806 gives a poor representation of the importance of wheat exports to the early-19th century American economy. For exa substituted 1801-1803 figures for 1804-1806, wheat exports would have averaged 402,208 bushels compared to 77,283 and produced $553,447.97 compared to $109,231.50 in 1804-1806.

[n] The author has calcuated this value based on a self-constructed price series of weekly Philadelphia market prices. While wholesale prices would be closer to the actual export value of domestic indigo, existing wholesale series only contained listings for Fr author found to little data on American indigo to successfully deduce a relationship between the two goods.

[o] No reliable market or wholesale price series for horses and cattle could be found for 1804-1806. While numerous random listings appear in newspapers and price currents, the data is insufficient to formulate a consistent price series.

[p] No reliable statistics for the quantity of American Rum exported for 1804-1806 could be found.

[q] The prices used to calculate 1804-1806 export values come from Pitkin's *A Statistical View of the Commerce of the United States* . Pitkin lists a hogshead of tobacco at $72 for 1804, $89 for 1805, and $79 for 1806, though he does not note the type or region associated with these quotes.

[r] The author has calcuated this value based on a self-constructed price series of weekly Philadelphia market prices. While wholesale prices would be closer to the actual export value of staves and headings, existing wholesale series only contained listings f

[s] As discussed in note b, keeping the basket of export goods consistent for the sake of comparison does not represent the reality of the change post-Independence economy. The ability of Americans to serve as a shipping intermediary for foreign goods, combined opportunity of Napoleonic conflict, led to a boom in the American economy. This "carrying trade" capture a large share of economic growth in the 1790s and early 1800s as American merchant seamen "re-exported" goods from the foreign West Indies and Latin Ame amongst these goods were coffee from central America and Brazil and Sugar from the West Indies. While this sector was not a driver of long-term growth, providing luxury consumables to nations whose merchant marine were either impressed for military service deliver their goods due to blockade proved very profitable for the neutral Americans.

[t] While the author does not include the current values of coffee and sugar to the "total values" of Section 3, these percentages assume the inclusion of coffee and sugar in the general export basket (but do not impact the other listed commodity values).

Meanwhile, investment during the 1780s in small-scale manufactories like grist mills, distilleries, paper mills, and potteries surged in the mid-Atlantic states and New England.[15] In just one example, the number of new paper mills in the United States grew by 82 percent between 1776 and 1790 (see Table 1.3).[16] While the United States did not yet embrace British-style mechanized industrialization, the transition from raw commodity exports to processed good exports allowed American producers to capture a new sliver of value-added revenue that British importers previously commanded. Increased investment and the resultant productivity enhancement made American semi-processed goods like flour even more competitive abroad, while falling prices and increasing quality of domestic liquor, paper, and earthenware contributed to the rapidly expanding domestic market.[17] Substantial linkage effects in the staple export market formed as they had in the colonial tobacco economy. However, the rise of cotton, decline of secondary staple crops, and increase in domestic capital investment resulted in an intensified and isolated export link between Great Britain and rural states that lacked decisive political power.

[15] Finding a comprehensive measurement for investment for an era in which most firms and individuals did not measure investment in modern terms remains exceedingly difficult. Further research on this subject is moving forward. However, qualitative analysis suggests a significant upturn in capital investment after the Revolution. For more detail on this see Chapter 2, pp. 32-33; Forrest McDonald, *Alexander Hamilton, A Biography* (New York: W.W. Norton, 1979), 173.

[16] William H. Bedford, Lester J. Cappon, et al., "Economic Activity," in Lester J. Cappon, Barbara Bartz Petchenik, and John Hamilton Long, editors, *Atlas of Early American History: The Revolutionary Era, 1760–1790* (Princeton: Princeton University Press, 1976), pp. 26–30, 103–7; Assuming few if any opened during the Revolution itself—non-essential small business starts virtually stopped during the war—this represents a remarkable expansion during the depression-plagued 1780s.

[17] Even George Washington employed strategic capital upgrades to increase output at his grist mill. While Washington began milling corn and wheat for domestic use in 1771, America's first president invested over $300 to license and implement Oliver Evans's milling system on the banks of Dogue Run not far from his Mount Vernon plantation in 1791 and 1792. Evans's patented system automated most of the milling process and increased capacity for superfine flour production. By 1797, Washington had doubled his output to more than 275,000 pounds of flour and increased his overall profits to nearly $500. In sum, the opening of new markets, both domestic and foreign, incentivized the productivity-enhancing investment that drove American producers to higher value added, semi-processed agricultural commodities.

Table 1.3: Business establishments, by region and type of establishment: 1760-1790

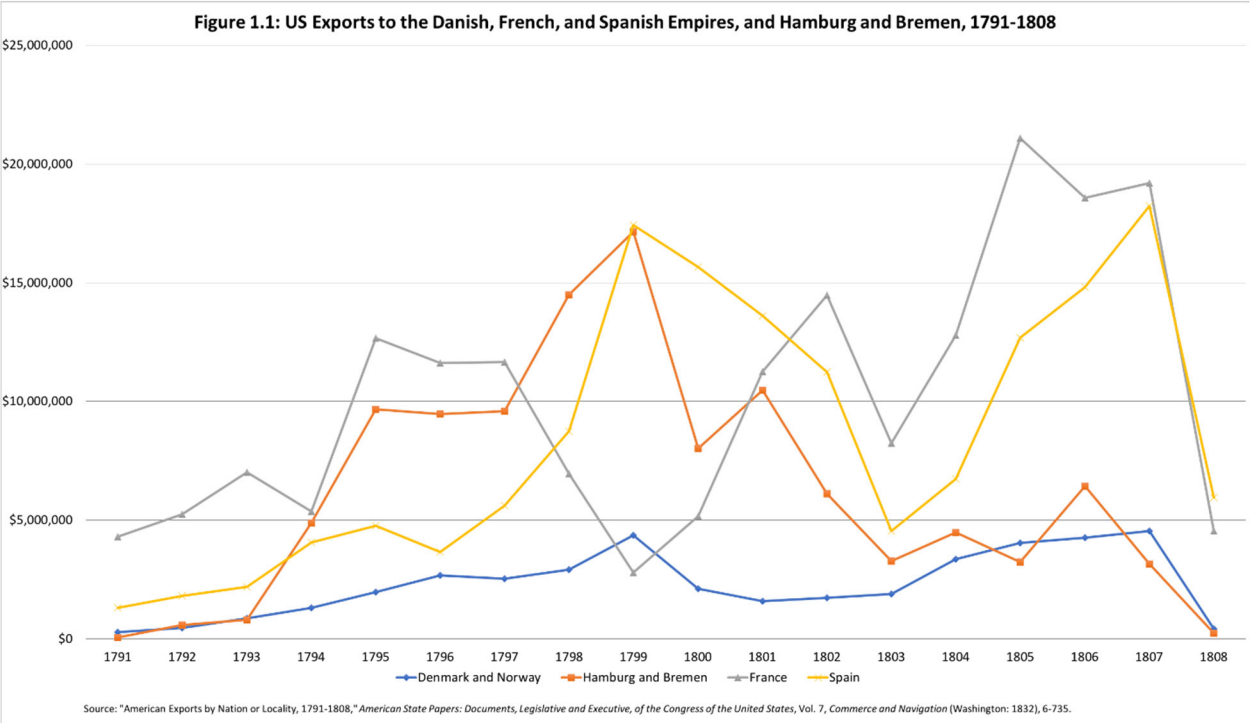
Region	Potteries		Paper mills		Ironworks	
	1760-1775	1776-1790	1760-1775	1776-1790	1760-1775	Ca. 1790
Total	36	60	34	62	168	130
New England	12	25	10	19	13	15
Middle Atlantic	19	29	22	40	113	84
Upper South	0	3	2	2	38	28
Lower South	5	3	0	1	4	3

Source: Table Eg404-419, *Historical Statistics of the United States* , Millennial Edition Online.

Coinciding with the decline of Great Britain in the American export trade, Americans leapt into markets in Europe, and Northern Europe in particular. Rising from virtually zero in 1768-1772, American trade with Northern European nations like France, the Netherlands, Sweden, Russia, and the Baltic states rose to 16 percent in 1790-1792. Over the subsequent decade exports nearly doubled again to approximately 31 percent in 1804-1806 (see Table 1). While many Americans expected Revolutionary ties to anchor extensive commercial bonds with France, American merchants constantly filled commercial vacuums in Northern Europe made by the geopolitical and macroeconomic volatility of the Napoleonic era. With scant financial leverage and a federal government only concerned with rectifying economic and political issues at home, American merchants repeatedly adapted to invasions, embargos, economic collapses, and plagues as they unfolded. In so doing, American merchant-entrepreneurs expanded their commercial power by sending rapidly increasing quantities of, sugar, flour, coffee, and cotton to markets in France, the Netherlands, and for a time, Hamburg and Bremen.

As the French Revolutionary Wars rocked European commercial centers like Le Havre and Amsterdam, American traders sought new entrepôts and sources of capital. With Europe aching for American commodities but traditional trade centers closed or increasingly dangerous, the Hanseatic ports of Hamburg and Bremen became a vital entrepôt for American goods throughout the 1790s and early 1800s. The trade between Hamburg and Bremen and the United

States consisted largely of American merchants sending coffee, sugar, and tobacco in return for German linen and other manufactured goods.[18] Assuming American merchants could secure financing and insurance at a reasonable price, American Consul in Bremen Friedrich Wichelshausen claimed that Americans could expect profits of 30-40 percent.[19]



Amidst European market volatility, American merchants embraced commercial risk while hedging against the vagaries of the Napoleonic Era. Despite frequent trade disruptions, Americans like Robert Oliver of Baltimore and the Clifford Brothers and Stephen Girard of Philadelphia consistently won large supply contracts. In formulating strategic operations, Oliver, the Cliffords, and Girard saw Hamburg and Bremen as insurance against possible disruptions in France and the Netherlands, two European markets that looked increasingly unstable as the 1790s progressed. While most Americans "considered German trade as a useful adjunct to their

[18] *U.S.A.S.P.*, 322-693.
[19] Sam A. Mustafa, *Merchants and Migrations: Germans and Americans in Connection, 1776-1835* (Burlington, Vt., USA: Ashgate, 2001), 38.

existing commerce with Britain, Holland, France, or other places," many established a foothold in Hamburg and Bremen to provide maximum flexibility should instability erupt on the continent.[20]

As shown in Figure 1.1, American trade with Hamburg and Bremen boomed between 1793 and 1795. American merchants began moving operations to the Hanseatic ports in response to the outbreak of the French Revolution. Baltimore merchant John Smith built a considerable business shipping American agricultural goods to France in return for Bordeaux and Burgundy wine, but, according to historian Sam A. Mustafa, "Smith began considering alternate and less dangerous markets by 1794." The French occupation of Amsterdam on January 20, 1795 forced American shippers out of the Netherlands and "British blockades and French privateers drove Smith to [move the bulk of his business to] Bremen."[21] While ethnic bonds gave firms in heavily German-American cities like Baltimore and Philadelphia an upper hand in Hamburg and Bremen, the liberal, America-friendly mentality of the Hanseatic ports provided opportunities to Americans of every background.

American commercial dexterity allowed for a constant flow of agricultural goods to Europe and steady stream of profits back to the United States. Figure 1.1 displays the distinct inverse relationship between trade with France and the Hanseatic ports.[22] As revolutionary instability shuttered French markets and the naval war with Britain accelerated, France became virtually inaccessible for American goods. Rather than forgo the European market or wait for the storm to pass in France, Americans transferred their business to Hamburg and Bremen. Business between the United States and the Hanseatic ports became so robust in 1798 that Bremeners

[20] Ibid., 106.
[21] Ibid., 121.
[22] Figure 1.1 also shows a dramatic increase in trade with Spain. However, as will be discuss later, the vast majority of this trade was with the Spanish West Indies, not the continental motherland.

proposed a commercial bank (Handelsbank) that would directly finance American trade while improving local access to liquid capital. “The trade in this city continues as extensive as ever,” US Consul to Hamburg Samuel Williams wrote in July 1797, “and the imports from America meet a ready and advantageous Fate.”[23] Commerce expanded at such a robust rate in the last years of the eighteenth century that the United States ran a $52 million trade surplus with German states during that period.[24]

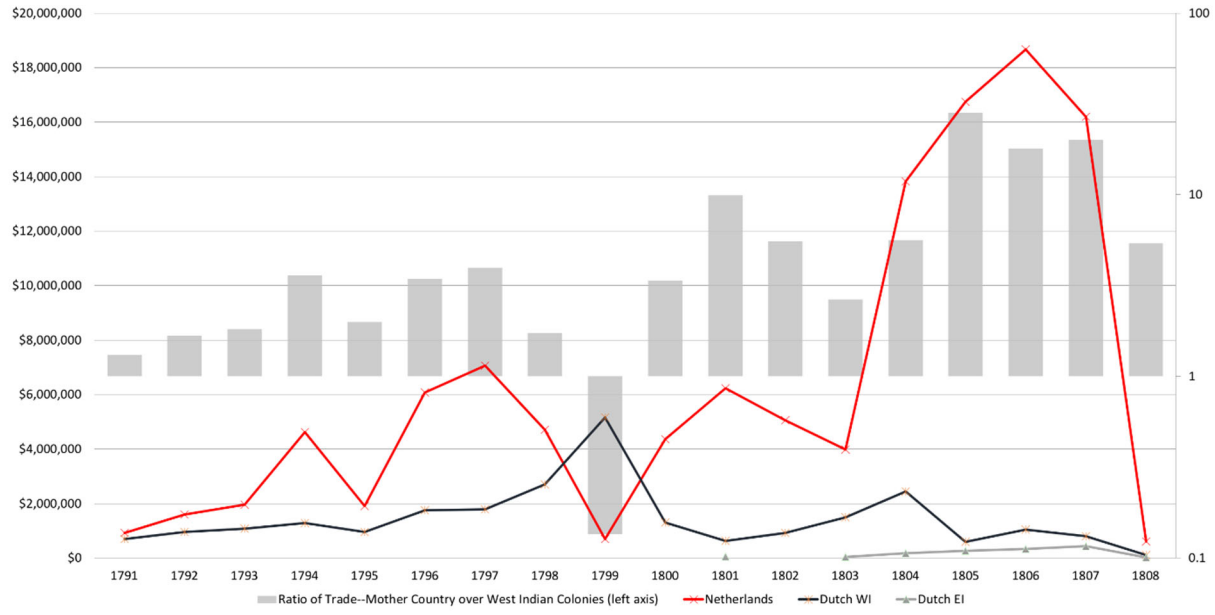
Just as military and political crises across Europe paved the way for American expansion into the Hanseatic ports, financial crisis in Hamburg and Bremen forced it out. The rapid expansion overextended poorly-capitalized “speculators, lenders, merchants, shippers and insurers,” resulting in an all-out collapse in the summer of 1799. By the end of the year, at least 152 Hamburg firms had gone into bankruptcy.[25] The downfall of Hanseatic import firms, combined with the declining prices associated with a lack of credit and over saturated markets, resulted in a dramatic decline in demand for American goods. Under the dictatorial rule of Napoleon, France made peace with Austria and Russia in the fall of 1801, bringing relative stability to the continent. With much of western Europe open for business and the Hanseatic ports mired in economic crisis, American merchants again shifted their focus to non-Germanic firms and consumers.

While wartime disruptions forced American merchants to relocate to, and build fortunes in, Hamburg and Bremen, they also worked hard to maintain their relationships with Dutch houses. As shown in Figure 1.2, American exports to the Dutch West Indian colonies like Curacao and Aruba remained low throughout the 1790s due to their lack of cash crop production.

[23] Samuel Williamson to Timothy Pickering, 27 July 1797, in Mustafa, *Merchants and Migrations*, 134.
[24] Mustafa, *Merchants and Migrations*, 130.
[25] Mary Lindemann, *Patriots and Paupers: Hamburg, 1712-1830* (New York: Oxford University Press, 1990), 177–79.

However, as the specter of invasion descended on Holland, Americans rerouted much of the trade destined for the Netherlands to Dutch holdings in the Caribbean. While this subject merits further research, the inverse relationship between Dutch mainland and West Indian trade suggests that Americans actively shifted the locus of their trade in reaction to changing geopolitical circumstances. In other words, Americans transferred, rather than abandoned, their Dutch commercial links after the Anglo-Russian invasion of North Holland in 1799. Dexterity in the face of macroeconomic volatility served Americans well. After a cessation of conflict and a Hanseatic financial crisis brought Americans back to Holland, trade with the Netherlands reached nearly $20 million in 1806, outpacing every European market including Great Britain.

Figure 1.2: US Exports to the Netherlands and its Colonies, 1791-1808

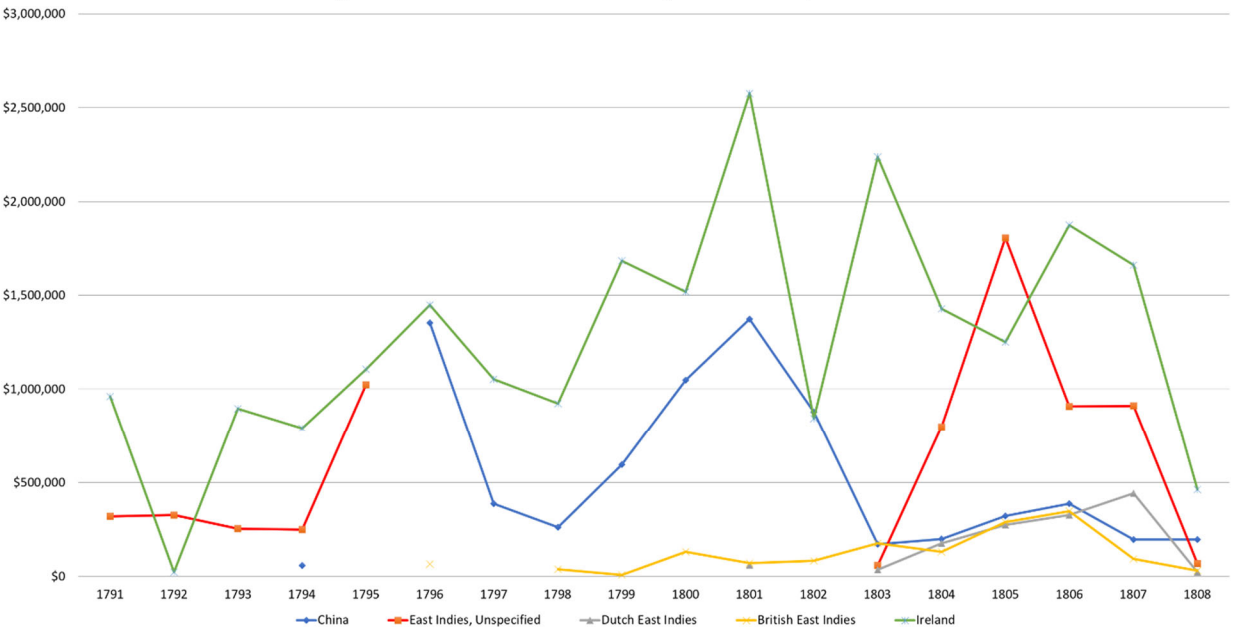


Source: "American Exports by Nation or Locality, 1791-1808," *American State Papers: Documents, Legislative and Executive, of the Congress of the United States*, Vol. 7, *Commerce and Navigation* (Washington: 1832), 6-735.

In addition to significant increases in trade with Northern Europe, American merchants extended their commercial reach to the far corners of the globe. Despite their proximity, American trade with the West Indies stagnated by 1804-1806 (see Table 1). New trade barriers resulted in exports to the British West Indies declining significantly after independence, from 27 percent in 1768-1772 to 10 percent in 1790-1792, before falling another 2 percent by 1804-1806.

Perhaps more surprisingly, however, trade with the Foreign West Indies fell as well, from 24 percent in 1790-1792 to 22 percent in 1804-1806. The significant increase of exports to "Other" destinations, in addition to a slight regression of trade with Southern Europe, likely account for this decline. From the Far East and the Levant to the Cape of Good Hope and coastal Brazil, American exports to "Other" destinations increased from 1 to 5 percent, or over 1000 percent in inflation adjusted dollar terms.

Figure 1.3: US Trade with Far East Compared to Ireland, 1791-1808



Source: "American Exports by Nation or Locality, 1791-1808," *American State Papers: Documents, Legislative and Executive, of the Congress of the United States*, Vol. 7, *Commerce and Navigation* (Washington: 1832), 6-735.

No prospective market captured the American imagination like the Far East. A series of exploratory voyages to Canton and Bombay, most famously *the Empress of China* in 1784, only exacerbated merchants' fascination with India and China. "We are mad for India Trade," William Constable wrote to Alexander Ellice in November of 1789.[26] Despite the considerable hazards, American merchants obsessed with sending a ship to the Indian Ocean or East China

[26] William Constable to Alexander Ellice, November 5, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

Sea. Constable informed potential partner James Phyn that a 1788 voyage to India posed substantial risks, but that the potential "30% profits more than made up for the danger."[27]

Yet despite the exotic promise of the Far East trade, voyages to China, India, and the East Indies remained a minor part of the broader expansion of external American commerce. As shown in Figure 1.3, American exports to a minor European trading partner like Ireland outpaced trade with the Far East in all but three years between 1791 and 1808. The opening of new Far East markets that had long been closed by British mercantilist policy certainly captured the imagination of Americans. However, the fundamental restraints of Far East trade, including high capital costs, dangerous year-long journeys, credit stringency, the need for constant and reliable revenue streams, and a lack of connections in China and India, made these long-haul voyages speculative ventures rather than cornerstone business plans.[28]

Additionally, standard market forces prevented most American Far East traders from reaping the massive profits they predicted in the years after the Revolution. The influx of American Far East fortune seekers caused price disruptions on both ends of the voyages. "I have rec.d a very long letter from one of my India Correspond.ts and find that the numberless Adventurers from this to that Country have for the present ruined that trade," William Constable wrote to Alexander Ellice in 1789.[29] Increased American demand in Far East ports sent the prices of goods such as tea and silk soaring, while the value of American trade goods such as ginseng

[27] William Constable to James Phyn, December 8, 1787, Constable-Pierrepont Papers, Box 1, New York Public Library.
[28] In Colleen F. Raffterty, "To Establish an Intercourse Between Our Respective Houses: Economic Networks in the Mid-Atlantic, 1735-1815" (Ph.D Dissertation, University of Delaware, 2012), 192, Rafferty underscores the relatively minor nature of the Far East trade during the 1780s. "New markets in the east offered no guarantees either. The China trade developed very slowly. After the *Empress of China* made its first speculative voyage in 1784, only five American ships ventured there over the next three years. Sending ships to China was hard to finance and dangerous to the crew. It proved even more impossible for merchants to anticipate what prices at home would be for silks and teas. In all, the China trade was risky."
[29] William Constable to Alexander Ellice, June 11, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

collapsed. Even if an American trader managed to obtain Far East goods on decent terms, dismal markets often awaited them at home.[30] Gluts of hyson and bohea tea in American ports pushed prices down, further shrinking merchants' margins. The global nature of the tea market and rapidly changing political economies in Britain and the Netherlands also resulted in high price volatility in the tea market.[31] As a result, American Far East traders faced greater uncertainty that eventually forced many to abandon the trade altogether.

In recent years, historians like James F. Fichter have argued that high returns from the Far East trade anchored American domestic investment in the 1790s and early 1800s. Far East riches "abetted capital accumulation among US moneyed elite," Fichter argues, "allowing them to amass enough capital to become financiers and thereby make more substantial investment in the banks, factories, roads, canals, and real estate that were such an important part of the 19th-Century economy."[32] While some American merchants generated large profits on *some* voyages to Canton and Calcutta, US Treasury trade data shows that the Far East trade remained far too small to anchor the burgeoning American capital base. Relatively low volume, uncertain markets, and high costs prevented Far East trade from providing the vast and consistent revenue streams needed to anchor the development of American capital markets. While a few successful merchants such as Stephen Girard plowed Far East profits into his banking and brokerage businesses, new, if more familiar, markets across the Atlantic drove American commercial growth.[33]

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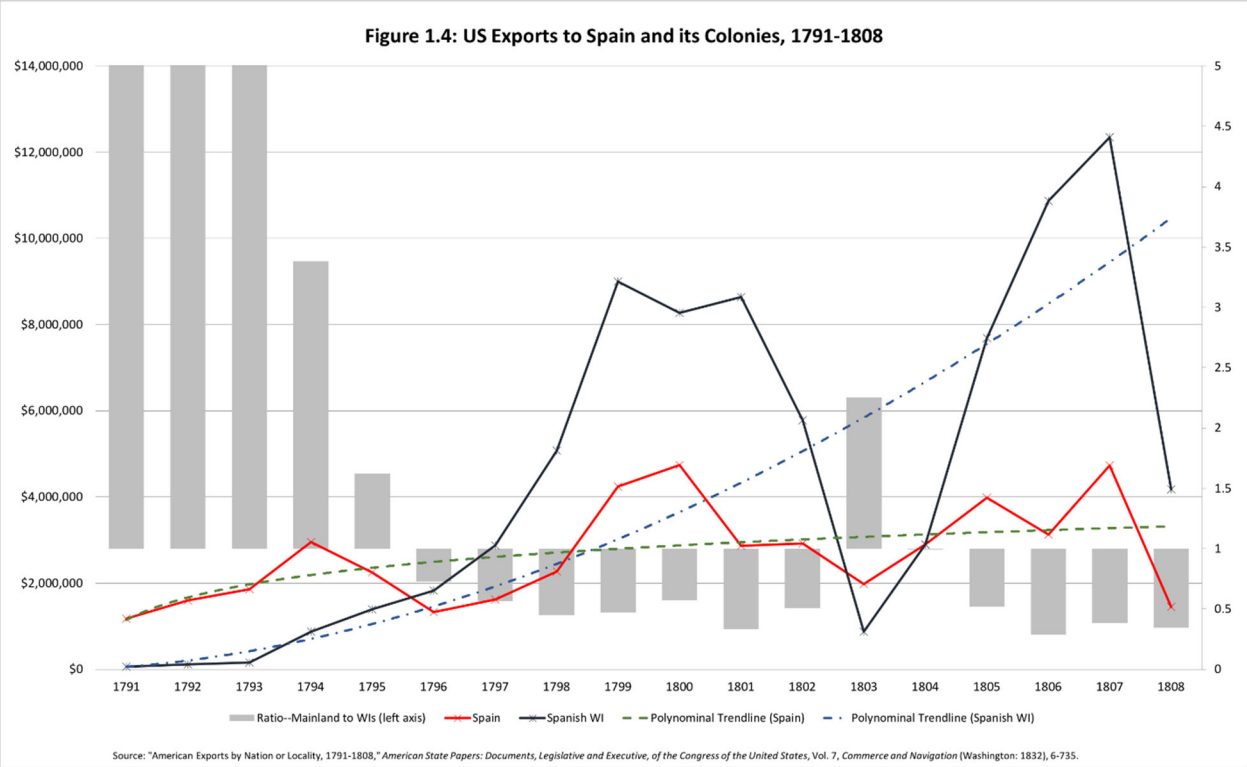
[30] William Constable to Gouverneur Morris, August 9, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[31] Seward W. Livermore, "Early Commercial and Consular Relations with the East Indies," *Pacific Historical Review* 15 (Mar. 1946), 31-58,
[32] James F. Fichter, *So Great a Proffit: How the East Indies Trade Transformed Anglo-American Capitalism* (Cambridge: Harvard University Press, 2010), 21.
[33] In Fichter, *So Great a Proffit*, 258-260, Fichter uses Girard as a primary example of his thesis. However, even in East Indies trade did anchor Girard's financial operations—a very uncertain proposition and one that Fichter does



Despite meager profits and a minimal impact on broader economic development, American merchants' engagement with Far East markets spawned new credit and commercial networks, business structures, and financial institutions that supported trade well into the nineteenth century.[34] The New York merchant Samuel Fleming utilized all of these new institutions when he commissioned "Capt. Randall" to sail the ship "Jay" to Canton in 1788.[35] Since Fleming faced competition from better-capitalized merchants such as Robert Morris and Tench Tilghman, he leveraged every part of the new system to make the trip profitable. After getting external investment from several members of the prominent Livingston clan, Fleming procured insurance from John Pintard and eventually received partial funding from the Bank of

not empirically prove—this was not the norm. Girard prove exceptional when many ways, of which this would be just another example

[34] Robert Morris to Henry Rucker & Sons, December 6, 1785, in Constable-Pierrepont Papers, Box 1, New York Public Library.

[35] Sampson Fleming to Samuel Ogden, December 28, 1789, in Samuel Fleming Letterbook, pg. 32, New York Public Library.

New York.[36] The same year, William Constable sent voyages to Sweden, the Cape of Good Hope, Brazil, and Honduras, using his extensive wartime contacts to draw leading bankers and politicians into financial systems nearly identical to those built by Fleming.[37] In cases like those of Fleming and Constable, mechanisms created to trade with the Far East facilitated the much more applicable and constant carrying trade with Northern Europe and Latin America.

As merchants like Fleming and Constable dispatched a growing number of voyages to "Other" markets (see Table 1), much of that trade came via coffee, sugar, cocoa, and mahogany re-exports from Brazil, Spanish Honduras, and Hispaniola. Once again, American merchants took advantage of significant gaps in Atlantic World trade that arose during the Napoleonic era. While detailed statistics about Latin American re-exports are spotty at best, data collected by Timothy Pitkin and Douglass C. North indicate a massive boom in the exports of caffeine and sugar that Americans carried under their neutral flag. Cocoa exports rose from 6,000 pounds in 1792 to 5,970,590 pounds in 1799. Likewise, coffee re-exports rose from 2,136,742 pounds in 1792 to 49,580,927 in 1798 and 48,312,713 pounds in 1806. Even more astounding, sugar transported to Europe by Americans rose from 1,176,156 to 145,837,320 pounds in 1806.[38] The importance of these re-exports from Spanish and Portuguese colonies cannot be overstated. Between 1804-1806, sugar and coffee alone comprised over 50 percent of the American export basket (see Table 2). While incomplete records prevent a full examination of the precise origins of these commodities, the opportunities provided by European demand for caffeine and sugar

[36] Sampson Fleming to Samuel Ogden, January 3, 1788, Samuel Fleming Letterbook, pg. 26, New York Public Library.
[37] Matthew White to William Constable, September 3, 1788, Constable-Pierrepont Papers, Box 1, New York Public Library; William Constable to Jeremiah Wadsworth, 1788, Constable-Pierrepont Papers, Box 1, New York Public Library.
[38] Pitkin in North, *The Economic Growth of Early America*, 230.

allowed American merchants to trade with Iberian colonies in the Western Hemisphere on a monumental level (see Figure 1.4).[39]

Yet despite the significant growth of exports from Iberian colonies to Europe, notable scholars like Donald R. Adams Jr. and Claudia Goldin and Frank Lewis have critiqued the notion that exports played a significant role in early American economic growth. Goldin and Lewis conclude that real export trade growth registered at just .84 to 1.32 percent during the early Republic.[40] While relevant, trade growth of this degree could not have fueled the rampant economic growth that scholars like Lindert and Williamson suggest took place during the 1790s.[41] In a similar vein, Adams suggests that "total real exports per capita increased from an average of $5.55 during 1790-1792 to a peak of $11.97 in 1807," attributing almost all this growth to the rapid expansion of the re-export trade in the mid-1790s.[42] However, Adams questions whether this meager re-export growth translated into actual GDP growth and broader economic development. The export-led growth hypothesis, whether dominated by domestic exports or re-exports, fails to identify a definite transmission mechanism by which the benefits of trade transferred to the broader economy.[43] Adams astutely suggests that the increase in Napoleonic era re-export trade crowded out domestic exports, thus canceling the benefits of an expansion of one area of trade with a decline in another. However, Adams's assertion that the benefits of the re-export trade remained "highly concentrated in the northeastern seaports" remains dubious.[44] While the "expansion of commercial banking, marine insurance, and the

[39] Between 1804 and 1806 Americans re-exported approximately 43,300,000 pounds of coffee from Brazil and other West Indian islands to the Netherlands.
[40] Claudia D. Goldin and Frank D. Lewis, "The Role of Exports in American Economic Growth During the Napoleonic Wars, 1793-1807," *Explorations in Economic History*, No. 17 (Jan. 1980), 10-11.
[41] Lindert and Williamson, *Unequal Gains: American Growth and Inequality since 1700*, 91-92
[42] Donald R. Adams Jr., "American Neutrality and Prosperity, 1793-1808: A Reconsideration," *The Journal of Economic History*, Vol. 40, No. 4 (Dec., 1980), 715.
[43] Adams, "American Neutrality and Prosperity," 731.
[44] Adams, "American Neutrality and Prosperity," 735.

construction industry" may not have fostered a financial services revolution in modern terms, the expansion of commercial banks did promote liquidity and unleash credit.[45] Nonetheless, the relatively small volume of trade growth meant that benefits remained minor at best. In sum, the supposed benefits of Napoleonic era trade expansion proposed by Bjork, North, and others likely did not have the firepower to fuel broader economic development in the United States.

Adams's findings further illustrate the importance of the domestic market to American medium- and long-term economic development. Confirming the trends depicted in Table 1, Adams argues that real domestic exports remained static between 1792 and 1796, and then declined significantly from 1796 to 1800. Since overall exports grew—albeit slightly—during the late 1790s, one must conclude that re-exports replaced, rather than complemented, domestic exports. Since the re-export trade collapsed in the early nineteenth century, the domestic economy again shouldered the burden of American GDP expansion. Despite the significant opportunities that came with expanded foreign trade during the Napoleonic era, the rapidly growing domestic economy anchored the American development story.

Growth of the Domestic Giant

The importance of the domestic market for post-Revolutionary economic development cannot be understated. Despite the scholarly focus on new markets, new exports, and new modes of shipping American goods across the world, the domestic market accounted for nearly all of economic growth between 1791 and 1815. American traders certainly expanded to new foreign markets throughout the 1790s and became increasingly adept at doing so. However, Americans engaged the progressively integrated domestic market at a level that dwarfed all foreign

[45] See Chapter 2, pg. 54.

commercial activity. In this light, state and local efforts to connect small towns to rivers and roads, merchants' creation of denser domestic trading systems, and the formation of specialized investment networks did not simply indicate a more efficient export system, but rather a nimble and sophisticated domestic economy.[46]

Exogenous and endogenous factors drove the domestic sector to its dominant post-Revolutionary position. First, the rapid population growth in the postwar years unlocked tremendous market demand that, as a market-based society, citizens would or could not meet on their own. Second and more importantly, the volatile Napoleonic world remained incredibly risky. Ventures to the Far East sparked excitement but yielded minor and uneven returns. Likewise, while Americans adeptly moved from Amsterdam to Hamburg to France as the Napoleonic wars closed markets and open new ones, this volatile business climate exacted serious costs. Not only did many Americans incur significant capital losses, but the volatile foreign market resulted in erratic prices, high capital and insurance costs, and the risk of property confiscation. In other words, while Napoleonic era conflict created sources of demand that Americans became very good at meeting, it also seriously raised transaction costs. While some

[46] While beyond the scope of this study, a new understanding about the importance the American domestic economy can have numerous implications for the study of early American economic development. First, the significant growth in the domestic market can shed new light on monetary issues, and particularly that of monetary scarcity during the 1790s and early 1800s. A larger domestic economy would increase monetary velocity and transactions. When combined with Hamiltonian efforts to increase the money supply through the bank of United States another paper money entities, understanding scope and scale of domestic economic growth can shed new light on early Republican price structures and consumer behavior. Secondly, understanding the importance of domestic economic growth can informed new interpretations of Hamiltonian political economy. With import/export revenue notoriously difficult to collect, the federal government would have left immense amounts of revenue on the table should domestic economic growth have been so much more important than the export sector. If Hamilton understood this, it could explain his insistence on internal taxation Beyond simply wanting to raise revenue on the backs of rural Pennsylvania distillers. Thirdly a better understanding of the scope of domestic economic growth provides even greater explanation for Americans voracious appetite for land. While, as Peter Onuf and Drew McCoy argue, Jeffersonian Americans needed to continue to expand in order to provide land to virtuous yeoman farmers, American economic growth as a whole rested on the continued development of new lands and their engagement In local and regional markets. In other words, Americans could not simply export their way out of macroeconomic shocks. Americans had to increase living standards by developing at home rather than sending Products to overseas markets. All these topics deserve further study and such examinations could greatly benefit our understanding of the economic development of United States.

American merchants willfully shouldered increased costs in return for potential profits, most wrestled with the changing geopolitical and macroeconomic situation that produced frequent bankruptcy as well as riches. While Americans certainly did not back away from the Napoleonic era carrying trade, the prospect of a stable, growing, and integrating domestic sector represented a profound attraction.

Why, if the domestic sector so dominated the early American economy, has foreign trade virtually monopolized interpretations of pre-industrial economic development? The paucity of source material on the American domestic sector is the primary culprit. Early American economic data remains elusive as interstate conflict and a non-existent federal bureaucracy prevented the collection of business data in the federal census until 1840. Federal records do not exist for the Confederation era, largely because the overburdened Congress did not collect data on imports, exports, balance of payments, or tariffs and duties. Congress's lack of taxing power made trade data irrelevant as it did not need to track revenue or allocate resources. While individual port authorities like those in Philadelphia and Charleston compiled trade data to some extent, most of those records have not survived.[47] The evidence that stood the test of time remains patchy at best, and certainly not capable of supporting systematic analysis. Individual merchant records contain fragmentary glimpses of commercial activity, but again fail to provide the universal coverage needed to evaluate the era's economic development. In sum, scholars

[47] Accounts and Receipts of the Tonnage Office, 1784-1789, Roll #4421, Pennsylvania State Archives, Harrisburg, Pennsylvania; Abstracts of Duties and Drawbacks 1784-1789, Roll #4421, Pennsylvania State Archives, Harrisburg, Pennsylvania; Duties on Trade at Charleston, 1784-1789, No. M/6, South Carolina Department of Archives and History, Columbia, South Carolina; South Carolina Treasury Ledgers and Journals, 1783-1791, No. M/5, South Carolina Department of Archives and History, Columbia, South Carolina. The National Archives (NARA) also holds official customs data for Baltimore (1780-1939), Boston (1783-1820), and New York (1784-1919) consolidated in "Records of Customhouses and Collection Districts," 36.3.1, though these records contain many glaring holes.

have struggled to evaluate the Confederation era economy in general, and its domestic economy in particular.

The watershed moment came with the establishment of the Hamilton Treasury in 1789 and 1790. Desperate to understand the depths of the new nation's financial situation, Hamilton enacted a data collection regime on all sources of government revenue.[48] Since the Treasury relied on tariff and import duties for most of its income, the new data collection regime almost exclusively covered foreign trade. The unwillingness of Congress to levy income, sales, or other domestic taxes resulted in Treasury Department data almost completely missing the domestic economy.[49] Scholars have struggled to find a suitable structure with which to evaluate the size of the domestic market, how it changed over time, or how it compared to the foreign trade documented in Treasury data. Thus, the lack of evidence, rather than the preponderance of the evidence itself, shaped theses about American economic development for a century. In other words, in the case of the American domestic sector historians have confused a scarcity of evidence for evidence of scarcity.

The nature of qualitative evidence only exacerbates historians' gravitation toward the export sector as the driver of early American growth. As described above, the merchant letters from which historians so frequently work do not accurately represent the volume or direction of their trade. The prospect of sending one ship to Canton consumed dozens of letters in New York merchant William Constable's correspondence, while small but important changes to his domestic trade rarely illicit more than a sentence. In some cases, the surfeit of words about foreign excursions makes sense; long-distance trade required immense logistical planning,

[48] Forrest McDonald, *Alexander Hamilton: A Biography* (New York: W.W. Norton & Company, 1982), 138-141.
[49] Congress compiled and published all Import and export reports in American State Papers, Vol. 7, Commerce and Navigation 4: 6-735.

especially for American merchants unfamiliar with it. However, much of the correspondence dedicated to speculative ventures was exactly that—excited talk about new prospects, rather than details of a merchant's actual commercial exploits.

Since merchants did not intend their letters to objectively summarize their commercial activities, cross-referencing the avidity of their letter books with structured ledger records becomes especially important. The contrast between William Constable's correspondence and ledgers is instructive. While many of Constable's letters contained excited discussions of foreign markets, politics, and personal matters, his ledgers reveal the structure of his business in striking detail. Constable notes a domestic address for 103, or 42.7 percent, of the 241 independent counterparties for whom he held accounts in 1786.[50] Constable listed 20 of these counterparties, or 8.3 percent, as having a foreign address.[51] Of the remaining 118, this author can verify that approximately 90, or 37.3 percent, were either American, or operated extensively in the United States. The remaining 11.7 percent could not be identified. Thus, at bare minimum 80 percent of William Constable's commercial contacts operated primarily within the United States, with the likelihood that at least 90 percent did so. Of course, Constable's average transaction with merchants in foreign ports superseded the value of his average domestic transaction. However, limits on ship capacity and high transaction costs prevented Constable from reaping profits of higher than 30 percent. Capital scarcity also prevented Constable from dispatching a large number of ships to foreign ports. Thus, even a merchant like Constable, who previous historians

[50] Constable noted Philadelphia, Virginia, New York, Baltimore, Elizabethtown, Delaware, Schenectady, Trenton, Charleston, Albany, Coston, and Providence as the locations of these 103 independent counterparties.
[51] Constable noted L'Orient, Lisbon, Belfast, France, Havana, London, Gothenburg, Kingston, St. John's, Canada, Bristol, Amsterdam, Barcelona, and Bordeaux as the location of these 20 counterparties.

have described as an import-export merchant, conducted the vast majority of his business within the United States.[52]

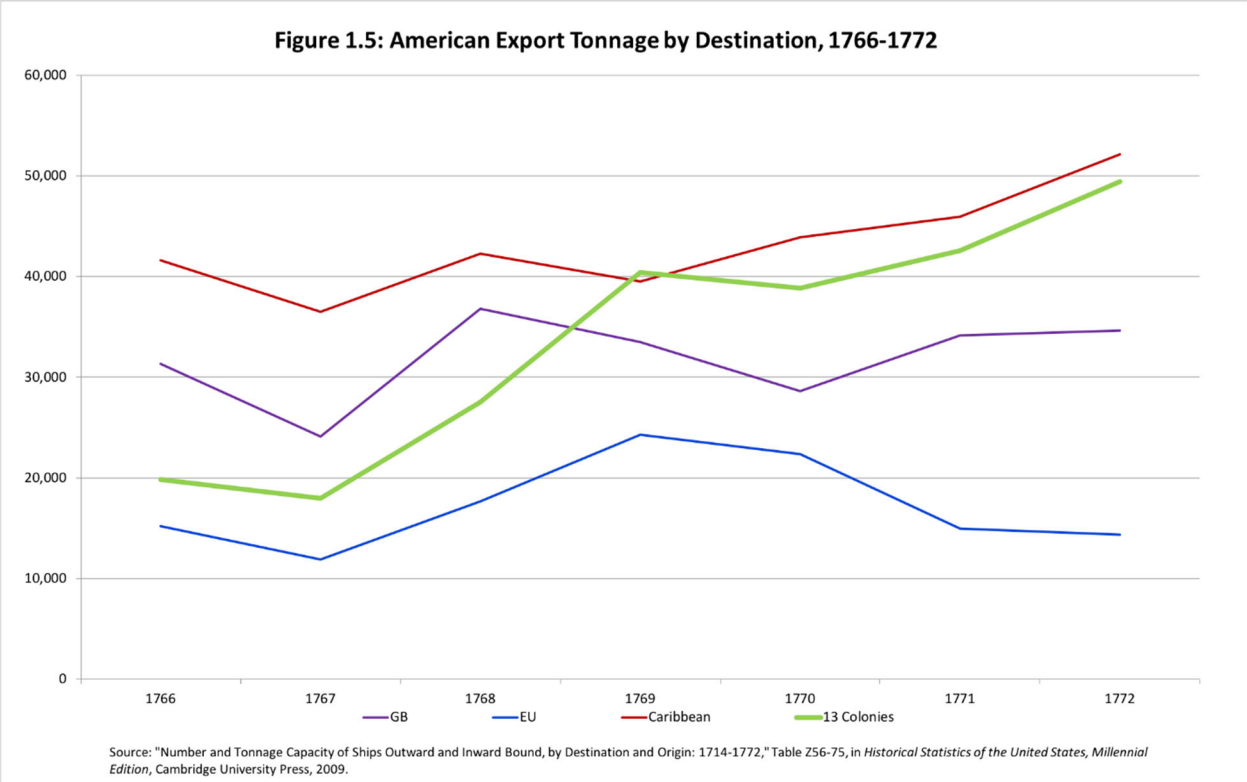
Despite the scarcity of quantitative evidence, the domestic market played an important role in American economic development stretching back to the colonial era. The colonial domestic market remained segmented and export oriented from the earliest settlements in the early 1600s through the mid-eighteenth century. John J. McCusker and Russell R. Menard describe a domestic colonial economy in which agriculture comprised over 90 percent of production. Scarce labor and capital, high transportation costs, low productivity, and non-market driven diversification defined the "colonial character" of the American economy.[53] In many cases, most colonial economic actors existed in an uneasy balance between small-scale household consumption and a loosely-integrated local market.[54] Outside of the major port towns and large tobacco-producing plantations, "most farmers"—and thus, most Americans—"placed the subsistence needs of their families and the long-term security of their farms ahead of short term income maximization."[55] Nonetheless, the pull of both domestic and global markets proved too attractive for colonial Americans as they entered the second half of the eighteenth century.

[52] Donald G. Tailby, "Chapters from the Business Career of William Constable: A Merchant of Post-Revolutionary New York" (Ph.D Dissertation, Rutgers, The State University, 1961) and William Allen Davis, "William Constable: New York Merchant and Land Speculator, 1772-1803" (Ph.D Dissertation, Harvard University, 1955). Conducting a precise forensic accountancy of William Constable's trade remains difficult due to missing records, unidentified counterparties, and other data inconsistencies. However, a rudimentary evaluation of constable's trade using a waiting system that skews in favor of foreign commerce suggests that at least 70 percent of the value of William Constable's trade Took place within the United States.

[53] McCusker and Menard, *The Economy of British America*, 297-299. In this section, the authors describe propose a diversification attributed more to personal consumption than risk mitigation. In other words, farmers produced a variety of crops that would satisfy household needs and those of the immediate community, rather than those that could fetch a higher price in some theoretical market.

[54] McCusker and Menard, *The Economy of British America*, 299-301.

[55] McCusker and Menard, *The Economy of British America*, 300.



In the final twenty years of the colonial period, the domestic economy began a significant reorientation. The Seven Years War and recession that followed it sparked "a notable qualitative shift," write McCusker and Menard, "pointing to a time when the American economy would no longer be export led and would shed its 'colonial' character."[56] Shedding this colonial character meant greater and more widespread participation in market structures, including crop specialization and the emergence of "middlemen" that connected producers to regional markets. In other words, the gap between producer and big-city market became increasingly populated and increasingly dense. While historians like Richard Bushman and T.H. Breen have described the consumer culture that arose with growing American wealth, much of that wealth came from the increasing domestic market activity of Americans of every stripe.[57]

[56] McCusker and Menard, The Economy of British America, 295.
[57] Richard Bushman, *The Refinement of America: Persons, Houses, Cities* (New York: Vintage Books, 1992), xv-xix & 308-312, and T.H. Breen, *The Marketplace of Revolution: How Consumer Politics Shaped American Independence* (Oxford: Oxford University Press, 2004), 33-68; While Bushman, Breen, and others rightly pointed

Similar to the pattern that occurred following the American Revolution, continental warfare between 1756 and 1763 resulted in deeper and more integrated market activity.[58] As networks developed and demand increased, the coastwise trade between colonial ports grew dramatically. As shown in Figure 1.5, intercolonial export tonnage grew by 149 percent between 1766 and 1772, whereas tonnage to the West Indies, Great Britain, and Europe grew by a mere 10 percent combined over the same period.[59] Farmers and local dealers gravitated to markets across colonial North America as new road, river, and coastwise shipment options came online.[60] McCusker and Menard argue that historians always overemphasized the degree to which American farmers were isolated from market incentives and domestic trade.[61] However, growth of the domestic American economy accelerated in the years immediately preceding the Revolution and may have in fact contributed to the American uprising.[62] While the Revolutionary War paralyzed most non-local trade, the domestic market became the major source of growth throughout the early Republic.

Interstate trade only grew after the Revolution. Coastwise shipping expanded at a rate of 6.6 percent between 1790 and 1815. Coastal shipping grew at an even faster 10.5 percent between 1790 and 1800. While data does not exist for the years from 1773 to 1789, a reasonable

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out the changing cultural patterns of consumption in early America, the data analyzed for this Study may indicate that imports of the consumption of goods detailed by these authors came in much lower levels than they otherwise appear. While Treasury Department statistics suggest that American imports contributed a relatively high percentage of national income, this number falls considerably when re-exports are subtracted from import totals. In fact, net imports rarely topped $20 million per annum. While still a respectable total, these revised numbers suggest that Americans were not importing British luxury goods in the numbers suggested by Bushman and Breen. That said, Americans may simply have been fine domestic substitutes, which not only does not change Bushman and Breen's theses about the rise of American consumer culture, but could suggest that small-scale American manufacturers were far more tied into cultural development and historians have previously allowed.

[58] See Chapter 3, pp. 136-171 for detail on the post-Revolutionary integration of the American domestic economy.

[59] McCusker and Menard, The Economy of British America, 277.

[60] For more on investment in transportation, see Chapter 3, pp. 136-164.

[61] McCusker and Menard, The Economy of British America, 307 & 320.

[62] Robert E. Wright, "New Jersey and the Stamp Act," unpublished, conveyed to the author by email on May 25, 2017.

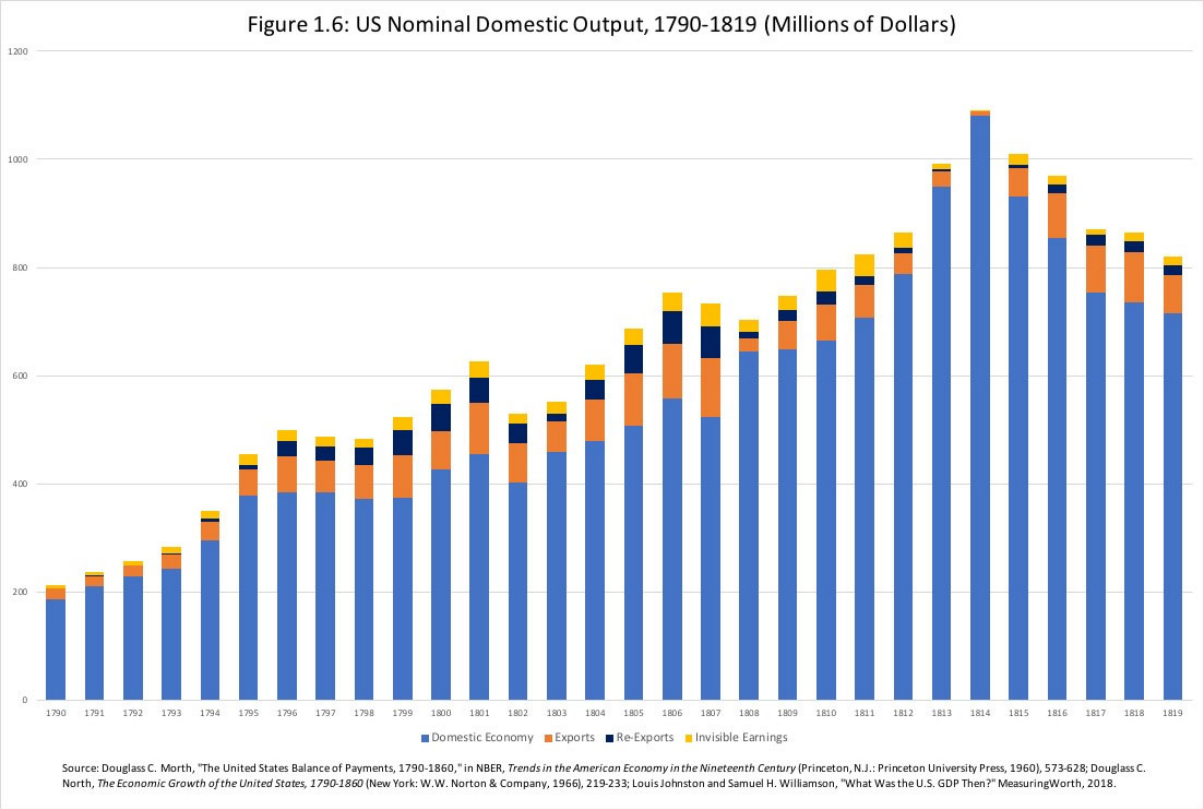
calculation suggests that the coastwise trade grew rapidly after the Treaty of Paris. Despite depression-era negative growth in the broader economy, the coastwise trade expanded by as much as 37.7 percent per annum between 1784 and 1789.[63] While the actual growth rate may have been significantly lower than the estimated 37.7 percent, interstate coastwise commerce undoubtedly expanded at an unprecedented rate after independence. Coastal shipping growth fell slightly after 1800, likely due to better inland transportation options including river and road travel. Nonetheless, coastal shipping between American commercial centers expanded dramatically after the Revolution, which only strengthened the burgeoning commercial bonds between the new united States.

[63] Estimating the growth of American coastwise shipping during the depression years of the 1780s remains difficult due to a gap in data between 1773 and 1789. Several fundamental assumptions must anchor any attempt to estimate the coastwise trade level for those years. First, solid data exists for years on each side of the Revolutionary War and subsequent Depression of the 1780s—aggregate coastwise tonnage stood at 49,442 in 1772 and 103,775 in 1790. Second, numerous qualitative accounts, as well as studies by Kulikoff and Shepherd and Walton, suggest that the coastwise trade stagnated or, more likely, collapsed during the war due to the Royal Navy's presence along the American coast. Thus, the fundamental variable comes in the tonnage levels between 1773 and 1775. To formulate a reasonable estimate of depression era coastwise trade levels, I developed three scenarios that provide a range of solutions. None of the scenarios should be taken as definitive or precise, but rather an approximation aimed at understanding the basic arch of coastwise trade during the Revolutionary era.

The first scenario assumes the extremely high 1766-1772 growth rate of 18.7 percent for the 1773-1775 period. Anomalous growth rates of 53.1 and 46.6 percent in 1768 and 1769 makes the continuation of the average 1766-1772 rate into the 1773-1775 period highly unlikely. Nonetheless, assuming an 18.7 percent rate of growth from 1773-1775, and then a wartime stagnation at 82,689.09 tons (another scenario incongruent with wartime accounts of a collapse in the coastwise trade) between 1776 and 1783, the growth rate between 1784 and 1789 would stand at a meager 3.5 percent. This scenario is highly unlikely and should be discarded.

The second scenario assumes a much lower 1773-1775 growth rate of 3.1 percent derived by averaging the non-anomalous rates from 1766-1772. Following the same process as Scenario 1, coastwise trade would stagnate at 74,259.95 tons during the war years. While this scenario results in a slightly higher 1784-1789 growth rate of 5.4 percent, it still rests below the 1790-1815 rate of 6.6 percent and far below the 1790-1800 rate of 10.5 percent. This seems inconsistent with the qualitative evidence presented above and especially in Introduction, pp. 6-12.

A more likely scenario can be found by changing two fundamental assumptions. First, Scenario 3 assumes the 1790-1815 growth rate of 6.6 percent for 1773-1775. Most importantly, however, Scenario 3 assumes a collapse in the wartime coastwise trade. This model returns the wartime carrying trade to the post-Seven Years War recession (1766) level of 19,850 tons, which is likely still too high. Nonetheless, in order for coastwise tonnage to rebound from an assumed 19,850 to the 103,775 found in 1790, growth during the Depression of the 1780s would have had to average 37.7 percent between 1784 and 1789. While high, the number is not outside the realm of possibility for two reasons. First, the American mercantile community invested heavily in the coastwise trade immediately after the war (see Chapter 3, pp. 136-164 noted above). Second, the dramatic 37.7 percent depression era growth rate represented a rebound in the coastwise trade rather than a sustainable growth path. Once relative stability returned in 1790, the coastwise trade return to a robust, though not stunning, 10.5 percent from 1790 to 1800.

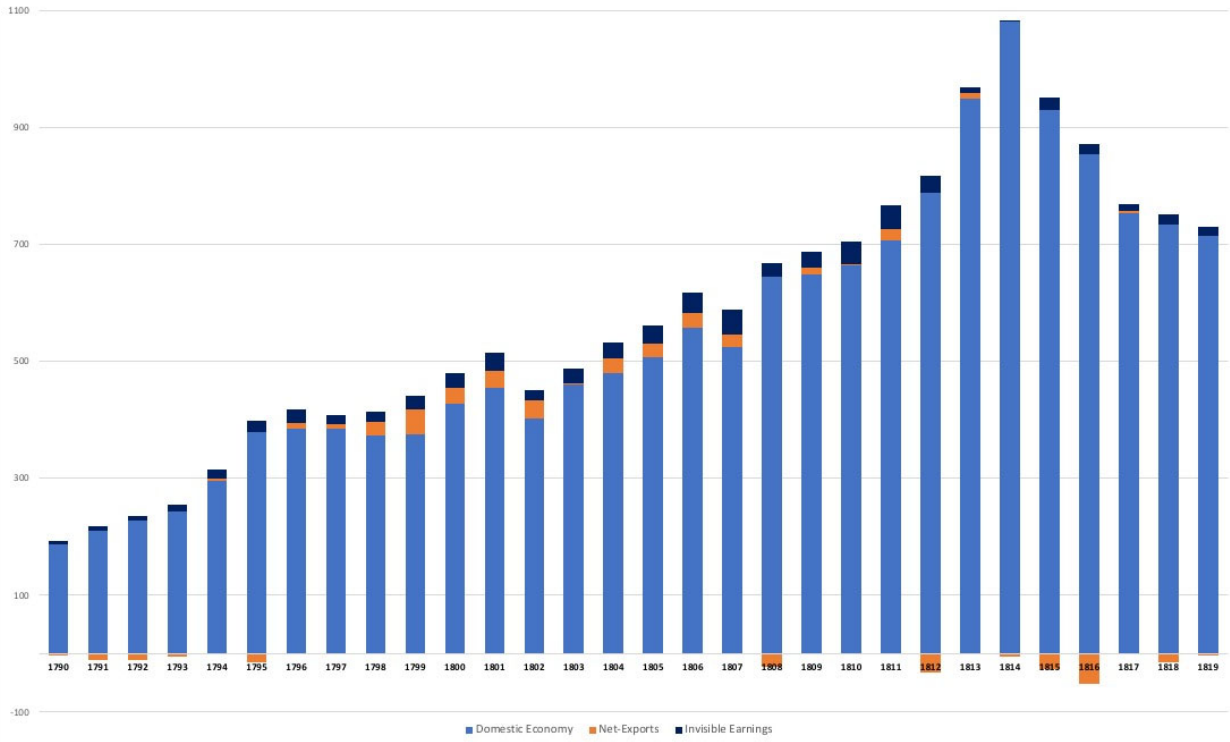


Research by Douglas C. North, Louis Johnston and Samuel H. Williamson, the Department of the Treasury, and others has produced various series of data that, when combined, provide sufficient information to conduct a substantial statistical evaluation of the early American economy.[64] The combination of data from North, Johnston and Williamson, and others provides relatively reliable statistics on national GDP, exports, re-exports, and imports, from which scholars can deduce the domestic sector and invisible earnings. While imperfect to say the

[64] The data set used for this analysis combines two sources, Douglass C. North's data on American imports, exports, and balance of payments—found in Douglass C. North, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), pp. 573-628 and North, *The Economic Growth of the United States*, 219-233—and Louis Johnston and Samuel H. Williamson's annual GDP statistics, in Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018. While North's data has been used by generations of scholars and it is generally considered academically reliable, the lack of the national statistics bureau makes calculations of annual GDP for the early Republic especially difficult. While problematic in numerous areas, including their ill-defined use of "residuals" to source baseline productivity figures, Johnston and Williamson's data marks the best and most widely used attempt to capture the changes and early American GDP that we have today. See https://www.measuringworth.com/datasets/usgdp/sourcegdp.php for a broad description of Johnston and Williamson's methodology and sources.

least, this data set offers a much-needed perspective on the machinations of the early American domestic economy.

Figure 1.7: US Nominal GDP, 1790-1819 (Millions of Dollars)



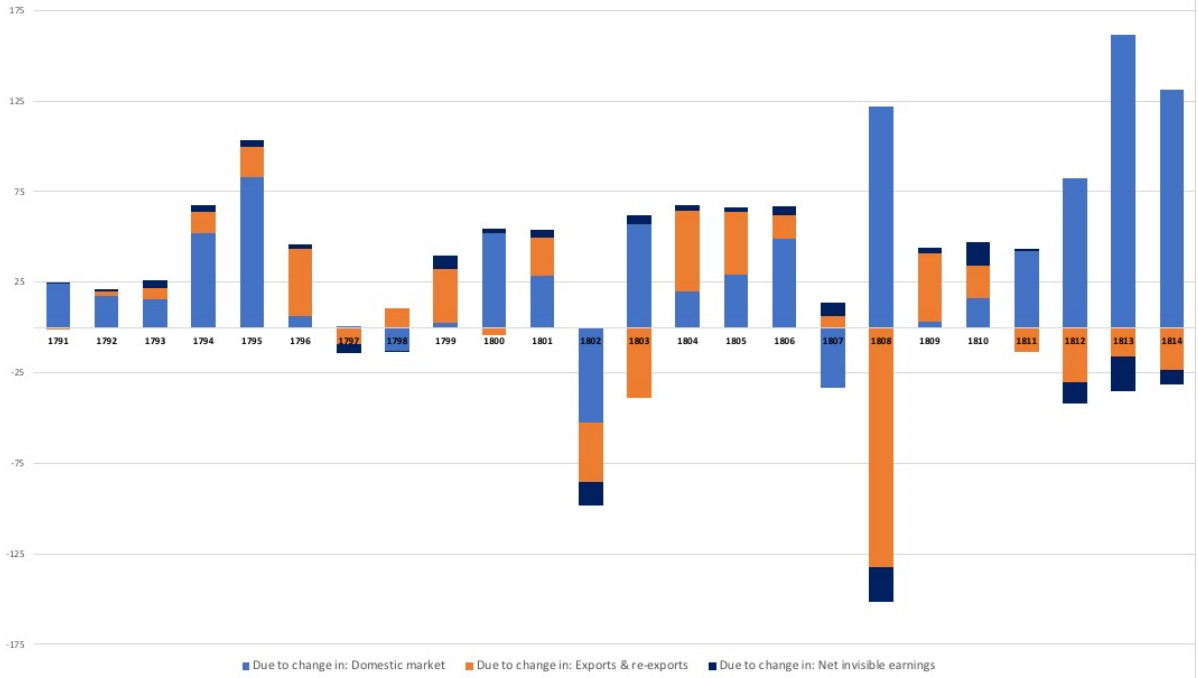
Source: Douglass C. Morth, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), 573-628; Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 219-233; Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018.

As the new nation emerged from two decades of war and depression in the late 1780s, the domestic sector dominated the American economy. As shown in Figures 1.6 and 1.7, the domestic sector's contribution to national nominal GDP ranged from a high of nearly 100 percent in 1791 and 1792 to a low of 84.8 percent in 1799.[65] Even in years of domestic economic crisis (1797-1798) and agricultural blight (1802-1803), the domestic sector remained central to the American economic system. In years that saw significant growth in the export and re-export

[65] It is important to note that these figures are not precisely calibrated to the representations in Table 1.4. Figure 1.6 shows gross exports and re-exports, and the US in some years like 1791, 1792, 1812, 1814, 1815, and 1816, the domestic sector represented over 100 percent of nominal GDP. Figure asked does not take net exports into account because in many years net exports are negative, which would be difficult to depict in a standard stacked bar graph. See footnote 50 for a more accurate depiction.

sector (1799-1802), the domestic economy kept pace as the cornerstone of nominal GDP, signifying a resilient service sector and consumption industry that both aided foreign commerce and benefited from it. Regardless of foreign trade volatility, the domestic production and consumption of goods and services anchored the vibrant American economy.

Figure 1.8: Annual Share of GDP Change, 1790-1814 (Millions of Dollars)



Source: Douglass C. Morth, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), 573-628; Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 219-233; Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018.

The domestic sector also shouldered a high percentage of the growth burden in the early Republic. As shown in Figures 1.8 and Table 3, the domestic economy accounted for a majority of annual net GDP growth 24 times in the 29 years between 1791 and 1820, and 24 out of 25 years when calculated in five-year rolling averages to smooth seasonal volatility (see Figure 1.9).[66] While consistently registering higher levels of extensive and intensive growth than the

[66] The figures displayed in Table 1.4 are developed by dividing annual absolute change in sectoral growth by the total absolute change in GDP. The absolute yearly domestic market change figures are determined by subtracting the annual balance of payments (exports+net imports+invisible earnings) by nominal GDP. Its share of net GDP change is calculated by dividing the yearly change in the domestic market by absolute change in GDP. The export sector

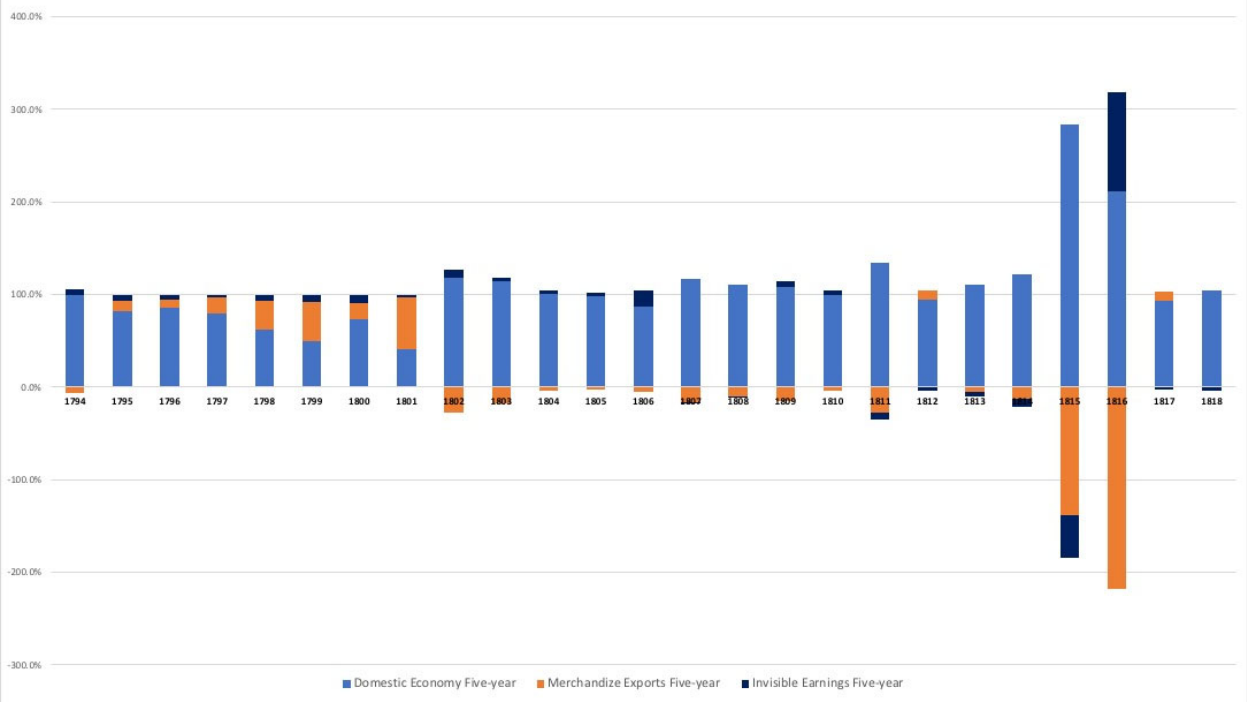
export or invisible earnings sectors, the domestic economy demonstrated much lower volatility. In many years, the domestic economy accounted for over 100 percent of annual GDP growth, with losses in the export sector and invisible earnings accounting for the difference.[67] Put simply, not only did the domestic economy account for higher shares of GDP growth in almost every year of the early Republic, but it did so at higher levels, with more consistency, and with less variation.

The importance of the domestic economy as a growth driver becomes even more visible when measured in five-year periods (see Table 3). Between 1790 and 1795, the domestic economy accounted for 99 percent of net GDP growth, and 100 percent from 1800 to 1805. Even between 1795-1800 when Europeans ravenously consumed American foodstuffs and other raw materials, the domestic economy accounted for 79 percent of net GDP growth. While new foreign markets provided American producers fresh incentives to engage in long-distance trade, the number of domestic trade opportunities grew much faster. As the Revolution drew Americans closer together on a local, regional, and national level, it facilitated greater commercial contact. Expansion into new western lands and, more importantly, connecting producers with markets in areas that already existed, consumed the vast majority of merchants' energy and capital. In this way the domestic sector, not the export trade, became the dominant driver of economic development and dynamism after the Revolution.

figures are determined by subtracting imports from exports and re-exports and dividing them by annual change in GDP.

[67] Invisible earnings deserve mention here. Despite the expansion of banking and specialized financial industries such as insurance and brokering, invisible earnings' share of change in GDP remains remarkably constant when evaluated in five-year overlapping periods. This is not to say that invisible earnings as an industry did not develop during the public, but rather had its development was incredibly volatile. As shown in the annual shares of invisible earnings net change GDP, the figures vary widely and change quickly. Much of this volatility came as inexperienced figures entered the field, hoping for quick paydays. While experienced figures like William Constable and John Delafield build six sets full and largely stable financial, insurance, and brokerage firms, the churn of individuals seeking a place in America's burgeoning service industry was often violent.

Figure 1.9: Share of Net Change in GDP, 1794-1818 (Five-Year Overlapping Periods)



Source: Douglass C. Morth, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), 573-628; Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 219-233; Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018.

Vibrant domestic sector growth consistently carried the American economy through periods of systemic stress. The export sector experienced negative growth eleven times between 1790 and 1810, yet US nominal GDP grew every year during the same period except for three: 1797, 1802, and 1807. Each of these three episodes of negative growth arose from a major shock to the domestic economy: massive flooding that disrupted domestic trade and blight destroyed crops across the country in both 1797-1798 and 1802-1803. In 1807, uncertainty over Thomas Jefferson's embargo gutted domestic production. Nonetheless, the American economy still grew in the actual embargo year of 1808 because the domestic sector sharply rebounded. The Jeffersonian embargo resulted in a net loss to the export sector of $132.6 million, yet the domestic market showed even stronger growth, resulting in $57 million in nominal GDP expansion despite Jefferson's catastrophic restriction on foreign trade. In other words, recession occurred in the early American economy because of shocks to the domestic market, not the

vicissitudes of foreign trade. Likewise, a strong domestic sector had the power to carry the US economy to significant growth even when the President prohibited all external trade. Only in 1802 did the domestic market and export market contract in the same year, meaning that the domestic economy fueled growth in the national economy in the face of considerable export sector loss on eight separate occasions.

Table 1.4: Percentage Change in GDP, 1792-1818

	Share of domestic economy in net change in GDP		Share of net merchandise exports in net change in GDP		Share of net invisble earnings in net change in GDP	
	Annual share	5-year rolling periods	Annual share	5-year rolling periods	Annual share	5-year rolling periods
1792	143%		-45%		2%	
1793	92%		1%		6%	
1794	59%	99%	23%	-6%	17%	7%
1795	82%	83%	13%	10%	6%	7%
1796	122%	85%	-27%	9%	5%	5%
1797	18%	79%	75%	18%	8%	3%
1798	-6%	62%	49%	31%	56%	7%
1799	-325%	49%	438%	43%	-13%	7%
1800	8%	73%	66%	17%	26%	10%
1801	138%	42%	-43%	56%	5%	3%
1802	84%	118%	2%	-27%	14%	10%
1803	84%	115%	-4%	-18%	20%	3%
1804	157%	100%	-73%	-4%	15%	4%
1805	43%	99%	50%	-2%	7%	3%
1806	103%	88%	-13%	-5%	10%	17%
1807	88%	117%	4%	-17%	9%	0%
1808	120%	110%	7%	-10%	-27%	0%
1809	214%	108%	-81%	-15%	-34%	7%
1810	8%	100%	84%	-4%	8%	4%
1811	84%	135%	-54%	-28%	70%	-7%
1812	69%	94%	29%	10%	2%	-4%
1813	432%	111%	-270%	-5%	-62%	-6%
1814	88%	121%	22%	-13%	-10%	-9%
1815	120%	284%	-13%	-138%	-7%	-46%
1816	98%	211%	13%	-219%	-12%	107%
1817	72%	93%	25%	10%	3%	-3%
1818	204%	104%	-116%	0%	12%	-4%

Five-year periods		Five-year periods		Five-year periods	
1790-1795	93%	1790-1795	-2%	1790-1795	10%
1795-1800	79%	1795-1800	18%	1795-1800	3%
1800-1805	118%	1800-1805	-27%	1800-1805	10%
1805-1810	117%	1805-1810	-17%	1805-1810	0%
1810-1815	94%	1810-1815	10%	1810-1815	-4%
1815-1819	99%	1815-1819	2%	1815-1819	0%

Source: Douglass C. North, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth* Century (Princeton, N.J.: Princeton University Press, 1960), pp. 573-628; Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 219-233; Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018.

The domestic market's dominance of the early American economy illuminates the United States's divergence from the traditional export-based development model common in post-colonial economies.[68] Beginning with raw material exports, new economies often transition to a growth structure based on the trade of resource-intensive, low-value added manufactures. Finally, after sufficient accumulation of technological knowledge, capital, and productive capacity, developing economies move to domestic distribution and consumption in an integrated domestic market. In this way, America's scenario scrambled the standard development model: exports remained important, but domestic production, distribution, and services formed the core of growth throughout the early Republic.

The United States experienced the raw material export stage of development during the colonial era, when tobacco and other raw commodities anchored economic growth. However, the Seven Years War and subsequent recession, followed by the American Revolution and Depression of the 1780s, fundamentally changed the American development pattern. As shown above, Americans moved into higher value-added exports after the Revolution, including flour, cotton, and other semi-process commodities. However, the shocks of war and depression sparked the development of a sophisticated domestic economy *alongside* natural resource-intensive manufacturing export industries. In other words, the Revolutionary era accelerated the American economy's transition from export- to domestic-sector driven growth, while activating two stages of economic development at the same time. This accelerated process of development not only led

[68] Gavin Wright, "The Origins of American Industrial Success, 1879-1940," *American Economic Review* 80, no. 4 (September 1, 1990): 651–68; William J. Baumol, "Productivity Growth, Convergence and Welfare: What the Long-run Data Show," *American Economic Review* 72 (1986): 1072-85; Angus Maddison, "Explaining the Economic Performance of Nations, 1829-1989," in W. J. Baumol, R. R. Nelson, and E. N. Wolff, eds., *Convergence of Productivity: Cross National Studies and Historical Evidence* (Oxford: Oxford University Press, 1994); Leonidas C. Leonidou and Constantine S. Katsikeas, "The Export Development Process: An Integrative Review of Empirical Models," *Journal of International Business Studies* 27, No. 3 (1996), pp. 517-551

to significant levels of growth in the 1790s and early 1800s, but it also facilitated the expedited accumulation of financial capital, human capital, and technological knowledge that allowed Americans to capitalize on their profound resource endowment during the Industrial Revolution.

In this sense, the story of early American economic development is one of both significant continuity and profound change. Colonial raw material extraction anchored future economic growth, providing the necessary antecedent to structural development.[69] However, the exogenous shocks of the Revolutionary Era sparked profound institutional and cultural changes that disrupted the standard course of commercial development. Facing war and depression, Americans jettisoned their colonial export model and embraced the systemic integration that began in the late 1760s. The natural process of export-based development continued, but the domestic economy built by revolutionary necessity only grew stronger by the year. In the case of the American economy, Revolution, not evolution, won the day.

Conclusion

While the United States may have been "conceived in liberty," its economy came of age in chaos. Rampant volatility permeated the export and domestic sectors, forcing commercial actors to constantly battle uncertainty and risk. War and depression disrupted the colonial economic model, while capital and monetary scarcity, and incessant macroeconomic threats disturbed markets across the new United States. Foreign trade became even more uncertain as warfare, embargoes, and imperial contestation closed markets and changed demand patterns. Many American merchants saw this volatility as opportunity and adeptly moved their operations around the Atlantic World to meet demand wherever it arose. However, while many Americans

[69] Kenneth Pomeranz, *The Great Divergence : Europe, China, and the Making of the Modern World Economy* (Princeton, N.J.: Princeton University Press, 2000), 22–23.

did break into foreign markets and made fortunes doing so, many suffered significant disappointment along the way.

In the midst of the hyper-volatile global economic climate of the Napoleonic era, the increasingly stable and integrated domestic economy became irresistible to many Americans. While Americans continued to build a vibrant export trade, the Revolution and Depression of the 1780s catalyzed a domestic sector that had been slowly building for decades. Politico-economic overhauls, constitutional reformation, the activation of wartime distribution systems, and pent up entrepreneurial energy quickly made the domestic market the dominant driver of American economic growth. Scholars have long sought to understand the roots of the vast domestic sector that supported full-scale industrial expansion. Douglass C. North argued that, "Economic growth during the long swing 1823-1829 had set the scene for an industrial society by widening the market."[70] Yet while the 1820s certainly played a role in domestic market expansion, its roots ran much deeper. The dominant domestic economy of the 1790s and early 1800s not only fueled rampant growth in the Republic's first years, but it laid the groundwork for the integrated industrial behemoth that came to prominence in the nineteenth century.

Subsequent chapters outline how American merchants integrated markets, built commercial networks, and reformed their businesses to take advantage of the circumstances provided by the volatile early American commercial world. While many of the merchant-entrepreneurs discussed below staggered and sometimes failed, they viewed volatility as opportunity and worked to convert that opportunity into viable businesses. To survive in the Revolutionary age of uncertainty, American merchant-entrepreneurs made subtle yet radical changes to the way they allocated capital, mitigated risk, organized trade, and exerted political power. In so doing, these

[70] North, *The Economic Growth of the United States*, 204.

merchants built institutions, structures, and a profoundly capitalist culture that came to define American business.

Chapter 2

Crisis: Uncertainty and Growth

In the summer of 1785, John Chaloner of Philadelphia flirted with disaster on a daily basis. The value of Chaloner's urban properties, and the rent they generated, fell by over 30 percent in a year. The scarcity of cash, a constant problem in the early Republic, put Chaloner's daily mercantile operations in jeopardy. Over the previous nine months Chaloner lost numerous clients to bankruptcy, while defaulting on several creditors himself.[1] Desperate to diversify and acquire revenue streams, Chaloner leapt into small-scale manufacturing. His projects included a salt works and later, a snuff mill.[2] Both projects failed. By October, Chaloner reported to his friend Peter Colt that his business stood on the brink of collapse. "This is a summer of disasters," Colt replied, "but you must have patience. It is your only remedy."[3]

Disaster and patience marked Chaloner's career. After his immigration from England in the early 1770s, Chaloner joined the Continental Army commissariat during the Revolution. In so doing, Chaloner cultivated connections with some of the most prominent men of the age, including Alexander Hamilton, Robert Morris, Thomas Fitzsimons, Jeremiah Wadsworth, Benjamin Rush, and John Fenno.[4] Despite, or perhaps because of, his prominent contacts, Chaloner consistently found himself amid commercial crisis. After his business struggles during

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[1] Jeremiah Wadsworth to John Chaloner, October 16, 1784, Box 12, Folder 6, Chaloner and White Records, Historical Society of Pennsylvania; Peter Colt to John Chaloner, May 3, 1784, Box 12, Folder 3, Chaloner and White Records, Historical Society of Pennsylvania; Peter Colt to John Chaloner, May 6, 1785, Box 12, Folder 10, Chaloner and White Records, Historical Society of Pennsylvania; John Church to John Chaloner, July 20, 1785, Box 12, Folder 12, Chaloner and White Records, Historical Society of Pennsylvania; Grace Parr to John Chaloner, December 18, 1785, Box 12, Folder 14, Chaloner and White Records, Historical Society of Pennsylvania.
[2] Thomas M. Doerflinger, *A Vigorous Spirit of Enterprise: Merchants and Economic Development in Revolutionary Philadelphia* (New York: W.W. Norton and Company, 1986), 235-236; Nathaniel Shaler to John Chaloner, August 14, 1789, Box 12, Folder 27, Chaloner and White Records, Historical Society of Pennsylvania
[3] Peter Colt to John Chaloner, October 8, 1785, Box 12, Folder 13, Chaloner and White Records, Historical Society of Pennsylvania
[4] Doerflinger, *A Vigorous Spirit of Enterprise*, 235.

the 1780s, Chaloner became the most prominent venue master in Philadelphia. Unfortunately, his popular, twice-daily auctions at the City Tavern on Second Street in Philadelphia became ground zero for the Panics of 1791 and 1792. The unfettered trading of securities and other financial assets resulted in a market collapse, the nervous breakdown and suicide of several traders, and the first financial bailouts in American history. After the panics passed and the American economy resumed its vibrant growth path, Chaloner joined Robert Morris and several other prominent Philadelphians in extensive land speculation, the default on which helped spark the Panic of 1797. While Chaloner faded from the historical record after his wife Ann's death in 1801, some evidence suggest that he became an agent for large commodity merchants like Levi Hollingsworth.[5] If so, Chaloner would have faced the commodity market collapse that plagued the United States in the early 1800s. Yet despite Chaloner's experience with so much economic instability, records suggest that he weathered and learn from his failures. In so doing, Chaloner navigated the vicissitudes of currency scarcity, trade barriers, defaulting counterparties, and financial crisis to capitalize on America's commercial advantages.

As demonstrated in Chaloner's career, the early American economy leaves observers with two parallel and seemingly contradictory through-lines. First, the early Republic, and especially the period after the adoption of the Constitution in 1789, saw rapid economic development. As demonstrated in Chapter 1, US nominal GDP and GDP per capita grew at rates seldom seen anywhere in the world in the eighteenth century.[6] Yet, at the same time, this era

[5] While personal papers for Chaloner do not exist past the late 1790s, his name does appear in newspapers around the death of his wife Ann in mid-1801. Levi Hollingsworth does have substantial entries for "Chaloner" in several of his ledger books between the years 1804-1806. However, Hollingsworth does not include a first name. There were several other "Chaloners" in Philadelphia in the early 1800s, including a "Job Chaloner" who regularly appeared in the local press after 1800. Thus, wow it would make sense that John Chaloner would return to the commodities trade later in life, the evidence cannot conclusively prove that he worked with Hollingsworth in the flour trade.

[6] Paul A. David, "The growth of real product in the United States before 1840, New evidence, controlled conjectures," *Journal of Economic History* 27 (1967): 151-197; T.S. Berry, *Revised annual estimates of American gross national product, preliminary annual estimates of four major components of demand, 1789-1889* (Richmond,

produced extreme and relentless economic instability. Americans experienced constant financial panics, commercial crises, commodity price shocks, monetary and credit shortages, and geopolitical challenges, in addition to the sudden absence of the British imperial system in which they thrived for well over a century.

Despite the seeming contradiction of constant volatility and rampant economic growth, the instability of the early Republic kindled a raft of reforms that stimulated both short- and long-term economic development. The crises of the 1780s, 1790s, and early 1800s, combined with general volatility of prices, markets, and geopolitics, altered legal and governmental institutions, from the Constitution of the United States to changes in bankruptcy statutes. Federal era crises also consolidated capital stocks, which led to greater investment and the establishment of new financial institutions. Financial panics led to the beginnings of formalization and regulation of stock and bond markets, while establishing the federal government as a lender of last resort and guarantor of financial market stability. These crises also reoriented American commercial patterns, laying the groundwork for a broad and integrated domestic market. Finally, the macroeconomic instability of the period led American entrepreneurs to develop new business practices and information systems that led to declining price volatility and better long-term planning. The pressure-filled early Republic forced economic actors to make fundamental changes to the way they conducted, financed, and governed commerce. Crisis and volatility, not evolution and deliberation, forged a distinct and dynamic capitalist system in the United States.

The Depression of the 1780s

VA: Bostwick Press, 1978); Thomas Weiss, "US labor force estimates and economic growth, 1800-1860," in Robert E. Gallman and John J. Wallis, ed., *American economic growth and standards of living before the Civil War* (Chicago: University of Chicago Press, 1992).

While the Revolutionary War ravaged the American economy, citizens and merchants alike believed that peace would usher in economic restoration. The prospect of peace revitalized American consumers, and access to open markets combined with an influx of European credit inaugurated a commercial speculation boom in late 1783 and 1784. Merchants believed that pent-up demand after eight years of war would drive a consumption boom in America, and suppliers on both sides of the Atlantic raced to acquire stocks of consumer goods. As Richard Bushman articulates in *The Refinement of America*, genteel consumption had become a social touchstone in colonial America and merchants fully expected that culture died slower that political ties.[7] Americans acquired an unshakable taste for European consumer goods during the colonial era and the prospect of voracious postwar demand incentivized merchants to reach for supply before the war had even ended. The prospect of free access to global markets, combined with an unshakable faith in their ability to produce commodities for export, led Americans to believe that they would have sufficient capital to finance the resumption of their colonial consumption patterns.[8]

While the capital strictures discussed above remained as real as ever, three factors briefly hid the massive structural problems in the American economy. First, European producers built up large stocks during the war years, leading to gluts that lowered prices for American merchants speculating on a postwar boom. Secondly, European merchants who needed to reduce their inventory surpluses offered Americans generous long-term credit on par with that offered during the colonial era. The need to generate sales distracted from rigorous reevaluation of the new economic relationship between Americans and their former imperial partners. Thirdly, minimal

[7] Richard L. Bushman, *The Refinement of America: Persons, Houses, Cities* (New York: Vintage Books, 1993).
[8] Robert Bruce Bittner, "The Definition of Economic Independence and the New Nation" (Ph.D., The University of Wisconsin - Madison, 1970), 192-194.

conflict during late 1782 and 1783 led to a temporary glut of specie in the hands of American merchants. During the last year and a half of the war, French procurement officers pumped gold into the hands of American suppliers, many of whom were already looking to their postwar prospects. Sitting on swollen specie stocks and eyeing a post-Revolution consumption boom, American merchants with trans-Atlantic contacts suddenly held the specie to capitalize their postwar speculations.

Jeremiah Wadsworth of Hartford, Connecticut exemplified this trend. The Commissary General of the Continental Army and a future congressman, Wadsworth resigned from the Army in 1779 and partnered with John Barker Church to become the primary supplier of French forces in North America. With peace on the horizon, Wadsworth set sail for Europe in late July 1783 to investigate his postwar business prospects. Wadsworth crossed the ocean to "observe the conduct of foreign trade, visit sources of supply, measure markets abroad, acquaint himself with the great houses and merchant princes of France and England...[and] acquire a large and varied stock of European merchandise for the American market."[9] Like many of his counterparts, Wadsworth foresaw pent-up demand after years of material deprivation. Wadsworth believed that America's natural wealth and colonial export model could support the consumer demand that he intended to satiate.

Throughout late 1783 and early 1784, Wadsworth and Church binged on European goods and credit, convinced that American buyers would consume anything they sent home. In Paris, Wadsworth and Church purchased and shipped calicoes, chintzes, mantuas, prunellas, black worsteds, satins, and champaign worth nearly 170,000 livres to the care of their agent, John Chaloner in Philadelphia. The duo next went to England, from which they dispatched window

[9] John David Ronalds Platt, "Jeremiah Wadsworth, Federalist Entrepreneur" (Ph.D. Dissertation, Columbia University, 1955), 46.

glass, velvet, iron goods, and other products to contacts in New York and Philadelphia.[10] Flush with cash received from the French bills of credit they procured during the war, Wadsworth and Church speculated that the high prices for American exports would provide the capital necessary to sustain a long boom in postwar consumption.

The newfound commercial enthusiasm activated entrepreneurs across the new nation. In March of 1783, New York merchant Jonathan Lawrence worked tirelessly to establish a commercial connection with Dublin merchants, believing that Irish linens and other cotton goods would find heavy demand in the presumed postwar prosperity. Lawrence expressed confidence to Irishman Robert Stevenson, proclaiming, "Commerce [will] again be returned to its usual greatness," as he plied Stevenson for information on commodity prices in London, Amsterdam, and "the different parts of Europe."[11] Nicholas Brown of Providence formed a new, multi-hub partnership in late 1783, expressly to take advantage of the postwar opportunities in America. Capitalized at $10,000, Brown combined with Boston merchant George Benson and the London house Champion & Dickason to import "sundry Goods, Wares, and Merchandize" for sale in Providence, Boston, and Hartford.[12] Philadelphia's Clifford Family opened an extensive trade connection with Bristol merchants in late 1783, importing a myriad of cotton goods, glass and porcelain products, and printed material.[13] Thomas M. Doerflinger notes that "the usual aggressiveness of Philadelphia importers [and] the optimism of the Europeans ignited explosive growth in Philadelphia's dry goods trade."[14]

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[10] Platt, "Jeremiah Wadsworth, Federalist Entrepreneur," 52-53.
[11] Jonathan Lawrence to Ben Gault, March 5, 1784, Jonathan Lawrence Letterbook, 1783-1812, New York Historical Society; Jonathan Lawrence to Robert Stevenson, May 3, 1784, Jonathan Lawrence Letterbook, 1783-1812, New York Historical Society.
[12] Brown and Benson Co-partnership Agreement, May 1783, Box 24, Folder 4, Brown Family Business Records, The John Carter Brown Library at Brown University.
[13] Clifford & Company to John Clifford, 1784, Letter book pg. 25-26, Clifford Family Papers, Historical Society of Pennsylvania.
[14] Doerflinger, *A Vigorous Spirit of Enterprise*, 243.

The Southern states did not escape the import frenzy of late 1783 and 1784. Baltimore boomed in the years immediately following the war, with dozens of ships laden with London goods coming into its harbor in January and February of 1784 alone. Historian Louis Magazin quotes Alexander Hamilton, a Piscataway, New Jersey merchant living in Baltimore, saying that "large quantities of goods are expected this Spring & Summer by the Citizens of this State, from London, many of whom were never in business before. Obviously, even novices expected to cash in on the profits I expected from trade."[15] Richmond, Virginia saw dramatic activity as well. The surge in merchants and related artisans flooding into the city drove rents to unprecedented levels, to the point where a public official lamented that he could not afford to live in the city on his meager salary. "The enormous importation of foreign merchandise after the peace," a Virginia merchant wrote, "created a considerable bustle and gave appearance of business to our several towns."[16] In sum, the dramatic and speculative drive to capitalize on the prospects of peace seized coastal centers across the new nation in late-1783 and early-1784. A temporary surge of English credit and pent up American demand led merchants to speculate wildly on America's peace dividend.

Despite the surge in consumer confidence, Americans could not outrun the structural defects in their economy. By mid-1784, the beginnings of what became the Depression of the 1780s interrupted Americans' conceptions of an easy return to colonial prosperity. Inventory gluts, adverse weather, credit pullbacks, and monetary scarcity all hammered the American economy in late-1784 and 1785, resulting in what Irving Fisher called in 1933 a "debt-deflation

[15] Louis Magazin, "Economic Depression in Maryland and Virginia: 1783-1787" (Ph.D. Dissertation, Georgetown University, 1967), 19.
[16] Ibid, 7.

cycle."[17] Briefly put, Fisher and recent economist Ben Bernanke explained how deflationary pressures form a self-reinforcing cycle in which falling prices negatively impact the labor market and investment, while causing widespread bankruptcies, all of which lead to greater deflation and systemic collapse. By late-1784, Americans found themselves in what Thomas K. McCraw has called "the worst decade in American history except for the 1930s."[18]

The first problem in the American economy came from its saturated markets for both import and export goods. By mid-1784, merchants across the nation reported that the deluge of imports had more than restored their deficient inventories. In June of 1784, William Ferguson of Charleston reported that "this market [was] as glutted with every article of our produce as to effectually prevent a sale."[19] Merchants in Queen Anne's County and Baltimore, Maryland reported superfluous stocks of molasses and other French imports.[20] New England faced similar problems as Plainfield, Rhode Island shopkeeper Hutcheson Farlan reported to George Benson of Boston that, "This Country is Exceedingly full of goods" to the point that "if trade was Reduced to one half of what it is now in Dry Goods it might afford a handsom living."[21] As the country's largest port city, Philadelphia suffered most from the market gluts. On May 21, 1784, Nalbro Frazier reported to London's Thomas Dickason that "great Qtys have already arrived this Spring and many more expected, the market is now overstock'd and what we shall do with the

[17] Irving Fisher, "The Debt-Deflation Theory of Great Depressions," *Econometrica* 1 (1933): 337-57. In Ben Bernanke, "The Macroeconomics of the Great Depression: A Comparative Approach," *Journal of Money, Credit, and Banking* 27 (1995): 1-28, Bernanke made the counter-argument that a sufficiently severe debt-deflation cycle would produce adverse effects on output and employment, both of which *could* produce depression.
[18] Thomas K. McCraw, *The Founders and Finance: How Hamilton, Gallatin, and Other Immigrants Forged a New Economy* (Cambridge, Mass: Belknap Press of Harvard University Press, 2012), 47.
[19] William Ferguson to Levi Hollingsworth, June 1, 1784, Box 23, Folder 2, Hollingsworth Family Papers, Historical Society of Pennsylvania.
[20] Wederstrandt to Levi Hollingsworth, June 1, 1784, Box 23, Folder 2, Hollingsworth Family Papers, Historical Society of Pennsylvania; Benjamin Snow & Company to Brown and Benson, August 24, 1784, Box 366, Folder 2, Brown Family Business Records, The John Carter Brown Library at Brown University.
[21] Hutcheson Farlan to Brown and Benson, March 16, 1785, Box 366, Folder 7, Brown Family Business Records, The John Carter Brown Library at Brown University.

remainder God knows. I fear, my friend," Frazier continued, "this Glut of the market will prevent your Correspondents from making those remittances which you expect on Time."[22]

Frazier's letter to Dickason displays the two principal dangers that glutted markets inflicted on the American economy. First, the excess stocks force down prices, often violently. Even by June of 1783, William Constable wrote that the market had become so glutted that he could not sell "the immense quantities of all kinds of merchandize which daily arrive…even at first cost."[23] Angry creditors demanded that merchants sell into the declining market to acquire cash, which only exacerbated falling prices. Constable pleaded with Dutch merchant Gabriel Tegelaar to "make no more shipments," claiming that they would only exacerbate the massive gluts already in Philadelphia. "The rage of adventure seems to have seized all Europe, we are deluged with products and manufactures, and our merchandize is selling at first costs."[24] With merchants competing to sell at prices already below their marginal costs, prices and revenues could only fall further. Irving Fisher identified this spiral in "The Debt-Deflation Theory of Great Depressions"—as revenues fall and debts remain constant, an increase number of market players become insolvent and fail.

Glutted markets afflicted the American export sector as well. With revenues from incoming goods falling daily, merchants hoped that increased export sales would make up the difference. Unfortunately, stocks of agricultural commodities built up during the last year and a half of the Revolution, meaning that American flour, tobacco, rice, and grain commanded little revenue once foreign markets reopened. Merchants from Charleston to Boston complained that

[22] Nalbro Frazier to Thomas Dickason, May 21, 1784, Nalbro Frazier Letter book, 1783-1799, pg. 76, New York Public Library.
[23] William Constable to Gabriel Tegelaar, June 1, 1783, William Constable Letter book, 1782-1790, pp. 52-53, New York Public Library.
[24] Ibid.

their export goods failed to command sufficient revenue as prices across Europe tumbled during 1784 and 1785.[25] While a number of enterprising traders like Baltimore's Benjamin Snow sought to take advantage of low commodity prices by purchasing goods in glutted markets and selling them in higher-price cities, these arbitrage scenarios often fell victim to the segmented nature of American markets. Poor communication between markets, high transportation costs, and trade barriers between the various states prevented market actors from successfully equalizing prices on a national level. In the end, Nalbro Frazier's lament that "the produce of that part of our Country which we can export is now so high certain I am it will not pay a Freight" exemplifies the deflationary effect of export gluts on American income.[26]

In addition to the deflationary effects of glutted markets, fundamental problems in American money and credit markets resulted in stagnant commerce and exacerbated falling prices. The United States's monetary problems began before the Revolutionary War ended. As seen in Figure 2.1, the wartime inflation turned to deflation in 1782 as the result of Congressional desertion of the ill-fated Continental. After dramatic devaluation of the Continental through mid-1780, Congress ceased re-issuing Continentals and deputized the states to convert old Continental currency into new, interest-bearing securities. However, citizens only converted about half of the Continentals into the new notes, resulting in a significant reduction in the money supply. By mid-1781, Congress had completely abandoned the Continental. While this cutback halted inflation, the new nation found itself amidst significant monetary scarcity when the war ended.[27]

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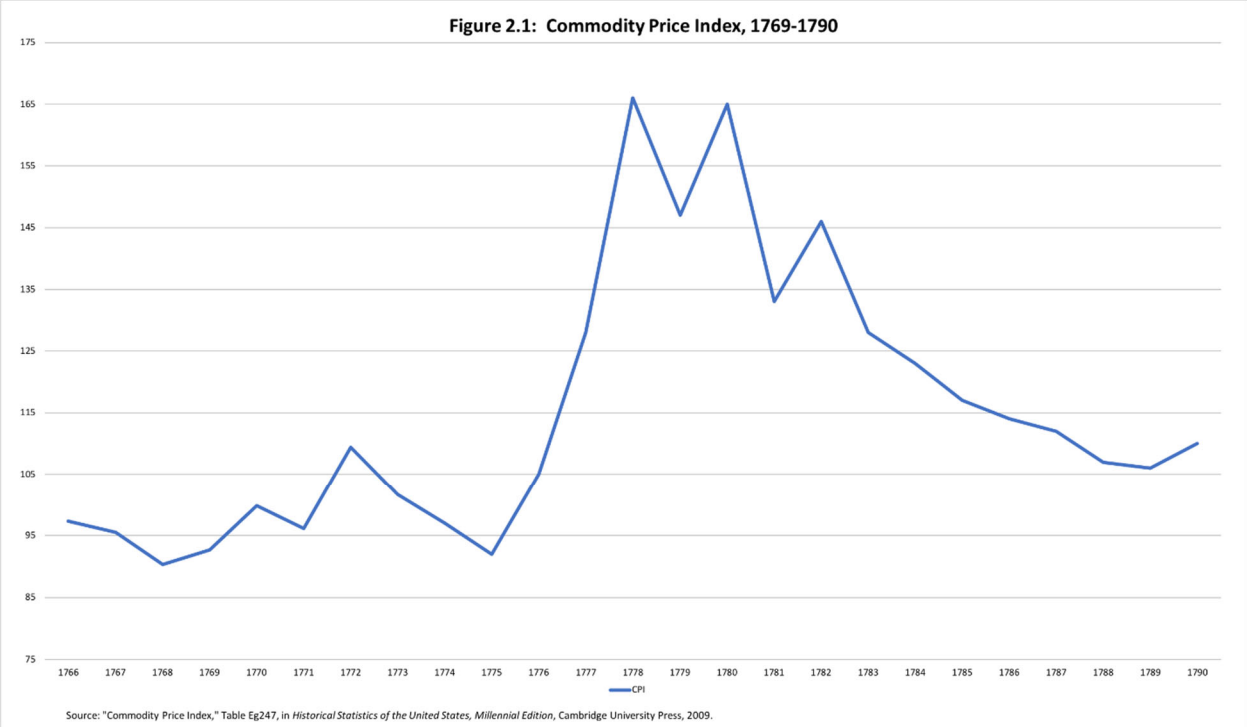
[25] William Ferguson to Levi Hollingsworth, June 1, 1784, Box 23, Folder 2, Hollingsworth Family Papers, Historical Society of Pennsylvania; Benjamin Snow & Company to Brown and Benson, August 24, 1784, Box 366, Folder 2, Brown Family Business Records, The John Carter Brown Library at Brown University; Robert A. East, *Business Enterprise in the American Revolutionary Era* (Gloucester, Mass.: Peter Smith, 1964), 244.
[26] Nalbro Frazier to [illegible], Nalbro Frazier Letter book, 1783-1799, pg. 60, New York Public Library.
[27] Edward G. Gray and Jane Kamensky, ed. *Oxford Handbook of the American Revolution* (New York: Oxford University Press, 2015), 333-334; Francis D. Cogliano, *Revolutionary America, 1763-1815: A Political History*



Without a viable paper option and with foreign coin hard to find, monetary scarcity became a central problem for the postwar American economy. Under pressure from creditors, merchants sent their remaining specie to Europe as payment for the large quantities of manufactured goods that Americans imported after the war. While the wartime inflationary pressure caused its own problems, the absence of money restricted the day-to-day transactions on which economies depend. After lamenting the total lack of money in New York, Jonathan Lawrence told *Murray Samson & Co.* that "Spirit of [deflation] has so gone forth that we find it Exceedingly difficult in this Country to Sell without coming into that mode."[28]

Lawrence also lamented how monetary scarcity prevented the repayment of debts. "Money being exceedingly drained from here," Lawrence wrote, "often occasions

(New York: Routledge, 2017), 91-92; Farley Grubb, "The Continental Dollar: Initial Design, Ideal Performance, and the Credibility of Congressional Commitment," Working Paper, accessed at http://eh.net/eha/wp content/uploads/ 2013/11/Grubb.pdf.

[28] Jonathan Lawrence to Murray Samson & Co., December 16, 1784, Jonathan Lawrence Letterbook, 1783-1812, New York Historical Society.

disappointments which were unexpected at the time debts were Contracted."[29] Lawrence repeatedly told creditors that he did not lack the will to pay his debt, but merely the capacity to do so. As a creditor himself, Lawrence urged Henry G. Livingston to "at least make it convenient to pay me some part of the money at the time it becomes due" so that Lawrence could offer the same to his creditors in Europe. "This disappointment, and doubtless others in the same predicament," Lawrence pleaded with Livingston, "will be exceedingly injurious to me as my business depends entirely on the support of my Creditt abroad. Therefore, many such capital disappointments must be ruinous to me."[30] Whether merchants like Lawrence were illiquid or insolvent did not matter to their European creditors—the repeated failure to remit payments threatened American credit with European houses.

As European institutions pulled back credit due to the lack of remittances from America, the European credit market experienced its own endogenous shock. In late-1782, British merchants began preparing for a renewal of trade with America by withdrawing coin from the Bank of England (BoE) and other British financial institutions. This resulted in a dramatic decrease in the BoE's bullion reserves and drawing accounts.[31] To stem the outward flow of gold coin, the BoE cut back discounts in late-1783 and 1784, which had a contractionary effect on the British credit system.[32] At the same time, postwar demand for foreign goods led to a rare equalization of British exports and imports, meaning that the British economy did not receive specie inflows at the high levels to which it had become accustomed. Historian Robert Bruce Bittner argues that "the British consumer siphoned off the money normally offered to the foreign

[29] Ibid.
[30] Jonathan Lawrence to Henry G. Livingston, April 20, 1785, Jonathan Lawrence Letterbook, 1783-1812, New York Historical Society.
[31] John Clapham, *The Bank of England, Volume 1, 1694-1797* (New York: The Macmillan Company, 1945), 296-297; Bank of England bullions reserves fell from £2,158,000 in February of 1782 to just £590,000 in August of 1783.
[32] Clapham, *The Bank of England*, 255-257.

purchaser in credit," resulting in a severe cutback in the funds available to American merchants.[33] In sum, the BoE discount pullback, decline of British specie inflows, and the boom in British consumer borrowing created a severe stringency in American credit markets in 1785 and 1786.

The mid-1780s British credit crunch created extensive problems for American merchants. Interest rates in major American port cities rose rapidly in 1785, registering at well above 10 percent, even for those with quality collateral.[34] The combination of money scarcity and credit contraction impacted economic actors both urban and rural. Anthony L. Bleeker of New York told London merchant Thomas Blaine that "as credit has become exceedingly scarce and business very dull, they shopkeepers, country dealers, &c. are very cautious and backwards in buying; and it is really very difficult to make sales to any tolerable advantage, especially when immediate payment is required."[35] Caleb Carmalt of Philadelphia reported that the interlinked scarcities of money and credit impacted "people of all Ranks." As export merchants lost business and eventually went into bankruptcy, unemployment amongst working-class artisans and laborers such as rope makers and longshoremen spiked.[36]

Americans' inability to remit funds to British merchants only exacerbated the credit crunch. In December of 1785, Edward Dowling of London demanded that Boston merchant John Amory Sr. immediately remit whatever cash he could muster. Dowling wrote that London banks, already shaken by the crunch, had begun to view his American partners as credit risks.[37] In this

[33] Bittner, "The Definition of Economic Independence and the New Nation," 80-81.
[34] East, *Business Enterprise in the American Revolutionary Era*, 242.
[35] Thomas Blane to Anthony L. Bleeker, May 29, 1786, Anthony L. Bleecker Letterbook, 1767-1787, New York Historical Society.
[36] Caleb Carmalt to Samuel Meredith, June 18, 1785, Box 10, Folder 7, Clymer-Meredith-Read Family Papers, New York Public Library.
[37] Edward Dowling to John Amory Sr., December 7, 1785, Box 52, Folder 4, J. and J. Amory Business Papers, Barker Library at Harvard Business School.

way, Jonathan Lawrence's concern that his inability to remit payment would be "ruinous to my credit abroad" proved both accurate and universal. The monetary and credit crises, intertwined with the pervasive glut in export commodities, created a deflationary monster that threatened to sink individual merchants and sunder the broader American economy.

Between 1784 and 1786 the United States economy exemplified the debt-deflation cycle as firms and individuals failed in large numbers. Prices fell month after month, resulting in real debt increases due to deteriorating revenue streams and sticky debt obligations. David Lamb of Charleston reported largescale bankruptcies in his city in May 1785, owing them to the general scarcity of money and delinquent debt payments.[38] Likewise, historian Louis Magazin has demonstrated that falling commodity prices resulted in widespread bankruptcies across Maryland and Virginia during the same period. On July 4, 1786, the *Maryland Journal* reported that "the value of our Wheat has fallen [and thus] our property is at the mercy of sheriffs and collectors."[39]

The middle colonies and New England suffered a bankruptcy crisis just as violent as the one that hit the southern states. Historian Thomas M. Doerflinger argues that a "parade of bankruptcies" afflicted Philadelphia during the mid- and late-1780s, shrinking Philadelphia's merchant community by 14 percent between 1785 and 1791.[40] Nalbro Frazier obsessed over the cascading failures in 1784 and early-1785, noting that "such as scene of Villany has not for a long time before been exhibited in our City." The failure of Philadelphia firms Stuyter & Co. and Basse & Soyer on July 1, 1784 resulted in "the Partners of each [firm] retreating to our City Gaol" and sent the Philadelphia commercial community into a frenzy. Merchants, including Frazier, scrambled to hedge their exposure to the failures. Upon hearing the news, Frazier

[38]David Lamb to Robert Henderson, May 12, 1785, Robert Henderson Letterbook, pg. 37, Robert Henderson Papers, Historical Society of Pennsylvania.
[39] Magazin, "Economic Depression in Maryland and Virginia," 57.
[40] Doerflinger, *A Vigorous Spirit of Enterprise,* 246-247.

immediately dispatched partners to New York and Baltimore to secure as much liquid capital as possible, rightly predicting that the bankruptcies would instigate further credit contraction and send specie into hiding.[41] Benjamin Fuller of Philadelphia foresaw that "many Bankruptcies must take place in the course of a year or two."[42] Historian Bruce M. Mann reports that creditors in Philadelphia filed at least 184 bankruptcy petitions against firms alone between 1785 and 1789. New York saw a similar, if not greater, number of the bankruptcy actions.[43] Mann also argues that other cities would have experienced bankruptcy procedures on a similar scale had they had bankruptcy statutes on the books. John Amory reported similar scenes in Boston and Rhode Island throughout 1785, writing to Samuel Rodgers on October 28, 1785, "Almost a year is now elapsed since our [illegible] & our affairs bear much worse than they did at that time…Our debts if not called, naturally grow more and more from Deaths and Failures."[44]

The cascading pyramids of debt, bankruptcy, default, and deflation affected rural as well as urban populations. Richard Cranch of Massachusetts reported that defaults and the subsequent price collapse "brought many of our Country People into very difficult Circumstances, and rendered them unable to pay their Debts and Taxes with Punctuality: the Consequences of which has been a great increase of Law-suits, Failures, [and] Abscondings in all our Counties."[45] Legal historian George William Van Cleve observes that Massachusetts experienced an explosion of debt litigation during the mid-1780s. "In Hampshire County alone in 1784," Van Cleve notes,

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[41] William Nimmo to Robert Henderson, June 8, 1785, Robert Henderson Letterbook, Robert Henderson Papers, Historical Society of Pennsylvania; Daniel Broadhead to Robert Henderson, June 11, 1785, Robert Henderson Letterbook, Robert Henderson Papers, Historical Society of Pennsylvania.
[42] Benjamin Fuller to Daniel and Mildred," June 24, 1784, Benjamin Fuller Letter book, Historical Society of Pennsylvania.
[43] Bruce M. Mann, *Republic of Debtors: Bankruptcy in the Age of American Independence* (Cambridge: Harvard University Press, 2009), 177-178.
[44] John Amory to Samuel Rodgers, October 28, 1785, Box 50, Folder 1, J. and J. Amory Business Papers, Barker Library at Harvard Business School.
[45] Richard Cranch to John Adams, October 13, 1785, in George William Van Cleve, *We Have Not a Government: The Articles of Confederation and the Road to the Constitution* (Chicago: The University of Chicago Press, 2017), 40-41.

"there were nearly 3,000 debt cases, a 262 percent increase over the period 1770-72."[46] Historian Jane Kamensky argues that "in the years following the American Revolution, commercial failures and bankruptcies became discouragingly common. As much as Americans in the young republic wanted to believe they would succeed in their business ventures," Kamensky writes, "stories of failure were all too frequent. Jails began to overflow with debtors, many commercial leaders rose and fell several times over their careers, and scholars estimate that one in every five households could expect to face insolvency at least once."[47]

The American debt-deflation epidemic also afflicted British firms. On February 7, 1785 London's Harrison, Ansley, & Co. told John Amory Sr. that the number of British exporters would certainly "be curtailed" due to bankruptcies. American gluts resulted in "Goods [selling for] cheaper than the manufacturers could make them, which was a matter of surprise to many until they [had been] undone by the numerous failures & Bankruptcies that have lately happened."[48] An unidentified correspondent told Amory that "many [merchants] have broke in debt some hundreds of Thousands of Pounds and have ensnared others in their ruin so that it has brought a general distress & an almost total stagnation of business."[49] While the industrial producers in the North of England like Arkwright, Peel, Livesey Hargreaves & Co. remained relatively unaffected, a large section of the British merchant community suffered heavy, cascading losses due to the American debt-deflation cycle.[50]

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[46] Van Cleve, *We Have Not a Government*, 41.
[47] Jane Kamensky, *The Exchange Artist: A Tale of High-Flying Speculation and America's First Banking Collapse* (New York: Viking, 2008), 10-13.
[48] Harrison, Ansley, & Company to John Amory Sr., July 18, 1788, Box 53, Folder 3, J. and J. Amory Business Papers, Barker Library at Harvard Business School.
[49] Ibid.
[50] Stanley Chapman, *Merchant Enterprise in Britain: from the Industrial Revolution to World War I* (Cambridge: Cambridge University Press, 1992), 53.

In addition to causing widespread bankruptcies, America's postwar debt-deflation cycle resulted in a collapse in investment. As mentioned above, the British credit crunch during the 1780s resulted in rising nominal interest rates in the United States. However, deflationary pressure compounded the problem by raising real interest rates as well. In short, interest rates tend to be "sticky," meaning that they move slower than consumer prices. In this scenario, revenues fall faster than interest rates can respond to changes in the demand for credit, and thus real interest rates can rise even in times of mild deflation. However, when significant deflation met exogenous credit shocks, as happened in the 1780s, real interest rates sky rocket because revenues fall just as nominal interest rates rise. The outcome is real interest rates that very few can afford to pay, resulting in falling investment at a time that the economy needs it most.

A lack of credit pervaded the postwar American economy, from small-scale producers to large merchant traders. In May and June of 1784 Jeremiah Wadsworth instructed his deputy Peter Colt to invest a significant amount in Philadelphia's troubled Bank of North America (BNA), but Colt failed to do so because he could not raise the necessary capital.[51] Despite Wadsworth and Colt's close ties to the Hartford and New York merchant community, Colt told John Chaloner that he could procure "no money for that Purchase" and hoped Chaloner could help find a solution. Likewise, Thomas Hollingsworth sought to invest in low-priced flour in Baltimore, but could not finance the purchase. "Since our residence here," Hollingsworth wrote to his brother and partner Levi, "Business has never been so dull, cash so scarce nor credit so dangerous."[52] Hollingsworth's situation exemplified how money and credit scarcity only

[51] Peter Colt to John Chaloner, May 3, 1784, Box 12, Folder 3, Chaloner and White Records, Historical Society of Pennsylvania; Peter Colt to John Chaloner, May 10, 1784, Box 12, Folder 3, Chaloner and White Records, Historical Society of Pennsylvania.
[52] Thomas Hollingsworth to Levi Hollingsworth, June 5, 1784, Box 23, Folder 2, Hollingsworth Family Papers, Historical Society of Pennsylvania.

ensconce commodity gluts. Since entrepreneurs cannot finance purchases of the superfluous, low-cost commodity—thus introducing increased demand pressure and removing excess supply— gluts fail to properly equalize.

Even those aiming to invest in the production side of the economy struggled to acquire the necessary capital. Nathaniel Shaler sought to build a snuff mill near Middletown, Connecticut, even going so far as to having a "Mr. Town" draw up plans complete with a list of "necessary machinery." Unfortunately, Shaler's agent John Chaloner reported that he could not acquire the funds at reasonable rates.[53]

Further south in Philadelphia, Levi Hollingsworth labored to operationalize what he believed could be a flour production empire. However, Hollingsworth's network of small producers, for whom he served as agent, marketer, and exporter, struggled to build the capacity needed to compete on a global scale. Thomas Evans, owner of the morbidly-named Murderkill Mill, hoped to increase his production by rebuilding a mill that had been damaged during the war. Constrained by low flour prices and expensive credit, Evans begged Hollingsworth to help him acquire financing. "I am about rebuilding this mill," Evans wrote to Hollingsworth on May 25, 1784, "but money is so scarce here that I can't get a shilling for anything I sell so that I can't possibly carry on the Building without you."[54] On the same day, mill owner William Shields of Drumore, Pennsylvania, reported to Hollingsworth that he would liquidate his mill because he could no longer operate without the capital investment to increase productivity.[55] In a similar case, Caleb Carmalt of Philadelphia intended to build a new flour-shipping wharf on the

[53] Nathaniel Shaler to John Chaloner, August 14, 1789, Box 12, Folder 27, Chaloner and White Records, Historical Society of Pennsylvania.
[54] Thomas Evans to Levi Hollingsworth, May 25, 1784, Box 23, Folder 1, Hollingsworth Family Papers, Historical Society of Pennsylvania.
[55] William Shields to Levi Hollingsworth, May 25, 1784, Box 23, Folder 1, Hollingsworth Family Papers, Historical Society of Pennsylvania.

Delaware River but could not move forward with the project due to the lack of available credit.[56] Similar cases saturate the papers of merchants and commodity producers up and down the eastern seaboard. Despite abundant natural wealth, capital and money scarcity, and the deflationary spiral that resulted from it, obstructed Americans' path to commercial prosperity.

Solutions from Desperation

Throughout the 1780s, commodity gluts, monetary scarcity, credit shocks, and a vicious debt-deflation cycle resulted in largescale GDP per capita declines and stalled American economic development.[57] As a result, the Depression of the 1780s forced entrepreneurs and policy makers to make a series of fundamental changes to the American economic system. These changes—not simply changing macroeconomic circumstances—paved the way for widespread economic growth during the 1790s and early 1800s. The reforms of the 1780s resulted from both deliberation and evolution—the product of conscious design and spontaneous order. Meticulously planned banks leveraged capital released by Depression-era bankruptcies. Then, new government debt provided an outlet for that consolidated capital, creating a historical symbiosis between cyclical forces, private industry, and government policy.

While scholars have long focused on political and socio-cultural causes of the Constitution, the Depression of the 1780s played a critical if not preeminent role in bringing the delegates to Philadelphia in May of 1787.[58] After all, Congress commissioned the Annapolis

[56] Caleb Carmalt to Samuel Meredith, May 31, 1784, Box 10, Folder 17, Clymer-Meredith-Read Family Papers, New York Public Library.

[57] McCusker and Menard poignantly claim of the 1780s, "Clearly, if the result of current research stand future scrutiny, something 'truly disastrous' happened to the American economy between 1775 and 1790... the level of performance of the economy of the United States over that decade and a half fell by 46 percent...As a point of reference, during the Great Depression, between 1929 and 1933, real per capita gross national product declined by 48 percent. The colonists paid a high cost for their freedom" (McCusker and Menard, *The Economy of British America, 1607-1789*, 374).

[58] For well over a century, scholars have analyzed the Constitution of the United States for its profound political and social significance. Few documents in modern history have been subjected to more historical analysis. Nonetheless, economic analyses of the Constitution have rarely drawn major attention. Even when attempted, studies like Charles

Convention of 1786, which predated and led to the Convention, to evaluate "the trade and commerce of the United States, [and] to consider how far a uniform system in their commercial intercourse and regulations might be necessary to their common interest and permanent harmony."[59] Stuck in a deep economic depression, Congress understood the deleterious effects of the United States' segmented and incongruous market. The lack of market integration, meaning the degree to which local markets connected with others to distribute goods and capital, smooth price spikes, and transmit information, only exacerbated the debt-deflation cycle that plagued the economy of the 1780s. Despite being political in nature, the Constitution helped solve America's market integration problem, thus allowing goods and capital to flow more easily to the areas that needed it most.

As noted in Chapter 1, the previously isolated 13 colonies began a rapid commercial integration after the Seven Years War.[60] The intellectual and physical remnants of a continental war and the new supply networks needed to supply it resulted in a 149 percent coastwise trade growth between 1766 and 1772. The Revolutionary War arrested this trend by shutting down nearly all exports to domestic and foreign markets. However, the integration of American markets did not resume with the establishment of peace in 1783. Whereas colonial American ports fell under the purview of the British Empire and thus enjoyed relatively free trade between themselves, post-Revolutionary American states stood as sovereign entities capable of making

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Beard's *An Economic Interpretation of the Constitution of the United States* and the more recent *Unruly Americans and the Origins of the Constitution* and *Stumbling Toward the Constitution: The Economic Consequences of Freedom in the Atlantic World*, by Woody Holton and Jonathan M. Chu respectively, have emerged at works of political economic rather than business or economic history. Despite the undoubted significance of the politico-economic literature, scholars have missed the economic importance of the Constitution as a market-making mechanism that created a vast and integrated commercial entity.

[59] Annapolis Convention Resolution, September 11, 1786, accessed at http://avalon.law.yale.edu/18th_century/annapoli.asp.

[60] For more on this, see Chapter 1, pp. 50-52.

and enforcing their own commercial policy.[61] Existing in a pre-Smithian world and desperate to raise revenue, the newly-independent states began erecting widespread trade barriers against each other upon the advent of peace with Great Britain.[62]

With a mercantile presence in states from South Carolina to Massachusetts, Nicholas Brown and George Benson grew increasingly concerned as states began erecting trade barriers. In July 1784, agent Ezekiel Robins of New York warned Brown of "the State of N Jersey laying a heavy duty on Iron exported from that, to any other State," potentially crushing the mid-Atlantic processed metal trade.[63] Likewise, on March 4, 1785 Benson informed Brown that the Massachusetts legislature would soon "levy an impost or Duty of 25% on every Article of Merchandize sent into this from any of those states who refuse a compliance with the requisition of Congress for establishing the 5% impost."[64] Since almost three-quarters of American states opposed the 5 percent impost, including Brown's native Rhode Island, a massive trade barrier would soon divide New England. In response, the Rhode Island legislature enacted a raft of tariffs that varied based on the impost regime of the incoming ship's home state.[65] In short, Rhode Island retaliated against Massachusetts's 25 percent impost with a new duty regime of its

[61] For most of the colonial era, the North American colonies faced minimal barriers to trade between themselves. Under the three principle Navigation Acts (1651, 1660, and 1673) and subsequent legislation, colonial exporters experienced dozens of imperial directives on the composition, direction, and methods of trade. However, this imperial regime also "encircled" British dominions in a trade blocks that forbid discriminatory trade practices among themselves. For more on this see Jacob M. Price, *Capital and credit in British overseas trade: the view from the Chesapeake, 1700-1776* (Cambridge, Mass.: Harvard University Press, 1980) and Jacob M. Price, *The Atlantic frontier of the thirteen American colonies and states: essays in eighteenth century commercial and social history* (Brookfield, Vt. : Variorum, 1996); Emory R. John, *History of Domestic and Foreign Commerce of the United States* (Washington, D.C.: Carnegie Institution of Washington, 1915), 35-52.

[62] John, *History of Domestic and Foreign Commerce of the United States*, 132-144; Ben Baack, "The Economics of the American Revolutionary War," Working Paper, https://eh.net/encyclopedia/the-economics-of-the-American-revolutionary-war-2; Roger H. Brown, *Redeeming the Republic: Federalists, Taxation, and the Origins of the Constitution* (Baltimore: Johns Hopkins University Press, 1993).

[63] Ezekiel Robins to Nicholas Brown, July 20, 1784, Box 366, Folder 1, Brown Family Business Records, The John Carter Brown Library at Brown University.

[64] George Benson to Nicholas Brown, March 4, 1785, Box 44, Folder 10, Brown Family Business Records, The John Carter Brown Library at Brown University.

[65] Nicholas Brown to George Benson, March 10, 1785, Box 44, Folder 10, Brown Family Business Records, The John Carter Brown Library at Brown University.

own. Nalbro Frazier also fretted about the burden of intra-state trade barriers, telling William Price of London, "indeed, the present time is a very precarious one, for the Acts of states [laying] such restrictions on our Trade will be attended with similar ones here."[66] All of these competing trade barriers effectively shut down domestic market integration amongst the American states, to the point where historian Cathy Matson observes, "paradoxically, then, the activism of state interests that sought to set commerce on a prosperous footing, left American commerce as 'passive'--as ineffectual--as the discrimination of foreign nations against Americans had. Americans were no more independent during the 1780s than they were under mercantilism in the British Empire."[67]

The segmented market in the new United States also exacerbated the import and export gluts and money scarcity that drove the Depression of the 1780s. Many enterprising merchants sought to equalize stocks of goods and money through the process of arbitrage—that is transferring assets from a depressed market to a higher-price market, thus relieving supply pressures and inflating prices in the glutted city. For example, *Benjamin Snow & Co.* sought to purchase low-cost Baltimore flour in August 1784 and sell it in New England where prices were higher. Unfortunately, high import duties and transportation costs made such a voyage unprofitable.[68] Likewise, in March 1785 Brown & Benson wanted to purchase pimento for shipment to the Netherlands in New York's glutted markets, but uncertainty surrounding New York export fees prevented the firm from moving forward.[69] Since commodities could not easily

[66] Nalbro Frazier to William Price & Company, November 29, 1783, Nalbro Frazier Letter book, 1783-1799, pp. 44-45, New York Public Library.
[67] Cathy Matson, "Liberty, Jealousy, and Union: The New York Economy in the 1780s," in Paul A. Gilje and William Pencak, ed., *New York in the Age of the Constitution* (London: Associated University Presses, 1992), 138.
[68] Benjamin Snow & Company to Brown and Benson, August 24, 1784, Box 366, Folder 2, Brown Family Business Records, The John Carter Brown Library at Brown University.
[69] George Benson to Nicholas Brown, March 14, 1785, Box 44, Folder 10, Brown Family Business Records, The John Carter Brown Library at Brown University.

move within the United States, currency could not flow to areas in greater need of it. While specie from French procurement officers built up in a few select areas in 1783 and early-1784, the lack of domestic trade resulted in the cash being shipped back to Europe in return for dry goods.[70] In sum, the segmented American market both caused and exacerbated commodity gluts and money shortages during the Depression of the 1780s. "That unequaled spirit of enterprise," Matson writes, "which signaled the genius of the American merchants and navigators, and which is in itself an inexhaustible mine of national wealth, would be stifled and lost' in the absence of wise governance."[71] In other words, segmented American markets posed a political problem and only a political act could rectify it.

Amongst many things, the Constitution of 1787 created a unified American trade block. By vesting all power to "to regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes" with the Federal congress and stipulating that "No Preference shall be given by any Regulation of Commerce or Revenue to the Ports of one State over those of another: nor shall Vessels bound to, or from, one State, be obliged to enter, clear, or pay Duties in another," the Constitution addressed a primary source of American economic malaise during the 1780s. The Constitution also abolished separate state currencies and thereby reduced exchange rate fluctuations that made monetary fluidity so difficult during the colonial and confederation eras.[72] In subsequent years, Alexander Hamilton's plan for the federal government to assume state debts only further integrated the domestic market by removing states' need to compete for revenue. In sum, the framers of the federal Constitution, in reaction the economic crisis of the 1780s created a politico-economic framework that allowed American resources,

[70] Jonathan M. Chu, *Stumbling Toward the Constitution: The Economic Consequences of Freedom in the Atlantic World* (New York: Palgrave Macmillan, 2012), 6.
[71] Matson, "Liberty, Jealousy, and Union: The New York Economy in the 1780s," 136.
[72] Constitution of the United States, Article 1, Sections 8 and 9.

capital, and labor to flow seamlessly between the states. In sum, "The primary commercial advantage of federal union," Matson concludes, "[was] to prevent gluts, scarcities, and unrealized demand in states with less mature capabilities to conduct trade."[73]

In addition to sparking institutional reforms that helped integrate the American domestic market, the Depression of the 1780s consolidated America's capital stock and facilitated much-needed investment. Many historians of early America have ascribed slow late-colonial and Confederation era economic development to the problem of capital scarcity.[74] However, as Douglass C. North and Stuart Bruchey have rightly shown, the terms of late-colonial and early American trade largely favored American merchants, meaning that "a greater rise in export than import prices permitted a given quantity of American goods to command a larger quantity of foreign goods." In simpler terms, this meant that Americans imported growing sums of capital in real terms, "which could," according to Bruchey, "be released for purposes of domestic capital formation."[75] Thus, the new United States did not lack potential capital flows, but rather the capital consolidation to stimulate economic development.

As far back as David Hume, economic thinkers have understood the importance of capital accumulation and consolidation. In fact, unconsolidated funds tend to introduce inflationary pressure and encourage consumption rather than investment, the latter of which the postwar economy desperately needed. "Capital dispersed about the country in modest amounts," writes Stanley Elkins and Eric McKitrick, "would not really act as capital, not being readily mobilizable for economic development. It would do little more than raise prices as people spent it."[76] The

[73] Matson, "Liberty, Jealousy, and Union: The New York Economy in the 1780s," 138.
[74] John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill: The University of North Carolina Press, 1985), 237 & 260.
[75] Bruchey, *The Roots of American Economic Growth*, 142.
[76] Stanley Elkins and Eric McKitrick, *The Age of Federalism: The Early American Republic, 1788-1800* (New York: Oxford University Press, 1994), 118.

late-colonial and early Republican economic system exemplified capital dispersion. The American mercantile community experienced a boom in small commercial firms in the years leading up to and immediately following the Revolution. Thomas M. Doerflinger notes that Philadelphia experienced a 60 percent increase in local merchants between 1774 and 1785, and similar trends marked other port cities such as Boston, New York, Baltimore, and Charleston.[77] This meant that the terms of trade benefits mentioned above dispersed over a growing number of commercial actors. Likewise, most of America's capital stock resided in land, which legal structures such as primogeniture and entail made extremely illiquid.[78] Making matters worse, the new United States lacked mechanisms to mobilize capital, such as banks or a fiscally-active central government. In sum, fewer merchants possessed the capital reserves to invest in developmentally-important, capital intensive ventures such as long-distance voyages, large ship construction, financial institution creation, and transportation and information infrastructure.

While exacerbating the debt-deflation cycle and causing extensive human suffering, the widespread bankruptcies of the 1780s consolidated capital and facilitated investment during the 1790s and early-1800s. In fact, historian Robert A. East argues that, "the commercial depression [served] to benefit and consolidate the interests of surviving merchants," chief among them large-scale investors like Jeremiah Wadsworth, Robert Morris, and William Constable.[79] In early-1785, a Boston agent for *Harrison, Ansley & Co.* expressed confidence that the bankruptcy of inexperienced traders would recirculate capital and place it with more "punctual and reliable" merchants.[80] Likewise, Anthony L. Bleeker of New York told Thomas Blane that the Depression

[77] Doerflinger, *A Vigorous Spirit of Enterprise,* 244.
[78] Richard Sutch, "Saving, Capital, and Wealth," in *Historical Statistics of the United States, Millennial Edition Online*, 2009, Cambridge University Press, hsus.cambridge.org.
[79] East, *Business Enterprise in the American Revolutionary Era*, 257.
[80] Harrison, Ansley, & Company to John Amory Sr., February 7, 1785, Box 53, J. and J. Amory Business Papers, Barker Library at Harvard Business School.

would result in capital "getting into proven hands" who would invest it wisely. Nicholas Brown also benefitted greatly from bankruptcies in Providence and Boston. Despite almost going under himself, Brown and his partner George Benson acquired commodity stocks, ships, and a wide array of financial assets at extremely low prices in 1785 and 1786.[81] In sum, the bankruptcies of the 1780s laid, according to East "the groundwork for the cooperation and concentration of interests essential to the success of capitalist enterprises in the following decade."[82]

The investments that resulted from the mid-1780s capital concentration anchored several of the most important growth industries of the 1790s. First, the capital accumulated between 1783 and 1786 facilitated a substantial increase in American shipbuilding. Mostly dedicated to the coastal trade, Forrest McDonald demonstrates that the confederation era saw the production of 25,000 tons of new ships in Virginia alone.[83] This surge in ship production revitalized port cities like Boston and Norfolk that experienced significant damage during the Revolution.[84] At the same time, the increase in American shipbuilding reduced the cost of coastwise freight and thus accelerated the integration of the American domestic market.[85] Investors poured money into small-scale manufactories like grist and paper mills and distilleries.[86] Increasingly efficient coastwise shipping, combined with the development of new roads and improved river navigation, connected American producers of semi-produced goods with new markets across the eastern seaboard.

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[81] James Blaine Hedges, *The Browns of Providence Plantations* (Providence, RI: Brown University Press, 1968), 7-16.
[82] East, *Business Enterprise in the American Revolutionary Era*, 261.
[83] Forrest McDonald, *E Pluribus Unum: The Formation of the American Republic, 1776-1790* (Boston: Houghton Mifflin Company, 1965), 73-74.
[84] For more on the American ship building boom, see Chapter 3, pg. 137-138.
[85] Allan Pred, *Urban growth and the circulation of information: The United States system of cities, 1790-1840* (Cambridge, Mass.: Harvard University Press, 1973), 14-17.
[86] For more on investment in small-scale manufactories see Chapter 1, pg. 32-33.

Investors also put significant capital behind long-haul voyages to Latin America, Northern Europe, and the Far East. These voyages required a large amount of capital up front but offered substantial payoffs if managed well. Many merchants who benefited from the capital consolidation of the mid-1780s such as Robert Morris and Stephen Girard fronted immense sums to finance long-haul trade. For example, Morris posted nearly $100,000 to outfit the *Alliance* for a voyage to China in 1787, while the Brown family provided over $25,000 in capital for a voyage to Canton the same year.[87] Brown admitted in 1788 that he could not have capitalized his Far East ventures had he not absorbed several Providence firms in 1785 and 1786.[88]

Banks became another important destination for American capital investment during the 1780s and 1790s. The nation's first bank, the Bank of North America (BNA), arose in 1781 to finance the Continental Army after the collapse of the Continental Dollar in 1780.[89] Capitalized at $400,000—and then raised to $2,000,000 in 1787—a group of wealthy capitalists that benefitted from the capital consolidation of the 1780s, including Robert Morris, Thomas Willing, Samuel Meredith, William Bingham and Henry Drinker comprised the BNA leadership throughout the Federal Era.[90] Soon thereafter, the Bank of New York and the Massachusetts Bank opened for business in 1784. Absorbing capital from merchants who had survived the crash of 1784-1785, America's three banks worked to counteract the monetary scarcity and credit shocks that perpetuated the Depression. "The Bank which is established here is certainly a very great advantage to the mercantile Interest," Nalbro Frazier wrote to Nathaniel Ingraham on

[87] East, *Business Enterprise in the American Revolutionary Era*, 256.
[88] Nicholas Brown to John Francis, July 23, 1788, Box 44, Folder 23, Brown Family Business Records, The John Carter Brown Library at Brown University.
[89] For more on the BNA, see Lawrence Lewis Jr., *A History of the Bank of North America, The First Bank Chartered in the United States* (Philadelphia: J.B. Lippincott & Company, 1882); Robert E. Wright, *Origins of Commercial Banking in America, 1750-1800* (New York: Rowan & Littlefield Publishers, 2001), 58-75; Chu, *Stumbling Toward the Constitution*, 137-157.
[90] Joseph Stancliffe Davis, *Essays in the Earlier History of American Corporations,* vol. 2, Appendix 2 (Cambridge, MA, 1917).

September 22, 1783. "For if we Credit any Person & receive his note payable in Sixty Days we can discount it at the Bank and receive the Cash for it immediately for 1 Percent."[91] While unable to wholly reverse the financial stress of the mid-1780s, the banks in Philadelphia, New York, and Boston nonetheless succeeded in lowering interest rates and promoting capital investment.

In addition, Robert E. Wright argues that the banks played a central role in depersonalizing American commerce, and thus freeing it—to some extent at least—from the hierarchical social stratifications that dominated the colonial economy. "Businessmen embraced an emerging extensive system of commerce," Wright writes, "and an increasingly depersonalized mode of transacting business that…destroyed the colonial 'culture of deference' and established a system of social hegemony characterized by impersonal financial institutions."[92] In this environment, Wright argues, institutions like chambers of commerce and banks "so regularized exchanges that the marketplace and business world no longer supported an intimate, deferential culture."[93]

Wright's assertion of an impersonal early American business culture is wildly over-blown: directors of banks discriminated against political adversaries and prioritized social allies for contracts. Elite merchants like Morris and Wadsworth only survived the Depression of the 1780s—and thus absorbed the capital of their ruined peers—by way of their wealth and the contacts that wealth provided.[94] Nonetheless, Wright correctly identifies a broader democratization of the American economy that took place amidst the malaise of the 1780s. The

[91] Nalbro Frazier to Nathaniel Ingraham, September 22, 1783, Nalbro Frazier Letter book, 1783-1799, New York Public Library.
[92] Wright, *Origins of Commercial Banking in America*, 79-80.
[93] Ibid, 80.
[94] Lewis, *A History of the Bank of North America, The First Bank Chartered in the United States*, 34-35; Tom Cutterham, "The Revolutionary Transformation of American Merchant Networks: Carter and Wadsworth and Their World, 1775–1800," *Enterprise & Society* 18, no. 1, 3 & 22.

Depression of the Confederation era rocked the economy and American society to its very core. Yet from that crisis arose forces and structures that anchored long-term economic growth.

The Panics of 1791 and 1792

The Depression of the 1780s left indelible scars on the American merchant community. Representative of their society, many of these men expected an era of widespread prosperity in which free trade and open ports across the globe would bring work and wealth to all the citizens of America.[95] The commercial crisis bankrupted thousands of ambitious and enterprising young men, many of whom served during the Revolution.[96] With farms destroyed, labor markets glutted, and little prospect of back pay or pensions from the Continental government, many post-Revolutionary men entered the import/export trade in the early 1780s, either as a merchant, artisan, or sailor. To their dismay, the Depression ruined their hopes of a successful commercial career.[97]

In sharp contrast to the volatile commercial sector, the new Bank of the United States (BUS) presented depression-weary merchants with the prospect of new careers in the financial sector.[98] "No object of equal magnitude, founded on so firm a basis, has ever presented itself to

[95] Bittner, "The Definition of Economic Independence and the New Nation," 96-97 & 193-194; Lawrence A. Peskin, *Manufacturing Revolution: The Intellectual Origins of Early American Industry* (Baltimore, Md.: Johns Hopkins University Press, 2003), 65-72.
[96] In Kulikoff, "'Such Things Ought Not To Be'," 144-146, the author convincingly argues that at least one-third of the male population served in the Continental Army or state or local militias for at least some time during the Revolutionary War.
[97] John A. Ruddiman, *Becoming men of some consequence: youth and military service in the Revolutionary War* (Charlottesville, VA: University of Virginia Press), 144-178.
[98] According to John Steele Gordon in *Hamilton's Blessing*, 30, The BUS would "act as a depository for government funds and a means of transferring them from one part of the country to another, serve as a source of loans to the government and to other banks, and regulate the money supply." The government would own 20 percent of the BUS's 20,000 shares, with the rest subscribed by private investors. In an attempt to keep capital in the marketplace, David J. Cowen explains in *The Origins and Economic Impact of the First Bank of the United States, 1791-1797* (New York: Garland Publications, 2000), 41–43, "the $400 per share was not due at the initial subscription but rather only a down payment of $25, in exchange for a scrip, or temporary receipt." This "scrip" awarded its holder the opportunity to complete payment and receive stock when the BUS opened its doors. Hamilton prescribed that

monied capitalists as the Bank of the United States," the *New-York Packet* told its readers.[99] The BUS "will in its operations reduce the interest of money," the *Packet* proclaimed, "facilitate business in every line...and enable the government to reduce the public debt, and diminish the public burdens."[100] Several newspapers suggested that investors could expect returns of 10 percent or higher.[101] Unlike land or imported commodities, authorities did not tax financial securities, thus providing additional incentives for young men to rush into financial markets.[102]

On July 4, 1791, Bank of the United States (BUS) script—certificates that entitled the bearer to purchase BUS stock at a later date—went on sale in Philadelphia. The 20,000 scripts—priced at $25 each—allotted for public sale sold out in a matter of hours.[103] By the second week of August, prices in New York and Philadelphia had surged to nearly $200. Trading reached such a frenzied level that newspapers began making comparisons to the South Sea Crisis (1720) and John Law's Mississippi Bubble (1719).[104] By August 10, prices in New York reached a stunning $286.[105] Prominent Philadelphia physician and signer of the Declaration of Independence Benjamin Rush noted that "the city…for several days has exhibited the marks of a great gaming house." Widely-circulated estimates that script would reach $500 and even $600

BUS shares would be paid for mostly in government bonds, thus providing demand and supporting prices as individuals bought the new 6s, 3s, and deferred 6s to tender for their shares. The BUS would then issue specie-backed bank notes, which anchored the nation's money supply. "In this fashion," Cowen writes in *The Origins and Economic Impact of the First Bank,* 16–17, "the banking and funding system were working together to produce growth."

[99] "PHILADELPHIA, July 4th," *New-York Packet*, July 7, 1791, America's Historical Newspapers.

[100] Ibid.

[101] "NATIONAL BANK." *Columbian Centinel*, July 2, 1791, America's Historical Newspapers.

[102] Doerflinger, *A Vigorous Spirit of Enterprise*, 64.

[103] James O. Wettereau, "New Light on the First Bank of the United States," *The Pennsylvania Magazine of History and Biography* 61, no. 3 (Jul. 1, 1937): 273; "New-York, July 6." Published in *Dunlap's American Daily Advertiser* on 8 July 1791.]," *Dunlap's American Daily Advertiser*, July 6, 1791, 3884 edition, America's Historic Newspapers.

[104] A Correspondent, "New-York.--'A Correspondent Observes, That the Rage for Speculation, or Gambling in the Funds, Has Increased in This City to a Most Alarming Degree;'," *New-York Daily Gazette*, August 9, 1791, 818 edition, American Antiquarian Society.

[105] "Boston- Prices of Stock- Yesterday Noon- (Aug. 16, 1791)," *Columbian Centinel*, August 17, 1791, 45 edition; "New-York, Aug. 10," *General Advertiser*, August 9, 1791, 271 edition, 10, America's Historic Newspapers; "Daily Quotations of National Bank 'Scripts' at New York Sold for Cash at Public Auction--August–December, 1791," James O. Wettereau Collection, Box 71, Special Collections, Columbia University.

only increased the enthusiasm. The speculation began to bridge the boundary between figurative and literal mania. Traders went days without sleep, drinking too much and eating too little. Doctors in Philadelphia, including Rush, reported that several men had literally gone insane.[106]

The democratization of finance made possible by the Hamiltonian program opened the doors of speculation to anyone with cash. "Grocers, shopkeepers, sea captains, and even prentice boys"[107] poured into the securities market, while reports of "mechanicks deserting their shops" to speculate in financial assets resonated across New York, Philadelphia, and Boston.[108] The widespread use of novel financial contracts such as "Wager Stock"[109] increased the supply of available assets while adding to the pace of trading.[110] The explosive demand and the proliferation of credit fueled a further spike in asset prices. Philadelphia prices soared from $180 on August 9 to between $230 and $300 on the morning of August 11.[111] Benjamin Rush reported

[106] George Washington Corner, *The Autobiography of Benjamin Rush; His Travels through Life Together with His Commonplace Book for 1789–1813* (Westport, CT: Greenwood Press), 203.
[107] L. H. Butterfield, ed., *Letters of Benjamin Rush. 1761–1792* (Princeton, N.J: Princeton University Press, 1951), 602–603; Mordecai Lewis to Nicholas Low, August 15, 1791, Nicholas Low Papers, Box" Philadelphia 1791", Library of Congress.
[108] Rufus King to Alexander Hamilton, August 15, 1791, in *The Papers of Alexander Hamilton Digital Edition*, ed. Harold C. Syrett (Charlottesville: University of Virginia Press, Rotunda, 2011).
[109] In a standard wager stock sale, an investor purchased a contract from a seller for delivery of stock at a future date at a stated purchase price—like a modern futures contract, these wager contracts would be marked to market, with the profit or loss to the investor delivered in cash. In simpler terms, a buyer and seller would select an asset on which to bet, most often U.S. securities or bank stock. Next, they would contractually agree to a purchase price and future date on which the purchase price would be compared to that day's market price. If the asset appreciated, the seller would pay the purchaser the difference; the buyer would do the same if the asset price fell. Thus, wager and other similar contracts overcame the speculative constraint of asset supply.
[110] While only 16,000 script circulated in American markets in July and August 1791, wager deals faced no supply constraint. This innovation made the number of transactions surrounding BUS script almost limitless. The number of virtual shares being traded, including contracts and credits, could realistically have been 10 times the number of script actually on the market. After the Panic of 1791 had subsided, investors sought clarification as to the legal status of their contracts. The legal enforceability of these financial contracts separated them from back-alley gambling. The case of *Livingston v. Swanwick* (1793) shed light on these speculative types of wager contracts. John R. and Brockholst Livingston—the latter an avid speculator and future Supreme Court Justice—sued John Swanwick of *Willing, Morris & Swanwick* for failing to deliver 100 shares of BUS stock, purchased on July 15, 1791, at the rate of 21 shillings and 6 pence (21/6) for delivery on January 5, 1792. "*This* was an action on the case," the decision stated, "to recover *the difference* upon a stock contract, which Samuel Anderson, as the broker and agent for the defendant, who resided in Philadelphia, had entered into with the plaintiffs, who resided in New York...[emphasis added]." The judge decided in favor of the Livingstons, awarding them 19,400 dollars.
[111] "The Bank Scrip Was Yesterday up to 180," *General Advertiser*, August 10, 1791, 269 edition; Corner, *The Autobiography of Benjamin Rush; His Travels Through Life Together with His Commonplace Book for 1789–1813*,

selling shares for $225 at eight o'clock in the morning, only to see them rise to $315 and $320 hours later.[112] U.S. securities also continued their climb, reaching between 120 and 122.5 percent of par in frenzied trading.[113]

The BUS bubble initially burst in New York on August 11. Script opened that morning at $250, well below the previous day's peak of $280 and closing the day at $197. In Philadelphia, news from New York crashed the market by midday on August 12. At the noon auctions, merchants, politicians, and grocers alike packed the City Tavern, Philadelphia's primary trading floor, desperate to cut their losses. Initial auctions confirmed that script had indeed fallen over 50 percent from the previous day's highs. Ask prices between $140 and $160 received virtually no bids.[114] Merchants reported numerous instances of sham sales—orchestrated transactions in which collusive parties staged sales at higher-than-true-market-rate prices—as desperate speculators tried to prop up their rapidly depreciating script. The market had completely frozen.[115] Merchants, even those exclusively involved with commercial trading, no longer trusted purchasers. Importers refused credit to their wholesalers, not knowing if they too had speculated in securities. As a result, distrust and uncertainty spread throughout Philadelphia's broader economy.

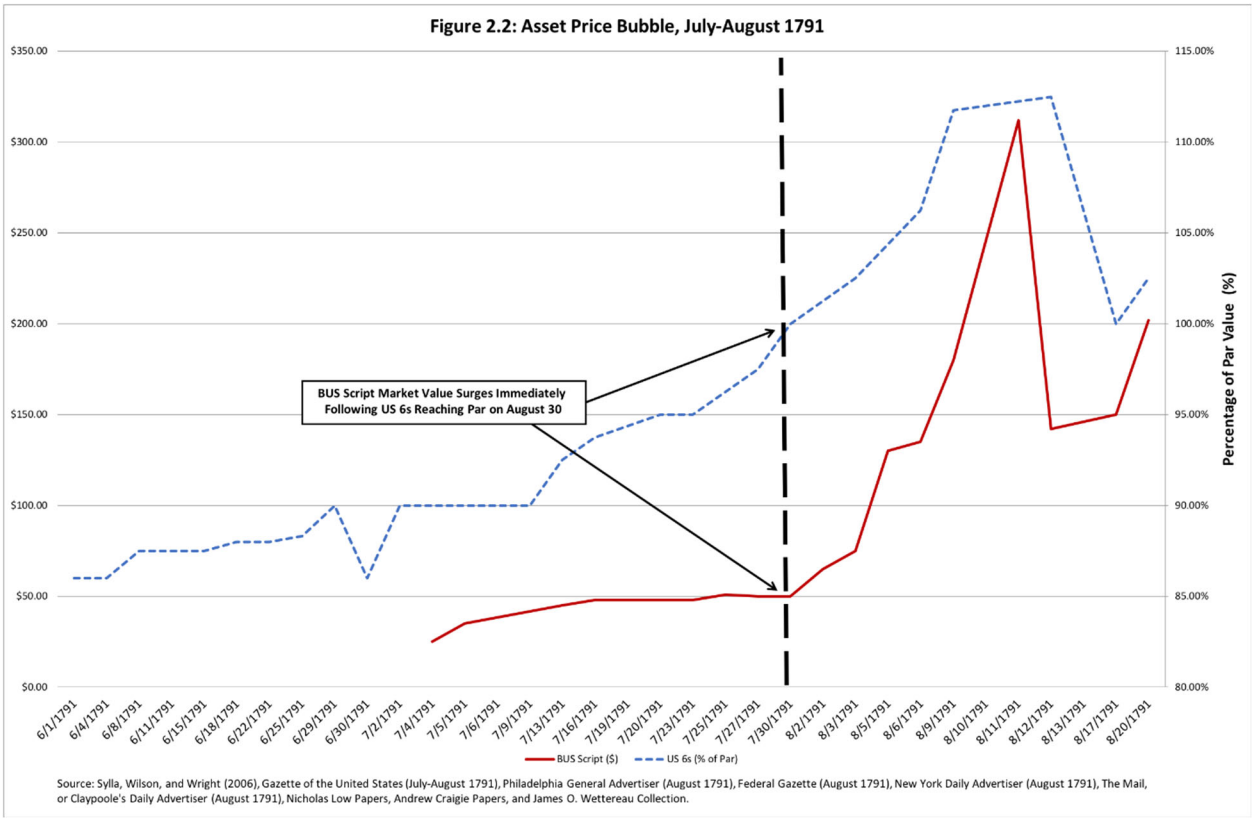
203–204.; Mordecai Lewis to Nicholas Low, August 12, 1791, Nicholas Low Papers, Box "Philadelphia 1791", Library of Congress.

[112] Corner, *The Autobiography of Benjamin Rush*, 203.

[113] "From Another Correspondent. Dr. One Share (400 Dollars) in the Bank of the United States.," *General Advertiser*, August 12, 1791, 271 edition, America's Historic Newspapers; "PRICES OF STOCKS, Yesterday Noon.--'At Mr. Jones's Sale of Publick Paper, Yesterday Bank Script, Sold at 241 Dollars...Six Per Cents Were Sold for 24/. and 24/1 Specie.,'" *Columbian Centinel*, August 13, 1791, 44 edition, America's Historic Newspapers.

[114] "[From] Philadelphia, August 13 [Published 24 August 1791.]," *The City Gazette or The Daily Advertiser*, August 13, 1791, 1864 edition, America's Historic Newspapers.

[115] Ibid.



Even more detrimental to the long-term health of the American financial system, U.S. securities came under significant pressure as script prices collapsed. A collapse in U.S. securities prices posed a symbolic and practical threat to the stability of the nascent United States. In addition to driving up borrowing costs, a crash in US securities signaled that the United States could not sustain a modern financial regime. Alexander Hamilton feared that, just as in France after the Mississippi Bubble, public and investor confidence, both economic and political, would evaporate and not return for many years.[116]

[116] The Mississippi Bubble of 1718–1720 revolved around John Law, France's Scottish-born central banker and finance minister. The crisis arose when Law merged his Mississippi Company, which incorporated all of France's overseas trading companies, with the country's de facto central bank, the Banque Royale. The promise of unending government-supported profits made shares in the Mississippi Company soar over 2,000% in less than two years. Despite Law's promises, the bubble burst in late 1720. Because of the Mississippi Company's close connections with the French Government and the Banque Royale, the crash in Mississippi Company's share price also resulted in the collapse of the French currency. By the end of the year, a bankrupt Law had fled into exile. In *A Financial History of Western Europe* (London; Boston: Allen & Unwin, 1984), Charles Kindleberger wrote, "French experience with John Law was [so traumatic] that there was hesitation even in pronouncing the word 'bank' for 150 years thereafter."

Hamilton had reason to fear an imminent collapse of the US government bond market. While US securities prices had fallen well over 10 percent in less than a week, this decline paled compared to script's 50-percent crash. Hamilton also knew that many speculators, with contract deadlines quickly approaching, had begun making plans to liquidate their U.S. securities at fire-sale prices.[117] A mass liquidation of US securities would put extreme downward pressure on US securities prices and exacerbate the deflationary spiral. Cash poor and facing debtor's prison, borrowers would need to dump US securities, BUS script, and other assets to cover their obligations. The flood of assets entering the market would only depress already falling prices. As the deflationary spiral steepened, credit would dry up and assets would hold little cash value, if cash could be found at all.

Fearing economic collapse, on Monday, August 15 Hamilton gained authorization from the Commissioners of the Sinking Fund to make open-market debt purchases of "between three and four hundred thousand dollars" in New York and Philadelphia.[118] Hamilton directed William Seton, cashier of the Bank of New York, and Samuel Meredith, the treasurer of the United States, to purchase US securities on behalf of the Treasury. Hamilton aimed "to keep the Stock"—Hamilton always referred to US securities as "stock" and BUS script as "script"—"from falling too low in case the embarrassments of the dealers should lead to sacrifices."[119] First

[117] "Philadelphia, Aug. 18," *ClayPoole's Daily Advertiser*, August 18, 1791, 68 edition, America's Historical Newspapers.
[118] The law that established and governed the operations of the sinking fund, "An Act making Provision for the Reduction of the Public Debt," established the Vice President, the Chief Justice of the Supreme Court, the Secretary of State, the Secretary of the Treasury, and the Attorney General as the Commissioners of the Sinking Fund. Only Hamilton, Jefferson, and Randolph attended this meeting, barely fulfilling the legal provision that at least three members be present to authorize spending.
[119] Alexander Hamilton to William Seton, August 16, 1791, in *The Papers of Alexander Hamilton Digital Edition*, ed. Harold C. Syrett (Charlottesville: University of Virginia Press, Rotunda, 2011).

and foremost, Hamilton sought to prevent the type of deflationary spiral that undercut broader social confidence in the financial system and constitutional regime.[120]

Hamilton emphasized speed as he briefed his subordinates on the plan. Hamilton believed that previous financial crises had morphed into societal crises when otherwise powerful authorities failed to quickly identify and contain growing panics. Therefore, a mere five days after the crash, on August 17, Meredith began purchasing $150,000 of US bonds in Philadelphia while Seton began doing the same the following day.

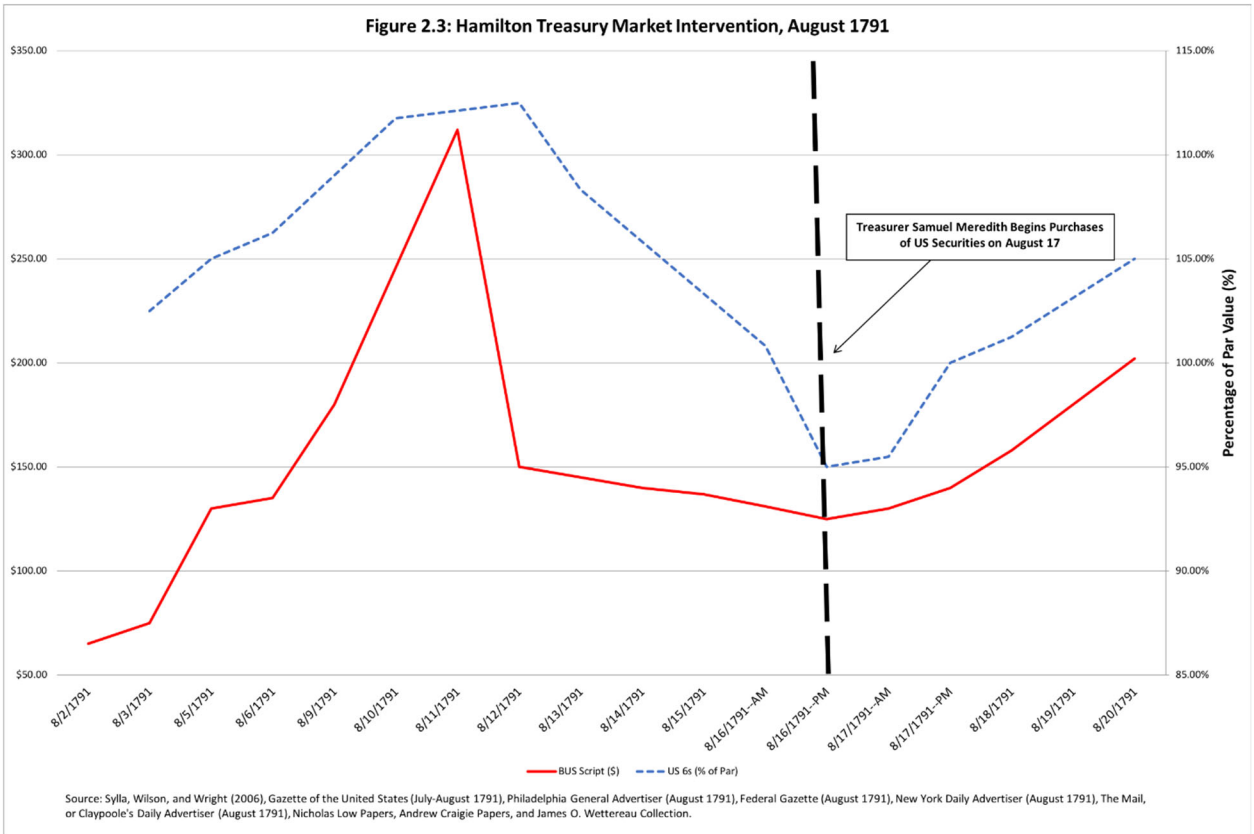
Samuel Meredith began purchasing securities on Wednesday, August 17, and the next day prices reversed their downward trend (see Figure 2.3).[121] Indebted securities holders avoided liquidating their portfolios and script prices jumped from a low of $130 on August 17 to between $161 and $164 the next day, an approximate 15% rebound.[122] Bolstered by Treasury purchases, US securities stabilized and even rose slightly in the following days.[123] By Friday, August 19, prices of script and U.S. securities stabilized and the threat of a deflationary spiral receded.

[120] Perhaps the most striking aspect of Hamilton's interventionist policy was his concerted effort to actively combat the short sellers he feared would attempt to torpedo U.S. securities as they had script. "If there are any Gentlemen who support the *funds* and others who *depress* them," Hamilton wrote to Seton, "I shall be pleased that your purchases may aid the *former*. This in great confidence." In essence, Hamilton ordered his agents to undercut short-selling speculators. This move was intended to make a statement—the Treasury would not stand idly by while speculators endangered economic stability. If they did so, they would face a powerful and stalwart foe in the Treasury Secretary.

[121] Mordecai Lewis to Nicholas Low, August 17, 1791, Nicholas Low Papers, Box "Philadelphia 1791," Library of Congress.

[122] "PHILADELPHIA, August 17 [Published on 19 August 1791].--'We Hear That the Secretary of the Treasury Is Buying 6 Per Cents. at 20s. 1 1/2d.'," *New-York Daily Gazette*, August 17, 1791, 827 edition; Mordecai Lewis to Nicholas Low, August 19, 1791, Nicholas Low Papers, Box "Philadelphia 1791," Library of Congress.

[123] The 18% calculation was made using the extreme high and low valuations available for August 17 and 18. These values were taken from the sources cited in the previous footnote. The 8% calculation is from a comparison of two letters from the same source—Mordecai Lewis. Lewis's low for August 17 is listed at $151, as opposed to the $130 listed in the *New York Daily Gazette*. This discrepancy is responsible for the wide margin of the stated rebound in script prices.

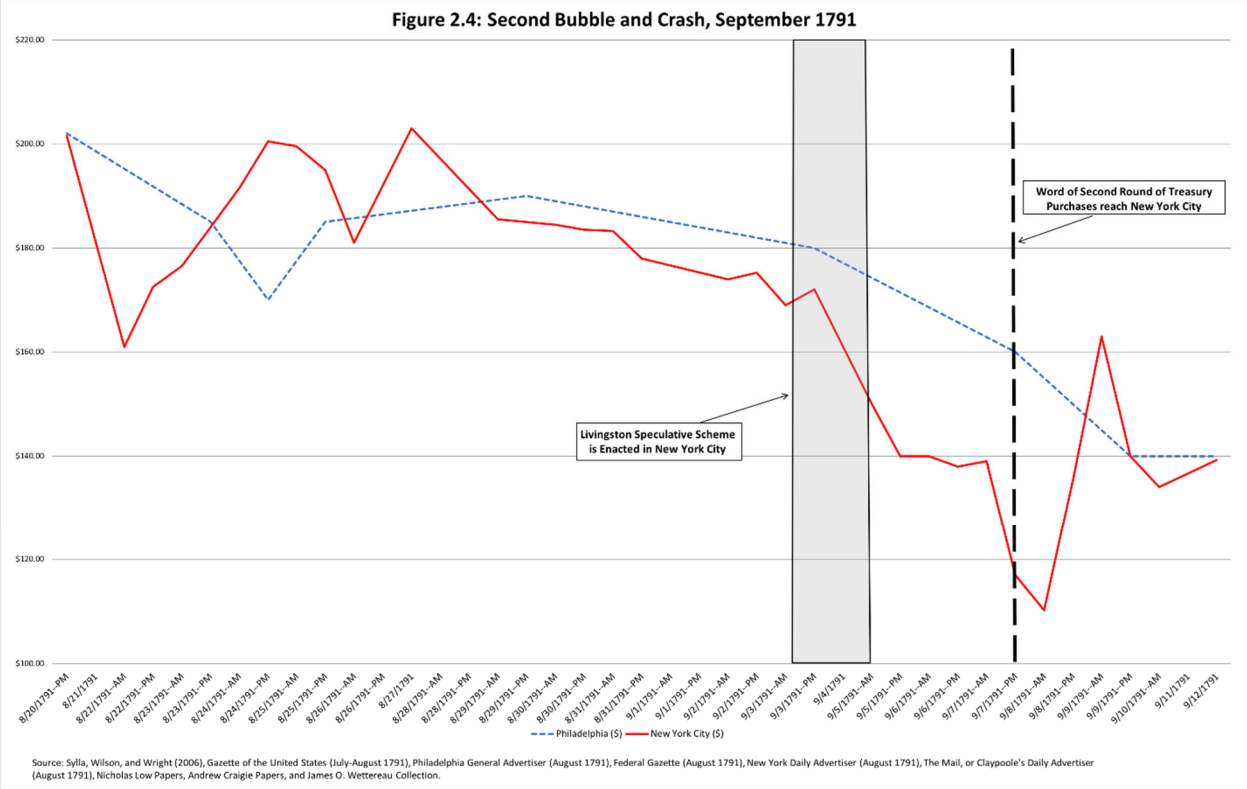


As asset values in Philadelphia stabilized in response to the Treasury's liquidity injections, groups of wealthy New York merchants pounced on depreciated script and US securities. After a slight lull, the last week of August saw speculative purchases in New York drive script over $200 for the first time since the bubble burst. Yet on the morning of Monday, September 5, New York's script market again began to collapse.[124] Script prices declined nearly 20 percent from the previous day's highs while US securities also came under heavy pressure.[125]

[124] Evidence clearly reveals that the crash of September 5 was caused by an organized speculative attack. "The truth is that the fluctuations are principally owing to the arts & contrivances of mere jobbers & amongst these our friend Brockholst [Livingston] stands in the foremost ranks," Robert Troup wrote to Alexander Hamilton. "A few days ago a cursed scheme of depression was planned & executed under his immediate patronage as is universally said & believed."[124] The scheme was most likely activated in *sub rosa* trading on Sunday the 4th or Monday morning the 5th. While the exact nature of Livingston's scheme is unclear, it is quite possible that his plan was very modern in nature. Members of Brockholst Livingston's inner circle, including Livingston himself, were practicing wager stock speculation and other modern types of short selling. Yet even if Livingston's method was a more antiquated form of short selling, the effect was still swift and devastating.

[125] "PRICE of STOCKS at AUCTION. [5 September 1791.]," *New York Daily Advertiser*, September 6, 1791, 2043 edition, America's Historic Newspapers.

Burdened with heavy debts, many of New York speculators saw their assets' cash potential decline dramatically. William Seton told Hamilton that the mid-August liquidity injections fell "far short of preventing that universal panic & want of money which now prevails." As script fell to its lowest price since July (see Figure 2.4), Seton nervously reported that brokers had begun liquidating script and US securities at steep discounts "merely to save credit."[126]



Once again, Hamilton stepped in to prevent systemic collapse. The Treasury Secretary instructed Seton to purchase securities on the open market while informing New York merchants that the Treasury was doing the same in Philadelphia.[127] The added liquidity, and implicit guarantee of further Treasury support, settled markets and unfroze credit. While the securities

[126] "PRICE of STOCKS at Auction. [8 September 1791.]," *New York Daily Advertiser*, September 9, 1791, 2046 edition, America's Historic Newspapers; William Seton to Alexander Hamilton, "From William Seton to AH, 5 September 1791."
[127] Alexander Hamilton to William Seton, September 7, 1791, in *The Papers of Alexander Hamilton Digital Edition*, ed. Harold C. Syrett (Charlottesville, VA, 2011).

market experienced a significant hangover, Hamilton's second round of liquidity injections prevented all-out collapse in New York. Meanwhile, trading activity in Philadelphia remained tepid as the city attempted to rebuild their pre-crisis commercial confidence.[128]

Far ahead of his time, Hamilton understood the complex interplay between the monetary and psychological causes of financial contagion. After instructing Seton to inject his remaining $50,000 into the New York market, Hamilton leveraged his greatest asset—the financial community's faith in the Washington administration. In a stark departure from his insistence that William Seton covertly execute the Treasury's first round of bond purchases, Hamilton now urged his agent to signal the government's unwavering support for the financial system. "You may however make it known that the Treasurer [Meredith] is purchasing here," Hamilton instructed Seton on September 7.[129] The Treasury Secretary projected a subtle but clear message: investors could be assured that, if they remained patient, sufficient liquidity would be made available. While the uncertain market continued to require liquidity injections through December of 1791, the fear that gripped New York just days before receded (see Figure 2.4).

On December 12, 1792, the Bank of the United States opened for business, providing a much-needed economic boost to Philadelphia. Easy credit and much-needed liquidity fueled commercial activity throughout January and early February 1792 despite harsh weather. The Hamilton Treasury's management of the previous autumn's crisis, combined with the BUS's easy discount policy, ushered US six percent securities (6s), script, and Bank of New York stock

[128] Mordecai Lewis to Nicholas Low, August 29, 1791, Nicholas Low Papers, Box "Philadelphia 1791," Library of Congress.
[129] Alexander Hamilton to William Seton, "From AH to William Seton--'You May...make It Known That the Treasurer Is Purchasing Here.'," September 7, 1791, *The Papers of Alexander Hamilton Digital Edition*, ed. Harold C. Syrett. Charlottesville: University of Virginia Press, Rotunda, 2011.

to post-crisis highs. For the moment, Jeffersonian lamentations over the threat of financial capitalism grew quiet.

However, in mid-February the market again began to collapse. US 6s fell over 25 percent in less than a month as speculators from Boston to Charleston saw millions of dollars of wealth evaporate. As he did the previous autumn, Hamilton coordinated a program of liquidity injections and loan guarantees across the nation to stabilize securities markets. The crisis lasted until mid-June, shaking confidence in the Federalist economic program.

The Panic of 1792 only provided more evidence for the wild unpredictability of modern financial capitalism. Jeffersonians ardently and rightly asserted that the BUS drove the bubble and caused the crash. Upon opening, the BUS flooded the market with bank notes and easy credit, doubling the discounted bills in the market and driving up the value of circulating BUS notes by almost 500 percent.[130] In mid-February 1792, BUS officials realized their mistake and attempted to correct the "deranged state of credit" they had produced. Unfortunately, the BUS overcorrected, sharply reducing discounts and note issuance. The contraction forced other banks to cut back on discounts and stop accepting BUS notes to prevent specie flight and maintain stable capital ratios.[131] Bull market speculators tried to artificially boost falling asset prices by borrowing from increasingly dubious sources and pouring that money into the market. However, the speculators could not keep the tide from retreating.

The fact that Federalist insiders drove, or at least became the public face of, the crash only exacerbated Republican suspicions. In mid-January 1792, William Duer and Alexander Macomb borrowed millions of dollars on short terms and high interest rates in an effort to corner the US securities market and seize control of the BUS and BoNY. The plan eventually failed

[130] Cowen, *The Origins and Economic Impact of the First Bank of the United States,*101-105.
[131] Cowen, *The Origins and Economic Impact of the First Bank of the United States*, 111.

when asset prices collapsed in mid-February, leaving Duer and Macomb unable to roll over their short-term loans. In March and April 1792, Duer and Macomb sought refuge from angry creditors in the local jail before facing charges of bankruptcy, fraud, and debt avoidance.[132]

Making things worse, Duer illegally, or at least unethically, squandered the capital of Federalist sponsored institutions in speculation. Duer's voracious appetite for capital led him to siphon a large amount of the *Society for Establishing Useful Manufactures (SUM)*'s capital for use in his bets on US securities and bank stock. While he intended to return the funds ("with interest," he claimed), the market crash and Duer's subsequent bankruptcy left *SUM* with little capital to execute Federalist industrial projects. While some speculators including Duer and Macomb did end up in bankruptcy, Hamilton's bailout program paid considerable sums of sinking-fund cash to speculators and guaranteed loans to numerous banks that invested in securities. Many opponents, including moderate Federalist in Philadelphia who had not been bailed out in 1791, did not accept Hamilton's distinction between supporting "valuable institutions" like the banks rather than "unprincipled gamblers" like Duer.[133] To Republican opponents of industrial and financial capitalism, the situation could not have been more indicative of the corrupt implications of economic modernization.

Financial Reform

The Panics of 1791 and 1792 reminded Americans that economic independence carried with it as much uncertainty as opportunity. Nevertheless, reactions to the Panics by the commercial community, government, and general public fundamentally shaped American

[132] Elkins and McKitrick, *The Age of Federalism*, 278.
[133] Alexander Hamilton to William Seton, January 24, 1792, in *The Papers of Alexander Hamilton Digital Edition*, ed. Harold C. Syrett (Charlottesville, VA, 2011).

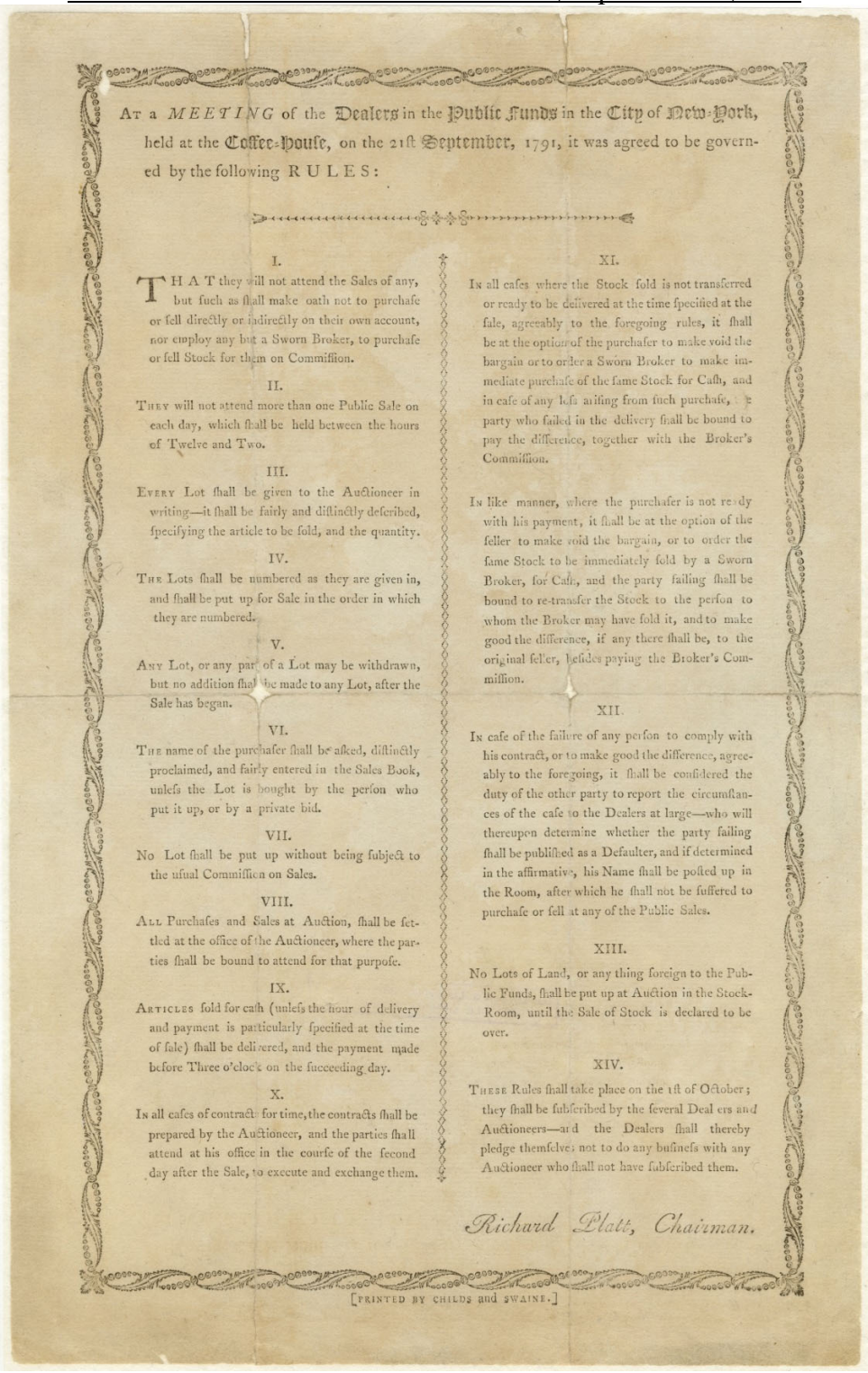
economic development for decades. Whereas the Depression of the 1780s forced significant structural changes in the commercial sector, the Panics molded the budding American financial sector and previewed how it would interact with legal systems, commercial markets, and government regulators for the subsequent half-century.

In the wake of the Panics, legions of securities traders sought to formalize and regulate the anarchic financial atmosphere. The bubble of 1791 represented laissez-faire capitalism in its extreme, as brokers, auctioneers, sailors, laborers, and merchants trucked, bartered, and exchanged anywhere and everywhere. Fraud, asymmetric information, and principal-agent problems ravaged the new securities market, with disastrous results. Thus, less than a week after the Hamilton Treasury's second round of liquidity injections in 1791, a broadside titled "At a MEETING of the Dealers in the Public Funds in the City of New-York, held at the Coffee-house, on the 21st September, it was agreed to be governed by the following rules:," began circulating around the city (see Illustration 2.1).[134] The fourteen rules marked the formation of the first formal stock exchange in America.[135] "The rules are comprehensive," scholars Walter Werner and Steven T. Smith note, "covering methods of submitting bids, settlement of trades, execution of time bargains, and sanctions to be imposed on defaulting parties."[136] In fact, it is likely that the movement to establish a regulated market began on September 5, the day of that marked the

[134] "At a meeting of the dealers in the public funds in the city of New-York, held at the Coffee-House, on the 21st September, 1791, it was agreed to be governed by the following rules," Broadsides SY1791, no. 39, New-York Historical Society.
[135] In fact, it is likely that the movement to establish a regulated market began two weeks earlier, at the worst point of the crash. On September 5, both daily New York City newspapers ran a special notice, entitled, "NOTIFICATION." The advert read, "THE Subscribers to the National Bank, and such other persons as intend to become Stock-holders, are requested to meet at Corre's Tavern, To-morrow Evening, to determine on measures conducive to their mutual interest, Sept. 5, 1797 [sic]."[135] No known record of this meeting's agenda exists, yet it is likely that this meeting presaged the broadside meeting on September 21st.
[136] Walter Werner and Steven T. Smith, *Wall Street* (New York: Columbia University Press, 1991), 22.

worst point of the crash. While limited in scope, the fourteen rules listed on the broadside mark the origins of an organized and regulated shock market in New York City.

Illustration 2.1: New York Brokers' Rules, September 21, 1791



AT a *MEETING* of the Dealers in the Public Funds in the City of New-York, held at the Coffee-House, on the 21st September, 1791, it was agreed to be governed by the following RULES:

I.

THAT they will not attend the Sales of any, but such as shall make oath not to purchase or sell directly or indirectly on their own account, nor employ any but a Sworn Broker, to purchase or sell Stock for them on Commission.

II.

THEY will not attend more than one Public Sale on each day, which shall be held between the hours of Twelve and Two.

III.

EVERY Lot shall be given to the Auctioneer in writing—it shall be fairly and distinctly described, specifying the article to be sold, and the quantity.

IV.

THE Lots shall be numbered as they are given in, and shall be put up for Sale in the order in which they are numbered.

V.

ANY Lot, or any part of a Lot may be withdrawn, but no addition shall be made to any Lot, after the Sale has began.

VI.

THE name of the purchaser shall be asked, distinctly proclaimed, and fairly entered in the Sales Book, unless the Lot is bought by the person who put it up, or by a private bid.

VII.

NO Lot shall be put up without being subject to the usual Commission on Sales.

VIII.

ALL Purchases and Sales at Auction, shall be settled at the office of the Auctioneer, where the parties shall be bound to attend for that purpose.

IX.

ARTICLES sold for cash (unless the hour of delivery and payment is particularly specified at the time of sale) shall be delivered, and the payment made before Three o'clock on the succeeding day.

X.

IN all cases of contracts for time, the contracts shall be prepared by the Auctioneer, and the parties shall attend at his office in the course of the second day after the Sale, to execute and exchange them.

XI.

IN all cases where the Stock sold is not transferred or ready to be delivered at the time specified at the sale, agreeably to the foregoing rules, it shall be at the option of the purchaser to make void the bargain or to order a Sworn Broker to make immediate purchase of the same Stock for Cash, and in case of any loss arising from such purchase, the party who failed in the delivery shall be bound to pay the difference, together with the Broker's Commission.

IN like manner, where the purchaser is not ready with his payment, it shall be at the option of the seller to make void the bargain, or to order the same Stock to be immediately sold by a Sworn Broker, for Cash, and the party failing shall be bound to re-transfer the Stock to the person to whom the Broker may have sold it, and to make good the difference, if any there shall be, to the original seller, besides paying the Broker's Commission.

XII.

IN case of the failure of any person to comply with his contract, or to make good the difference, agreeably to the foregoing, it shall be considered the duty of the other party to report the circumstances of the case to the Dealers at large—who will thereupon determine whether the party failing shall be published as a Defaulter, and if determined in the affirmative, his Name shall be posted up in the Room, after which he shall not be suffered to purchase or sell at any of the Public Sales.

XIII.

NO Lots of Land, or any thing foreign to the Public Funds, shall be put up at Auction in the Stock-Room, until the Sale of Stock is declared to be over.

XIV.

THESE Rules shall take place on the 1st of October; they shall be subscribed by the several Dealers and Auctioneers—and the Dealers shall thereby pledge themselves not to do any business with any Auctioneer who shall not have subscribed them.

Richard Platt, Chairman.

[PRINTED BY CHILDS and SWAINE.]

Source: Broadsides, SY1791, no.39 (New-York Historical Society).

The need for formalization and regulation carried over into the early months of 1792 as a "stock exchange office" opened at 22 Wall Street in lower Manhattan. The office claimed to be "a large convenient room for the accommodation of the dealers in stock, and in which public sales will be daily held at noon."[137] Of course, these beginnings of the New York Stock Exchange did not prevent the Panic of 1792, which stemmed from a combination of William Duer's maverick speculation and poor discount and lending policies at the BUS and BoNY. However, the formalization of New York stock markets took another step forward when 24 brokers signed the Buttonwood Agreement on May 17, 1792, which presaged the New York Stock and & Exchange Board. The members signed the Agreement just after the peak of the Panic of 1792, further entrenching the stimulative effect of the crisis in the construction of stabilizing financial institutions. The Agreement stipulated commission rates and organized brokers into a professional group privy to uniform information and regulatory oversight.[138] Similar organizations arose in Philadelphia and Boston, only further stabilizing investment finance in the early Republic. Legal scholar Stuart Banner argues that early American brokers' success in standardizing rules for the market and creating a system for resolving disputes made American equity and bond markets more liquid and efficient, and thus dramatically lowered the cost of capital investment in early America.[139]

The Hamilton Treasury's intervention during the Panics of 1791 and 1792 served as another stabilizing force in the early American financial system. By serving as a lender of last resort on three separate occasions between August 1791 and May 1792, Hamilton asserted the

[137] "Stock Exchange Office," *New York Daily Advertiser*, February 15, 1792, page 3, America's Historic Newspapers.
[138] Werner and Smith, *Wall Street*, 25.
[139] Stuart Banner, "The Origin of the New York Stock Exchange, 1791-1860," *The Journal of Legal Studies* 27, No. 1 (Jan., 1998), 114-115.

federal government as a player in financial markets and protector of macro-financial stability. In the short term, Hamilton's market interventions prevented a systemic collapse of the financial system that, with all its defects, provided vital liquidity and credit to the broader US economy. In the long term, Hamilton's actions established the Federal government as an important part of the American financial system. "Because the panics [were] successfully contained," argue Richard Sylla, David Cowan, and Robert Wright, "the U.S. financial system…continued to develop so rapidly that it would come to equal, even to surpass, that of Britain by the 1830s." This macro-financial stability, and the subsequent growth of the financial sector, assured that the United States continued to grow its capital base and increased the depth of its credit markets.

Even more important than the protection of the early American financial system was the preservation of the constitutional regime on which the financial system rested. Thomas K. McCraw correctly observed that coming off the great Depression of the 1780s, "the [United States] was not yet a nation in anything but name, [and] persistent economic crisis raised the specter of political disintegration."[140] Hamilton and Washington constantly fretted about the viability of the constitutional regime if the financial system collapsed. Hamilton's emphasis on US securities markets, not BUS stock, during the bailouts serves as tangible evidence of Hamilton's primary concern.

While the Panics of 1791 and 1792 caused widespread political pushback, Hamilton's preservation of the broader regime ensured that these changes took place within the bounds of the democratic-capitalist framework established by the Constitution. Nonetheless, the Panics of 1791 and 1792 had profound effects on electoral politics. The Panics brought speculation into the limelight, and Pennsylvania legislators responded with considerable attention. Within several

[140] McCraw, *The Founders and Finance*, 47.

months of the Panics' resolution, aggrieved representatives presented several regulatory bills to the Pennsylvania legislature. The first proposed a 1 percent tax on auction sales and a 10 percent penalty on futures and wager contracts. A second bill "to prevent the practice of stock jobbing" emerged in Pennsylvania's lower house soon thereafter. Opponents narrowly defeated both bills by claiming that Philadelphia's commercial industry would decamp for New York, a reasonable argument for a city that just lost the nation's political capital to the Potomac. However, the New York legislature passed anti-speculation laws in the Spring of 1792 that limited public securities auctions and voided time contracts and wager stock deals.[141] The near passage of anti-speculation legislation in Philadelphia and New York demonstrate the extent to which the Panics of 1791 and 1792 drove Americans and their representatives to curtail financial speculation.

While the Panics shifted national political power toward anti-finance Republicans, the American system of democratic-capitalism remained entrenched.[142] Up until the Civil War, the American commercial sector accepted self- and local-regulation of markets while the federal government protected larger market structures.[143] Associations like the New York Stock and Exchange Board and Chambers of Commerce worked with local governments to ensure stable markets. Meanwhile, the federal government provided institutional stability and interstate flows of goods and capital.[144] While highly-flawed, this tacit understanding ensconced a division of regulatory authority that remained viable through the 1850s.

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[141] Werner and Smith, *Wall Street*, 24.

[142] For more on the political implications of the Panics of 1791 and 1792, see Scott C. Miller, "Never Did I See So Universal a Frenzy": The Panic of 1791 and the Republicanization of Philadelphia, *The Pennsylvania Magazine of History and Biography* 142, No. 1 (Jan. 2018), 31-48.

[143] See Stuart W. Bruchey, *Enterprise: The Dynamic Economy of a Free People* (Cambridge, Mass.: Harvard University Press, 1990); Drew McCoy, *The Elusive Republic: Political Economy in Jeffersonian America* (Chapel Hill: University of North Carolina Press, 1980); Naomi R. Lamoreaux, *Insider Lending Banks, Personal Connections, and Economic Development in Industrial New England* (Cambridge: Cambridge University Press, 1994); and Howard Bodenhorn, *A History of Banking in Antebellum America* (New York: Cambridge University Press, 2000).

[144] William J. Novak, *The People's Welfare: Law and Regulation in Nineteenth-Century America* (Chapel Hill: University of North Carolina Press, 1996), 6-17.

The Panic of 1797

Flush with foreign demand and an increasingly integrated domestic sector, the American economy recovered quickly from the Panics of 1791 and 1792. The Hamilton Treasury's decisive actions prevented the panics from infecting the broader economy. As shown in Figure 1.8, the American economy grew rapidly between 1792 and 1796. Expanding investment in mills and transportation improvements supercharged internal traffic in the grain and flour trade, while imports and domestic consumption followed suit.[145] A combination of loose monetary policy by the Bank of England and credit expansion by the growing American financial sector facilitated tremendous economic activity through late 1796.

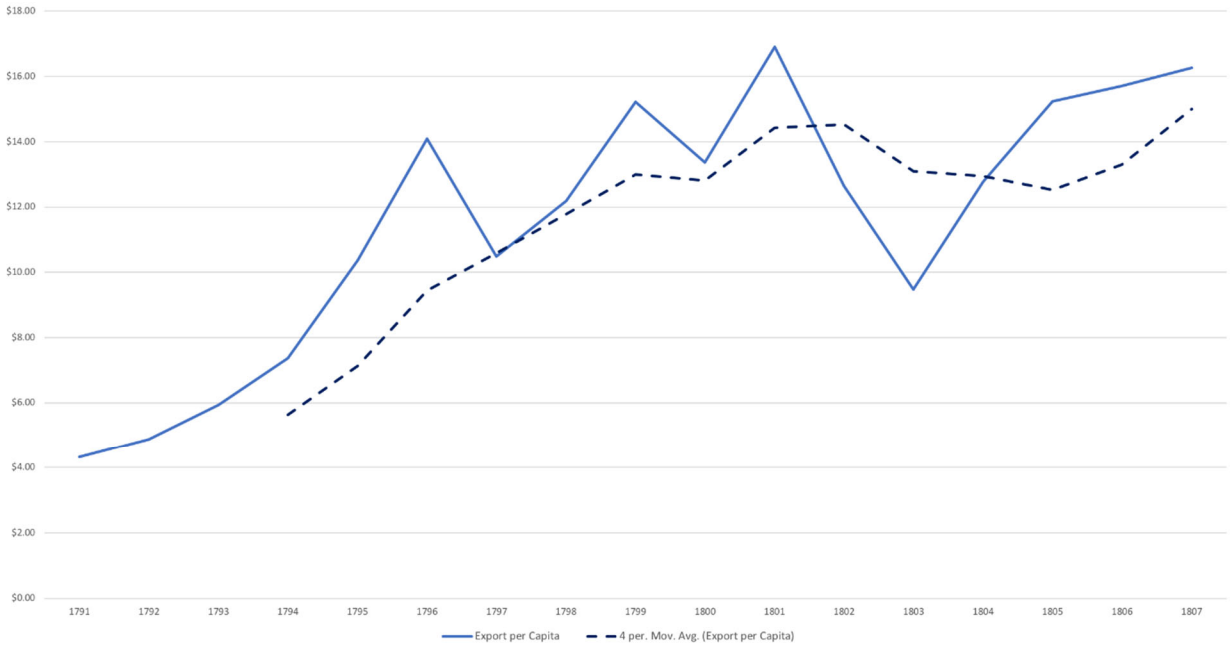
The early-1790s economic boom came to a screeching halt in early1797. Historian Richard S. Chew suggests that three critical factors caused the crisis—a significant credit contraction across the Atlantic World, the Quasi-War with France, and a Yellow Fever epidemic that struck with ferocity in 1797 and 1798.[146] In late-1796, a contraction of credit across the Atlantic world and skyrocketing risk premiums due to French seizures of American vessels shocked the American economy into recession. The Yellow Fever epidemic compounded the contraction later in 1797 by constraining American commodity supplies while isolating pockets of surplus in American port cities. Rising costs of trade produced cascading waves of defaults and credit restrictions that felled massive land speculation schemes fronted by prominent Americans such as Robert Morris and James Wilson. With American banks unable to contain the fallout, a significant contraction spread across the entire economy. The United States showed

[145] Peter C. Mancall, *Valley of Opportunity: Economic Culture along the Upper Susquehanna, 1700-1800* (Ithica, N.Y.: Cornell University Press, 1991), 176; Import/export data show a surge of imports between 1792 and 1796. In fact, US net exports in 1791-1793 and 1795 were negative and only dipped into positive territory in 1794 by a razor-thin margin.

[146] Richard S. Chew, "Certain Victims of an International Contagion: The Panic of 1797 and the Hard Times of the Late 1790s in Baltimore," *Journal of the Early Republic* 25, No. 4 (Winter 2005), 567.

negative growth in both 1797 and 1798, and the recession resulted in a virtual stagnation of American exports per capita (see Figure 2.5). The downturn marked the first instance of negative growth since the 1780s.

Figure 2.5: US Export Tonnage per Capita, 1791-1807



Source: Douglass C. Morth, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), 573-628; Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 219-233; Louis Johnston and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2018.

While most histories argue that European demand drove the mid-1790s commercial boom, a surge in credit played an equally important role. After numerous financial crises in 1772, 1783–1785, and 1792-1793, British investors began looking outside of Europe for returns.[147] English bankers recognized the potential of the American re-export trade in the face of Napoleonic conflict and began pumping capital into the American market. While this sometimes included equity stakes, British capital most often came in the form of lenient credit arrangements.[148] While American trade with the British homeland and West Indies regressed

[147] Clapham, *The Bank of England*, 255-267; Chew, "Certain Victims of an International Contagion," 578;
[148] Larry Neal, *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason* (Cambridge: Cambridge University Press, 1990), 238; Stephen Quinn, "Money, Finance, and Capital Markets," in Roderick Floud and Paul Johnson, *The Cambridge Economic History of Modern Britain*, Vol. 1 (Cambridge: Cambridge University Press, 2004), 155-164;

considerably from colonial levels, the new wave of British investment offered new life to American commercial structures facing scarce credit and high interest rates. The Bank of England exacerbated this foreign investment by increasing the money supply following several financial shocks in the early 1790s. These monetary infusions lowered interest rates in Great Britain, making it more profitable for British investors to borrow at home and invest in, or offer cheap credit to, American firms. Thus, in the mid-1790s, American commercial actors benefitted from easy credit and high demand in both domestic and foreign markets.

In addition to aiding a commercial boom, the easy credit of the mid-1790s facilitated widespread land speculation. The details of the American land speculation boom need not be revisited here.[149] Nonetheless, speculators like Robert Morris and John Nicholson relied on easy credit and note issuances to finance vast land purchases. To acquire vast tracks of land in upstate New York, New Hampshire, and Massachusetts, Morris and Nicholson procured huge loans at low rates and financed the interest by issuing millions of dollars of "M & Ns," their own commercial paper.[150] Backed by the land itself and Morris's personal assets, including his vast commercial empire, these notes initially circulated at par value. However, as clouds accumulated over the American economy, investors began to doubt the value of Morris's notes. If interest rates increased, Morris would struggle to finance his massive debts.

The first warning signs arose in 1795 when the British government of William Pitt took out two large loans from the Bank of England (BoE). Faced with escalating war costs, the government procured another major loan in mid-1796 that put heavy strains on the BoE's gold

[149] Michael Albert Blaakman, "Speculation Nation: Land and Mania in the Revolutionary American Republic, 1776-1803" (Ph.D., Yale University, 2016), 301-375; Alan Taylor, "From Fathers to Friends of the People: Political Personae in the Early Republic," in Doron S. Ben-Atar and Barbara B. Oberg, eds., *Federalists Reconsidered* (Charlottesville: University of Virginia Press, 1999): 225-45. Charles Rappleye, *Robert Morris, Financier of the American Revolution* (New York: Simon & Schuster, 2011), 490-516.
[150] Mann, *Republic of Debtors*, 201.

reserves.[151] Toward the end of that year, rumors swirled of a French invasion and investors worried that the government would seek another loan to bolster coastal defenses. As a result, English country banks began withdrawing funds from the BoE. Facing a run on the BoE and the possibility of insolvency, the directors of the BoE suspended payments of gold and silver on February 27, 1797.[152]

Even before the BoE specie suspensions, the prospect of economic warfare in Europe shook American markets. Interest rates began rising in mid-1796 in anticipation of a broadening of the European conflict. When combined with the severe monetary contraction caused by the BoE, American credit and money markets slowed considerably. "M & Ns" dropped well below their face value as the commercial ventures and landholdings backing this commercial paper diminished significantly in value. As a result, speculators like Morris struggled to keep up with their interest payments.

As Europe entered a full-blown monetary crisis, demand for American exports contracted as well, resulting in significant downward pressure on commodity prices. Thus, the American merchants who had gorged themselves on cheap credit suddenly faced significant declines in revenue. With their income declining and their debt remaining constant, merchant-speculators confronted the prospect of defaulting on their obligations. Interest rates rose to approximately 10 percent in the Netherlands and Britain, and 34 percent in France, leaving Americans without recourse as their debts came due.[153] While American financial institutions struggled to keep interest rates steady, they quickly succumbed to the power of the BoE specie suspensions.

[151] Chapham, *The Bank of England*, 251-257.
[152] Chew, "Certain Victims of an International Contagion," 584-585.
[153] David Hackett Fischer, *The Great Wave: Price Revolutions and the Rhythm of History* (Oxford: Oxford University Press, 1996), 129–30, in Chew, "Certain Victims of an International Contagion," 586.

As the European credit contraction struck indebted American merchants, geopolitical events only added uncertainty and risk to the already teetering economy. The undeclared Quasi War in which French naval vessels preyed on American merchant ships curtailed American trade in the Atlantic and Caribbean. Confiscated ships and cargo dealt a significant financial blow to the American merchant community, but the dramatic increase in insurance rates rocked the entire export industry. Richard S. Chew found that maritime insurance rates for trans-Atlantic voyages nearly doubled between June 1796 and June 1797, while coverage for journeys to the West Indies tripled from approximately 4 percent to 12 percent over the same period.[154] Many American merchants simply could not afford to insure their voyages, resulting in growing surpluses of agricultural commodities like flour and Indian corn in port cities such as Philadelphia, Baltimore, and Charleston. In addition to falling export prices, these gluts put significant deflationary pressure on domestic market prices as well. Simply put, American merchants faced closed markets abroad, falling commercial revenues, and the beginnings of a deflationary cycle in the domestic sector.

A yellow fever outbreak in several major port cities during the summer of 1797 only further disrupted market operations in both the foreign and domestic sectors.[155] Not only did the plague reduce port productivity by driving a significant part of the commercial population into the countryside, but the lack of export activity exacerbated the glut that formed due to rising insurance premiums and slack European demand.[156] While increasing domestic market integration began to smooth supply asymmetries by the mid-1790s, the yellow fever epidemic

[154] Chew, "Certain Victims of an International Contagion," 591-592.
[155] Martin S. Pernick, "Politics, Parties, and Pestilence: Epidemic Yellow Fever in Philadelphia and the Rise of the First Party System," *The William and Mary Quarterly* 29, No. 4 (Oct., 1972), 564-565; J.H. Powell, *Bring Out Your Dead: The Great Plague of Yellow Fever in Philadelphia in 1793* (Philadelphia: University of Pennsylvania Press, 2009), xiii.
[156] Chew, "Certain Victims of an International Contagion," 573.

made it difficult for entrepreneurs to take advantage of arbitrage opportunities. The constant threat of disease transmission added additional uncertainty to an American economy already reeling from a credit crunch and military conflict.

The American economy entered a full-blown crisis by the last quarter of 1796. "By December 1796 business failures were epidemic," Bruce M. Mann writes. "Benjamin Rush counted 150 failures in six weeks in Philadelphia and sixty-seven people imprisoned for debt in two weeks. Among them was James Wilson, whose extensive speculations had been a continuing distraction from his duties as an associate justice of the United States Supreme Court, to which he had been appointed in 1789." Speaking of the mercantile community in Philadelphia, Robert Morris reported to a friend, "People are ready to tear one another to pieces."[157] Morris knew of what he spoke. With his "M & N" notes circulating as low as 10 percent of their face value and interest rates superseding 30 percent on short-term loans, Morris found himself staring down massive debts with nowhere to turn.[158]

American financial institutions had insufficient capital and too little crisis fighting experience to counteract the downturn.[159] Rather than expanding their balance sheets to counteract the credit contraction, American banks recoiled from the pressure. "Instead of putting the needs of the community first," Chew writes of Baltimore's bankers, "the bank directors decided to protect their own interests by contracting credit. The Baltimore branch of the Bank of the United States, which had usually been reluctant to extend credit, proved especially so during

[157] Mann, *Republic of Debtors*, 201-202.
[158] Mann, *Republic of Debtors*, 202.
[159] It is important to note that Alexander Hamilton left the Treasury Department nearly two years before the Panic of 1797. While a reasonably competent businessman, his successor, Oliver Walcott Jr., proved to be an unimaginative policymaker. As shown above, Hamilton had shown a remarkable ability to navigate limited resources and minimal institutional knowledge in the face of commercial crisis. In fact, in the spring of 1792 Hamilton had coordinated banks across the country in an effort to ease credit and provide countercyclical stimulus in the midst of growing credit scares and a contraction of the money supply. One can only imagine how Hamilton would have fought the Panic of 1797 had he been in office.

the Panic."[160] Banks in Philadelphia, New York, and Boston followed similar paths, resulting in a near paralysis of both domestic and foreign commerce. With debt payments due and no credit to be found, Robert Morris had exhausted his options. By the end of the year, Morris and his partners in speculation John Greenleaf, John Nicholson, and Supreme Court Justice James Wilson found themselves in debtors' prison.[161]

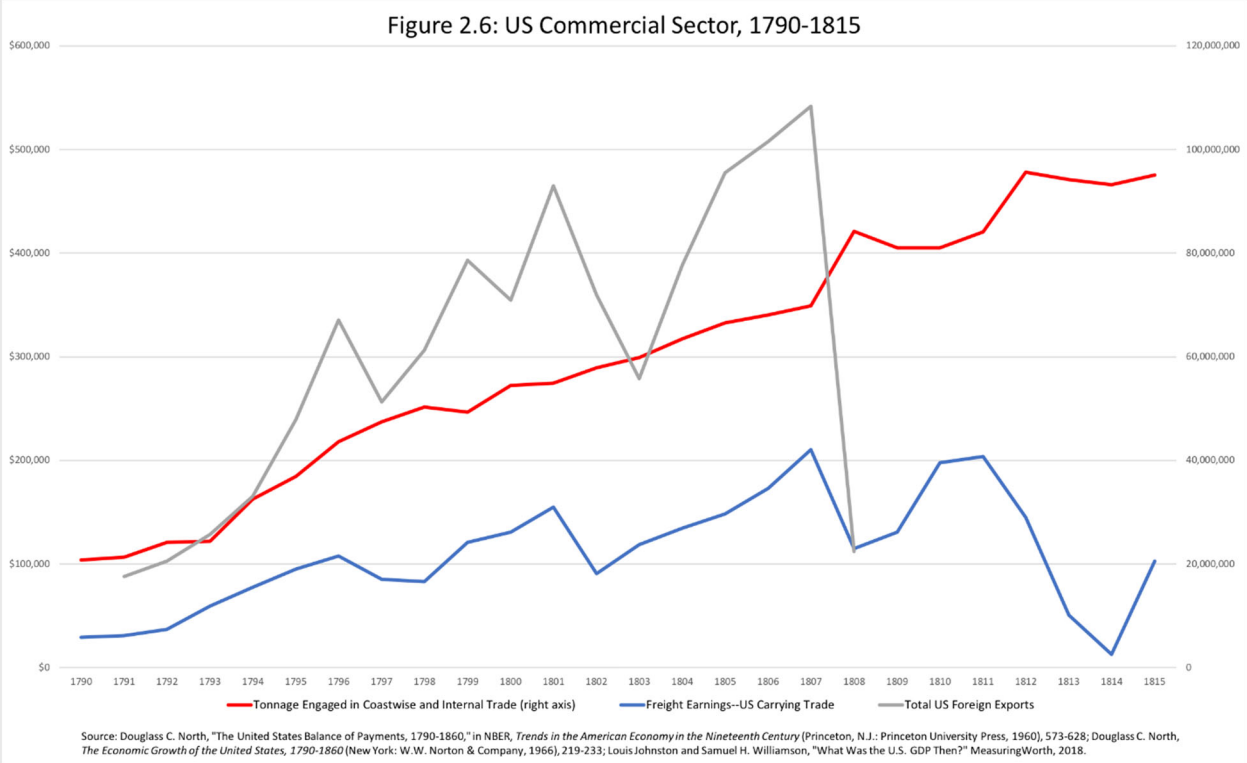
The Panic of 1797 wreaked havoc on an American economy that had been growing at a record pace. In addition to the widespread bankruptcies and interest rate fluctuations, the Panic of 1797 exacerbated an already unstable macroeconomic atmosphere in the United States. While price volatility certainly spiked during the Panic, significant price movements were commonplace throughout the 1790s and early 1800s. Likewise, while the Panic of 1797 subsided with the diminishment of the Quasi War and lifting of the yellow fever threat in 1799, exports per capita never returned to their early-1790s growth trajectory. The widespread commercial crisis produced lasting economic effects that compounded secular volatility and moved Americans to embrace the domestic market even more vehemently.

Promoting Domestic Dynamism

The Panic of 1797 struck the American economy with a ferocity that domestic discord and geopolitical chaos often obscures. While the Panics of 1791 and 1792 emerged and then dissipated in a matter of months, the Crisis of 1797 took shape over the better part of two years. The crisis did not threaten any fundamental institutions and while succeeding waves of bankruptcy felled some of America's most prominent businessmen, one would be pressed to identify the seminal moments that often define great financial panics. Nonetheless, the Panic of

[160] Chew, "Certain Victims of an International Contagion," 596.
[161] Mann, *Republic of Debtors*, 203-204.

1797 had a profound negative impact on short-term growth (see Chapter 1, Figures 1.8 and 1.9). More importantly, however, the Panic of 1797 resulted in several structural reforms that reshaped the American entrepreneurial experience moving forward. By shifting Americans towards the domestic sector in spawning the adoption of bankruptcy statutes, the United States became more concentrated and more dynamic.



The Panic of 1797 accelerated American merchants' movement toward the domestic market. While declining prices and the effects of the yellow fever epidemic certainly injured domestic trade, those problems subsided after 1798. However, the domestic economy did not suffer in the same way as foreign trade. Soaring insurance rates and related increases in the cost of international trade crushed the export industry. Additionally, foreign voyages required much more capital than domestic trade, and thus the credit crunch disproportionately affected those engaging in long-distance commerce. For many merchants, the higher cost of foreign trade in normal times resulted in relatively low profit margins on standard voyages to Europe or the West

Indies. Thus, insurance rates that doubled or even tripled eliminated almost any prospect of profit even if the voyage went as planned. When combined with lower European demand and declining commodity prices, many merchants decided that foreign trade simply did not merit the risk.

The expanding domestic sector provided a viable alternative for dispirited foreign traders. Recent investments in roads and river navigation allowed for high-volume transfers of domestic resources by river or land (see Chapter 3). However, significant progression in the coastwise shipping trade made distant American markets viable alternatives to ports in Europe or the West Indies. Unlike insurance premiums on foreign voyages, rates on domestic commerce showed little if any change. Likewise, domestic voyages required less capital investment, lessening the impact of the credit crunch.[162] Finally, as discussed in Chapter 3, the 1780s saw an acceleration in the production of small vessels used for coastwise shipping. For all these reasons, the relative costs of domestic shipping fell dramatically compared to that of foreign commerce. Thus, as shown in Figure 2.6, coastwise trade remained on a constant trajectory during the Panic of 1797 while foreign exports fell dramatically.

Of course, some foreign traders returned to foreign commerce as credit became less expensive and the threat of French corsairs diminished. However, domestic trade in the United States continue to grow compared to foreign trade for several reasons. First, the general risk factor of domestic trade stood much lower than that of its foreign counterpart. Shipping goods along the American coast carried far fewer risks than shipping them across the Atlantic. During the colonial period, coastwise trade remained low because domestic demand could not support the prices needed to justify coastwise shipping costs. However, as American markets grew more interconnected, rising demand allowed domestic producers to find eager markets within the

[162] Chew, "Certain Victims of an International Contagion," 591.

United States. Second, marginal costs for domestic trade fell much faster and more consistently than those in the foreign sector. Investments in river navigation, vessels suitable for coastwise trade, roads, bridges, and other transportation technology all drove down the costs of domestic commerce. While the inflated costs of foreign commerce spawned by the Panic of 1797 eventually subsided, marginal cost reductions remained infrequent and relatively small. Thus, the relative expense of foreign and domestic commerce diverged very quickly. As domestic trade costs continued to fall, the rapid expansion of the domestic market made it increasingly appealing to American merchants. The Panic of 1797 helped break many merchants' long-held path dependence on foreign markets by providing a viable and less-risky alternative at home.

The Panic of 1797 also forced legislators to reconsider the implications of an economic system anchored to capitalizing on risk. While mercantile trade always involved hazards, a disproportionate few import-export merchants shouldered the danger. Colonial markets remained separate from each other, and thus credit arrangements represented personal agreements between friends, family members, and neighbors. While varying slightly from colony to colony, pre-Revolutionary insolvency statutes viewed credit as a matter of personal honor and the repayment of debt as a matter of faith.[163] Thus, most colonial law viewed defaults on debt as akin to robbery or breaking an oath, both of which commanded a lengthy jail sentence.[164] However, as markets became more integrated and market access more democratized, the American capitalist system depended on escalating numbers of people engaging in entrepreneurial ventures. "Falling into debt would no longer be considered as a punishable sign of moral turpitude," historian Drew McCoy writes, "but rather as an unavoidable part of a business world in which merchants were

[163] Peter J. Coleman, *Debtors and Creditors in America: Insolvency, Imprisonment for Debt, and Bankruptcy, 1607-1900* (Washington D.C.: Beard Books, 1999), 3-5 & 249-257.
[164] Vern Countryman, "A History of American Bankruptcy Law," *Commercial Law Journal* 81 (Jun., 1976), 227-228.

forced to cope with the natural vicissitudes of trade."[165] America could not become a modern commercial power with a quasi-feudal legal structure, pro-business legislators like James A. Bayard of Delaware argued. Just as Revolutionary Americans swept away archaic British political control, Bayard contended, so should they rewrite business law from another era.[166]

The question of how to support and regulate America's capitalist evolution dominated contemporary thought over laws governing insolvency. Bankruptcy legislation came before Congress after the Panic of 1792, but gained little support. However, the widespread bankruptcies during the Panic of 1797 renewed interest in America's codes governing insolvency. For Bayard and his allies, "a bankruptcy law would support mercantile credit while facilitating the financial risk-taking necessary to an advanced commercial society," McCoy writes. "A national law would ensure uniformity from state to state, which would further encourage merchants in their expansion of America's trade."[167] In the new, post-colonial world, Bayard argued, "debts of great magnitude must be contracted; and the most honest and prudent man may, by accidents and misfortunes incident to commerce, be deprived of the means of making good his engagements."[168] In other words, the legal system could not separate commercial risk and uncertainty from the benefits of America's commercial capitalism. Any nation with the natural advantages of the United States, Bayard argued, should do everything in its power to encourage its citizens to take advantage of them.

In addition to incentivizing the investment needed for capitalist enterprise, Bayard argued for the importance of merchants being allowed to fail. Imprisoning an "honest merchant" made insolvent by "the loss of his ships, or other unforeseen misfortunes," would not only be unjust,

[165] McCoy, *The Elusive Republic*, 179.
[166] McCoy, *The Elusive Republic*, 181.
[167] McCoy, *The Elusive Republic*, 179.
[168] Mann, *Republic of Debtors*, 208-209.

Bayard claimed, but also a genuine loss "to his family, his friends, and his community." Rather, American society would be better served if the merchant's creditors could divide his possessions and then leave him "at liberty to begin the world anew."[169] At its heart, Bayard's bankruptcy bill sought to maximize America's financial and human capital. Imprisoning debtors not only disincentivized commercial risk-taking, but it threatened to deprive the new nation of vital entrepreneurial talent.

After a considerable battle, Bayard's bankruptcy bill became law in 1800. Future treasury secretary Albert Gallatin led the opposition comprised mostly of Jeffersonian allies. Gallatin raised numerous objections, many of which fit squarely in the Jeffersonian tradition of localism and agriculturalism. Gallatin argued that many states had already begun eliminating debt imprisonment and a wide-ranging federal standard would only distort local commercial climates. Gallatin also feared at the proposed bill would lead to the seizure of farmers land should they fall behind on debt payments that did not fit the traditional mercantile calendar. However, the most effective argument against the bankruptcy bill came from its foolish prescription that bankruptcy statues only apply to merchants since only they could not avoid substantial economic risk.[170] While the bankruptcy bill eventually passed, the shortsighted provision that favored merchants eventually became its downfall. Congress repealed the bankruptcy bill in November 1803.[171] Nonetheless, the passage of new bankruptcy legislation, as short-lived as it may have been, accelerated state efforts to incentivize risk-taking and entrepreneurial activity. While federal actions to unify bankruptcy protection ebbed and flowed over the antebellum era, a combination

[169] Mann, *Republic of Debtors*, 208-209.
[170] Mann, *Republic of Debtors*, 208.
[171] McCoy, *The Elusive Republic*, 183.

of local and state legislation and federal court restructuring made risk-taking a much less risky venture as the nineteenth century began.[172]

Conclusion

Contrary to the visions of postwar commercial utopia set forth by Americans like John Chaloner and Jeremiah Wadsworth, the post-Revolutionary era teemed with economic instability and crisis. Between the Treaty of Paris and Jefferson's Revolution of 1800, the United States experienced a massive depression during the 1780s, two financial crises in 1791 and 1792, and a large-scale commercial recession in 1797 and 1798. Yet the air of instability did not diminish after Republicans took power. The nation experienced another recession in 1802, likely caused by the Peace of Amiens that cut European demand for American foodstuffs.[173] Not long after, the American agricultural sector suffered widespread blights and floods in 1804 and 1805 that caused dramatic volatility in agricultural commodity prices. Then came Jefferson's embargo in 1807 and 1808 that halted almost all foreign trade. In between these acute crises, the American economy suffered widespread cash shortages and credit scarcity, in addition to price swings that impacted supply chains and distorted commodity markets across the country.

Despite widespread economic growth, the years between the Treaty of Paris and Jefferson's embargo can credibly be considered the most crisis-filled era in American history. The Depression of the 1780s rivaled the Great Depression in scope and depth, yet it fell on a more vulnerable, politically divided, and poorer population than did its twentieth century

[172] Countryman, "A History of American Bankruptcy Law," 229-230.
[173] North, *The Economic Growth of the United States*, 53; While North is right that peace in Europe played a role in tipping the American economy into recession, a curtailment of foreign trade does not tell the whole story. While net exports fell by $45.8 million in 1802, the domestic market fell by $52.73 million in the same year. Of course, the declining exports comes from a much smaller base and therefore represents a much higher percentage drop. Nonetheless, the fact that the domestic market contracted at all—the only other years in which it did so were 1798 in 1807—signifies that much more took place in the American economy and besides a contraction of the foreign demand.

counterpart. The debt-deflation cycle that ripped through the economy in the 1780s victimized Americans across the class structure, from Woody Holton's "unruly Americans" to Lindert and Williamson's "people at the top."[174] The Panics of 1791 and 1792 had less of a national impact, though they caused significant crisis in America's port cities. Alexander Hamilton's timely interventions not only prevented complete financial meltdown, but they may have saved Americans' faith in banks altogether.[175] The Panic of 1797's complexity rendered it difficult to stop—even Hamilton would have struggled to contain it. The combination of geopolitical, credit, and commercial shocks squeezed the new economy and hampered export growth per capita for the remainder of the early Republic. Altogether, these crises embroiled the new United States in virtually uninterrupted economic instability for the first 25 years of its existence as an independent nation.

Despite their deleterious effects, these crises played a fundamental role in the development of American capitalism. Capital concentration arising from the bankruptcies of the 1780s supported continuous investment for the first time in American history. Even more importantly, the Confederation era produced the Constitution, which removed interstate economic barriers and created a vast free trade zone amongst the formerly segmented states. After the Panics of 1791 and 1792, stockbrokers embarked on an ambitious program of formalization and regulation that stabilized financial asset exchanges for a generation. The American government also showed that it could be a stabilizing force in open markets. By establishing the US government as a lender of last resort, the Hamilton Treasury provided a baseline of investor confidence in an incredibly volatile era. Likewise, the push for bankruptcy

[174] Woody Holton, *Unruly Americans and the Origins of the Constitution* (New York: Hill and Wang, 2007), 4-12; Peter H. Lindert And Jeffrey G. Williamson, *Unequal Gains: American Growth and Inequality since 1700* (Princeton, N.J.: Princeton University Press, 2016), 89-90.
[175] See footnote 115.

legislation after the Panic of 1797 supported the ability of merchants to take risks and fail without fearing lengthy prison terms. Increasingly, American risk-takers focused on the domestic sector. While the Constitution secured a free and open domestic market, the Panic of 1797 incentivized foreign traders to invest time and resources in the burgeoning domestic market. In the end, the volatility of the Founding Era provided opportunities and incentives for structural, institutional, and market reforms that defined and shaped the American economy well into the nineteenth century.

Chapter 3

Markets: Integration and Growth

In June 1784, Levi Hollingsworth of Philadelphia scrambled to understand the discordant series of American markets. Born into a wealthy family in Head of Elk, Maryland in 1739, Hollingsworth moved to Philadelphia as a young man and quickly built the most powerful flour brokerage in the mid-Atlantic region.[1] During the Revolution, Hollingsworth became the first quartermaster of the Light Horse Regiment of the City of Philadelphia and served directly under George Washington at Trenton, Princeton, and numerous other engagements. By 1778, Congress decided that the skills that made Hollingsworth one of pre-war Philadelphia's preeminent merchants would be better used overseeing the acquisition and transportation of food for the Continental Army. When he returned to his firm full-time in 1783, Hollingsworth used his wartime contacts to build a network from New York to Charleston to capitalize on postwar peace and prosperity. With a dense resource network in the Delaware River Valley, Hollingsworth's firm, which primarily distributed flour but also dealt a wide array of commodities such as tobacco, corn, and spirits, stood ready to supply markets across the eastern seaboard.

Hollingsworth quickly learned that that the new American economy did not function as he thought it would. A remarkable series of letters from the first week of June reveal Hollingsworth's naiveté and the fragmented nature of the American economy upon independence. On June 1, 1784, Hollingsworth's agent William Ferguson wrote from Charleston, "I am sorry to inform you that my first attempt in adventuring has been very

[1] Mary Hollingsworth Jamar, "Hollingsworth Family and Collateral Lines of Cooch-Gilpin-Jamar-Mackall-Morris-Stewart; Early History and Cecil County, Maryland Lines" (Philadelphia: Historical Publication Society, 1944); Brooke Hunter, "Rage for Grain: Flour Milling in the Mid -Atlantic, 1750–1815" (Ph.D., University of Delaware, 2002).

unfortunate. This market is as glutted with every article of our produce as to effectually prevent a sale."[2] Just a few days later on June 5, Hollingsworth's brother Thomas wrote him from Baltimore, urging Levi to send flour and Indian corn for sale.[3] The Baltimore market sat empty, Thomas reported, and mighty profits could be made if the Hollingsworths could quickly supply the burgeoning port city. Throughout the week, Levi Hollingsworth received similarly discordant letters from contacts in New York, Baltimore, and his home base in Head of Elk, Maryland. Markets either faced gluts or scarcities, many of which existed for weeks or even months on end.

The same day that Thomas Hollingsworth wrote to his brother from Baltimore, Levi Hollingsworth received an exasperated letter from his New York-based business partner Murray Sampson. Sampson railed about the lack of connection between American markets, detailing how the lack of information about different markets increased the costs of trade. Merchants did not know where they would fine a favorable market, and thus had to speculate on where and when their products would meet ready buyers and suitable prices.[4] It is not accidental that William Ferguson used the word "adventure" to describe his trip to Charleston, the same exact word he would use several years later to describe voyages to China and the Rio de la Plata.

Like his colleagues, Levi Hollingsworth dealt with the problems of attempting to trade in segmented markets first hand.[5] If a supply of Hollingsworth's flour built up in a particular city, his agents had few ways to arbitrage the superfluous product to more favorable markets. In the best-case scenario, the agents could sell the flour at a high discount. In the worst, the flour would

[2] Thomas Ferguson to Levi Hollingsworth, June 1, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[3] Thomas Hollingsworth to Levi Hollingsworth, June 5, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[4] Murray Samson & Company to Levi Hollingsworth, June 5, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[5] Levi Hollingsworth to Henry and John Thompson, December 21, 1786, Box 25, Folder 6, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

rot. Indeed, the American market's divisions matched the nation's disparate political and geographical nature. The highly local or regional economies of the colonial era supported high standards of living due to the abundance of cheap land. However, Hollingsworth understood that as the population expanded and land became more expensive, prosperity in the new United States would rely on the expansion of trade, both overseas and at home.[6] To do so, Americans needed to connect their markets so that goods and information could flow more freely.

To Hollingsworth's approval, the American economy experienced a rapid integration of its domestic market during the first two decades of independence from Great Britain. While previous histories such as Gary M. Walton and James F. Shepherd's *The Economic Rise of Early America* have suggested that market integration mattered much to early American economic development, this chapter details the process by which American commercial and political actors tied American markets together.[7] Of course, complete national market integration did not emerge into well into the nineteenth century when technological advancements such as telegraphs, steamboats, and railroads made communication nearly instantaneous and drastically reduced transportation costs. However, the era of the American Revolution—encompassing the decade before it and the two decades after—marked a revolutionary and permanent movement amongst American markets toward domestic integration.

The colonies of British North America had always maintained elemental connections between each other. However, in most cases colonial markets remained local or regional at best. While much of the scholarship has focused on exports as the driver of colonial economic development, historians such as Edwin Perkins, Paul G. E. Clemons, James T. Lemon, Gregory

[6] To Hollingsworth, part of this "expansion of trade" meant the geographical expansion of the United States itself. As such, in addition to his commercial activities Hollingsworth became an ardent land speculator.
[7] Gary M. Walton and James F. Shepherd, *The Economic Rise of Early America* (Cambridge: Cambridge University Press, 1979), 3-6.

A. Stiverson, and James A. Henretta have debated the functions of domestic market structures.[8] Lemon suggests that farmers in Pennsylvania strove to maximize profits and took considerable risks to increase their surplus for market.[9] Stiverson, Perkins, and Henretta contest this view, arguing that "the production of foodstuffs for personal consumption was the chief source of real income for southern as well as northern farmers."[10] Nonetheless, both sides of the debate agree that even if Americans sought to produce for the broader market, transportation, communication, and technological constraints confined the vast majority of Americans to small and isolated markets.

In the segmented colonial market, a small group of major mercantile actors linked Americans to other cities, regions, colonies, or countries. The Brown family mercantile firms of Providence, Rhode Island exemplify the tremendous integration of American markets during the first two decades of the early Republic. *Nicholas Brown & Company* ledgers for the years 1765-1769 almost exclusively feature local counterparties. When noted at all, most ledger book entrants live in Providence or what would now be considered the Providence metropolitan area including Bristol, Warwick, Cranston, Smithfield, Johnston, or Cumberland. Many entries include notes of familiarity, such as "John Dexter of Cranston (Son of Peleg)." Only approximately one percent of traceable entries fall outside a 40-mile radius of Providence, with *Sollomon Davis & Co*. of Boston and Oliver Arnold of London counting amongst the largest of

[8] Edwin J. Perkins, *The Economy of Colonial America* (New York: Columbia University Press, 1988), 31-37; Paul G. E. Clemens, "From Tobacco to Grain: Economic Development on Maryland's Eastern Shore, 1660-1750," *The Journal of Economic History* 35, no. 1 (Mar., 1975), 256-259; James T. Lemon, *The Best Poor Man's Country: Early Southeastern Pennsylvania* (Baltimore: John Hopkins University Press, 2002), 215-229; Gregory A. Stiverson, "Early American Farming: A Comment," *Agricultural History* 50 (1976), 37-44; James A. Henretta, "Families and Farms: *Mentalité* in Pre-Industrial America," *William and Mary Quarterly* 35, no. 3 (1978), 2-32.
[9] Lemon, *The Best Poor Man's Country*, 215-234.
[10] Richard B. Sheridan, "The Domestic Economy," in *Colonial British America: Essays in the New History of the Early Modern Era*, eds. Jack P. Greene and J.R. Pole (Baltimore: Johns Hopkins University Press, 1984), 43; Stiverson, "Early American Farming," 37-44; Henretta, "Families and Farms," 2-32.

this select group.[11] The records of *Obadiah Brown & Company* from 1758 to 1764 depict an even more geographically-limited commercial sphere.[12]

By 1801, however, the Brown family's commercial empire had expanded dramatically. Not only did the *Brown and Ives* company ledgers note numerous "Adventures" to Surinam, Monto Cristo, Copenhagen, Amsterdam, and the Rio de la Plata (most likely Buenos Aires and Montevideo), but it featured numerous entries from merchants in New York, Philadelphia, Charleston, and Boston.[13] During the 1780s, *Brown and Ives*'s predecessor *Brown and Benson* co-purchased a sloop with the Philadelphia firm *Hewes and Anthony* to establish a "coaster" route that would run constantly between the two port cities.[14] That *Brown and Ives*'s 1801 ledgers and daybooks quote debits and credits in dollars rather than pounds sterling only further illustrates the Americanization of the Browns' businesses. Between 1758 and 1801, the Browns exemplified the change of the American economy, from the expansion of American markets overseas to the integration of markets at home.

Records from over 30 archival collections in six states show that merchants like the Browns sowed the seeds of America's true Market Revolution even before the Revolution itself.[15] The shock of the Seven Years War and the deep recession that followed it bred greater

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[11] Nicholas Brown & Company, Ledger, 1765-1769, B1090, F6, Brown Family Business Records, The John Carter Brown Library at Brown University.
[12] Obadiah Brown & Company, Ledger B, 1758-1764, B1220, Brown Family Business Records, The John Carter Brown Library at Brown University.
[13] Brown and Ives, Ledger A, 1793-1801, B1341, Brown Family Business Records, The John Carter Brown Library at Brown University.
[14] James B. Hedges, *The Browns of Providence Plantations: The Colonial Years* (Providence, R.I.: Brown University Press, 1968), 307.
[15] Scholars of American history have used "free markets," "the market order," and, of paramount importance here, "the Market Revolution" to describe the emergence of the United States as an economic power. In most cases, historians conflate "the Market Revolution" with the process of industrialization. Unfortunately, these scholars not only misunderstand the meaning of America's "market revolution," they often misjudge its timing as well.

In many cases, the historiography of America's market revolution focuses on political economy, the final struggle between Jeffersonian agrarianism and Hamiltonian capitalist industrialism. Charles Sellers's widely-read *The Market Revolution: Jacksonian America, 1815-1846* (1991) frames the era as a period of tension between "market" and democratic forces—a struggle between capitalist industrialism and Andrew Jackson-led democratic

political, military, and especially commercial integration between the thirteen colonies. The challenges of fighting a continental war and provisioning the British force required local merchants to draw on resources from much greater distances than they had previously engaged.[16] After the conflict ended, merchants cemented and expanded the intercolonial trade lines that had proven so profitable during the war. Intercolonial shipping surged after the Seven Years War, growing five times the rate of exports to any other place on earth. The American Revolution only accelerated this commercial integration as newly independent states found themselves cut off from former markets in the British Empire.

Independence and the economic depression of the 1780s activated Americans post-Revolutionary market revolution. Chapter 1 details the expansion of American merchants into newly opened foreign markets across the globe, from Northern Europe to the Far East and Latin

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populism. In *The Market Revolution in America: Liberty, Ambition, and the Eclipse of the Common Good* (2009) John Lauritz Larson contests Sellers view of America's "market awakening" as a struggle between the populists and the elite. Instead, Larson presents the Market Revolution as a struggle between the forces of economic individualism and communitarianism, in which the individualists won out. Harry L. Watson made the politico-economic nature of the Market Revolution even more overt in *Liberty and Power: The Politics of Jacksonian America* (2006), as the Whig and Democratic parties became the primary combatants in America's market struggle.

Unfortunately, in much of the literature mentioned above, actual markets, meaning the places or systems in which individuals or firms exchange goods and services, rarely emerge. More importantly, these historians' conflation of Market Revolution with Industrial Revolution, ignores and omits the true market revolution that swept the United States during the last quarter of the eighteenth century. In *A Nation of Deadbeats: An Uncommon History of America's Financial Disasters* (2012), Scott Reynolds Nelson rightly suggests that, even the term "market revolution" is insufficient "because it relies on the same binary divide between pre-capitalist and capitalist forms of agriculture." This interpretation, Nelson argues, misunderstands "the intimate relationship between farming and commerce for most of the people who settled in the Americas."

As Sellers's title implies, the Market Revolution begins in 1815, a date concomitant with the beginnings of large-scale industrial production in the United States. While large-scale industrialization in the United States did not begin until the 1830s with the proliferation of railroads, the origins of a uniquely American system of manufacturing did take root in 1815 with the Springfield Armory reforms overseen by Colonel Roswell Lee. "The American System" of manufacturing featured the use of machines to produce interchangeable parts for weapons and other goods. Lee's reforms featured new accounting and purchasing systems, cost-cutting, coordination and quality control mechanisms, and new organizational structures that featured numerous master armorers leading small labor gangs within the armory itself. Since Sellers so connects market society with industrial society, he goes so far as to argue that, "by the end of the [eighteenth] century, a majority of free Americans lived a distinctive subsistence culture remote from river navigation and the market world" (5). Nothing could be further from the truth. Not only did the vast majority of late eighteenth-century Americans rely on and participate in market exchange, but they did so in an economic system that experienced a true market revolution during the previous quarter century.

[16] Cathy Matson, *Merchants and Empire: Trading in Colonial New York* (Baltimore: The Johns Hopkins University Press, 1998), 266-274; Alan Taylor, *American Colonies* (New York: Viking, 2001), 232-242.

America.[17] However, as Chapter 1 also argues, the domestic market, and expansion of it, played a much bigger role in the development of the early American economy. This chapter details the integration of American domestic markets that made the dramatic post-Revolutionary growth in productivity, specialization, and broader GDP possible.

Dating back to some of the earliest histories of the United States, scholars have assumed, in the words of Henry Adams, "the old thirteen provinces developed little more commercial intercourse with each other in proportion to their wealth and population than they had maintained in colonial days."[18] Quite the opposite, booming urban centers such as Boston, Providence, New York, Philadelphia, Baltimore, and Charleston fostered increasing specialization and market integration, while improved information flows and enhanced physical infrastructure bound these cities to each other and their rural hinterlands. As a result, colonial *markets* increasingly became an American *market*, resulting in the increased productivity, reduced volatility, and greater investment that facilitated the rampant economic growth of the 1790s and early 1800s.[19]

Urbanization

A fundamental driver of American market integration arose from vibrant growth of its urban centers and urban systems. At the advent of George Washington's presidency in 1789,

[17] For more on the global scope of early American trade, see James F. Fichter, *So Great a Proffit: How the East Indies Trade Transformed Anglo-American Capitalism* (Cambridge: Harvard University Press, 2010), Sam A. Mustafa, *Merchants and Migrations: Germans and Americans in Connection, 1776-1835* (Burlington, Vt., USA: Ashgate, 2001), and Fabrício Prado, *Edge of Empire: Atlantic Networks in Bourbon Rio de la Plata* (Oakland, California: University of California Press, 2016), 67.
[18] Henry Adams, *The United States in 1800* (Ithica, N.Y.: Great Seal Books, 1955), 8.
[19] Dougass C. North argued that, "The years 1793–1808 were years of unparalleled prosperity. The evidence suggests that this period was a high water mark in individual well-being which was to stand for many years." John J. McCusker went even further, claiming that US GDP per capita growth "between 1789 and 1793 [registered] at 1.5 percent, [with]a spectacular rate of growth, at 1.9 percent, between 1793 and 1800." Coming out of a colonial era where experts considered any economic growth as positive and .5 percent growth to be exceptional, McCusker's evaluation of the early Republic economic boom underscores the striking nature of the post-Revolution American economy. Other quantitative historians such a James F. Shepherd and Gary M. Walton and Gordon C. Bjork concur that the American economy virtually picked up its late-colonial prosperity after attainment of independence.

Philadelphia's 44,096 residents could have fit in just one of London's boroughs or Paris's arrondissements.[20] In the same year, the booming English industrial cities of Manchester and Liverpool easily doubled the population of America's largest urban centers. Estimates of England and Wales's urban population rate for 1801 ranged from 26.2 to 42 percent, with a statistical mean of 35.2.[21] By contrast, only five percent of Americans lived in urban areas. 85 percent of the American labor force worked in agriculture, and urban population rates remained very low, even compared to those that would emerge in the United States after 1840.

For comparative reasons, historians have long emphasized the United States' land abundance and agricultural comparative advantage, viewing cities as auxiliaries to agrarian-led growth rather than drivers of it. However, while America's cities remained small compared to their European counterparts for the better part of the nineteenth century, relative increases in urban populations in the United States had a profound impact on American economic development. In fact, the post-Revolutionary era marked a notable relative increase in urban density.[22] During the decades between 1790 and 1840, George Rogers Taylor wrote in *The Journal of Economic History*, "the rate of increase in the number of people living in cities was almost double that for the whole population and exceeded the urban growth rate attained in any post-Civil War decade."[23] This initial spark of urbanization catalyzed productive forces in America's newly independent economy, which helped it grow despite important interruptions in British markets and a lack of large-scale industrialization.

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[20] In 1790, London registered a population of nearly 1 million while Paris fielded a population of approximately 550,000 in 1790, down from 660,000 in 1784.
[21] Robert J. Bennet, "SN 7154—Urban Population Database, 1801-1911," *Economic and Social Research Council*, http://doc.ukdataservice.ac.uk/doc/7154/mrdoc/pdf/guide.pdf.
[22] Eric E. Lampard, "The Evolving System of Cities in the United States: Urbanization and Economic Development," in Harvey S. Perloff and Lowdon Windo Jr., eds., *Issues in Urban Economics* (Baltimore: The John Hopkins University Press, 1968), 81.
[23] George Rogers Taylor, "Urban Growth Preceding the Railway Age," *The Journal of Economic History* 27, no. 3, (Sept. 1967), 309.

Exemplified by Charles Sellers and others, American historians often equate modern economic development with industrialization, but the United States proved that this need not always be the case. While most historical studies emphasize the productivity effects of urbanization in an industrial context, some economists have started to explore the benefits of urbanization to non-industrial economies. Urban growth fosters urban work, which involves greater capital intensity and makes more efficient use of labor inputs via increased specialization. For example, Jaison R. Abel, Ishita Dey, and Todd M. Gabe have recently demonstrated the links between increases in population density, labor productivity, and the growth of human capital. The authors argue that these trends "are particularly pronounced in industries where the exchange of information and sharing of ideas are important parts of the production process," a description that perfectly fits the early Republican merchant trade.[24] Specialized merchant commerce, the predominant economic force in pre-industrial American urban economies, served as a force-multiplier that catalyzed post-Revolutionary America's agricultural comparative advantage. Whether domestic or foreign, involving agricultural products, raw materials, or manufactured goods, all trade outside of hyper-local markets "was," according to Allan Pred, "in some sense interurban."[25] Thus, developing urban economic structures touched an increasing share of America's agrarian economy during the Republic's first years, making the American economy as a whole increasingly efficient and productive.

Scholars of European economic development have shown that growing urban centers often forged stronger agricultural economies. Jan de Vries and E.A. Wrigley have shown that the early-modern growth of British cities injected dynamism into still-agrarian economies by

[24] Jaison R. Abel, Ishita Dey and Todd M. Gabe, "Productivity and the Density of Human Capital," *Journal of Regional Science* 52, no. 4 (Nov., 2012), 565-566.
[25] Pred, *Urban growth and the circulation of information*, 104.

creating new markets for agricultural goods and incentivizing better transportation links between rural areas and urban market centers.[26] A similar model developed in America as rapidly developing rural-to-urban links combined with proliferating interurban networks to build an increasingly integrated domestic market. This integrated domestic market fostered growth on both the consumption and production sides—the increasing density of American markets incentivized greater exploitation of America's existing comparative advantage in agricultural production while making the commercial aspects of the economy more efficient and profitable.[27] In other words, urbanization drove Americans to not only produce more but also to profit more on each unit of production.

Post-Revolutionary population statistics reveal that the new United States experienced an urban surge in the years immediately following the Revolutionary War. As shown in Table 3.1, the average growth rates of America's four largest colonial cities—New York, Philadelphia, Boston, and Charleston—only saw a slight per decade increase between 1790-1810 compared to the colonial years (approximately 37 percent during the colonial era compared to just over 40

[26] In E.A. Wrigley, "Urban growth and agricultural change: England and the continent," *Journal of Interdisciplinary History* (1985): 683-728, and 'The Transition to the Advanced Organic Economy: Half a Millennium of English Agriculture,' *Economic History Review* 59 (2006): 435-80, Wrigley argues that increased agricultural productivity and urban growth formed a symbiotic cycle. Increases in agricultural productivity during the long seventeenth century released labor from agrarian activity which then consolidated in more productive forms of mechanized production largely based in urban areas. In turn, growing urban areas created concentrated markets for foodstuffs, and demand for commercial agents and transportation links to connect rural suppliers with urban consumers. This symbiosis led to even greater productivity, commercial growth, and more agriculture labor release to be absorbed by industry. In Jan de Vries, *The Economy of Europe in an Age of Crisis, 1600-1750* (Cambridge University Press, 1977), de Vries corroborates this view, discusses how increased urbanization fostered the use of markets and those who specialized in them such as merchants and traders, thus promoting market oriented commodities to ensure provision of cities and increased regional trade.

[27] In Simon J. Crowther, "Urban Growth in the Mid-Atlantic States, 1785-1850," *The Journal of Economic History* 36, no. 3 (Sept., 1976), 631, Crowther argues that urbanization did not dramatically impact American economic development until after 1815 because the long eighteenth century fostered little specialization amongst cities themselves. "There was little to complicate the division of labor between commercial central places and agricultural hinterlands," Crowther writes, "and if there were two regional economies in [the same region] they were doing very similar thing." While Crowther rightly observes that eighteenth century America lacked the productive benefits of true specialization amongst cities—for example, modern New York's specialization in finance and San Francisco's emphasis on technology—the linking of urban centers to each other and to smaller rural markets allowed for greater specialization *amongst individuals* by way of a larger aggregate market and greater sectoral division of labor.

percent in the post-Revolutionary era). However, the post-Revolutionary era saw the rapid growth of new urban areas such as Baltimore, Albany, Norfolk, and Richmond that pushed the average decadal urban growth rate to 55 percent.[28] The "marginal urbanization rate," which contrasts the urban growth rate to the overall population growth rate of approximately 35 percent, suggest that the American urban population grew one-third faster than its total population.[29]

The increasing size of post-Revolutionary American urban populations coincided with a significant maturation and diversification of urban workforces. Urban workforce maturation was defined by the emergence of new classes of brokers, financiers, grocers, and other "professional middlemen" who made markets more complex and smoothed inefficiencies. Sheryllynne Haggerty's study of Philadelphia shows the city's slow but certain development into a sophisticated and mature economy. The sectors in which Philadelphia dealers emphasized changed considerably between 1785 and 1805, as merchants shifted their focus on "staple products such as flour or grain" to "consumer goods [with higher value added] such as watches, shoes, furs, and rags."[30] A similar transition took place in Boston, Providence, and New York.[31]

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[28] Population statistics for the colonial era in "Population of cities-Boston, Newport, New York, Philadelphia, and Charleston: 1630-1790," Table Eg60-64, in *Historical Statistics of the United States, Millennial Edition Online*, 2009, Cambridge University Press, hsus.cambridge.org. Statistics for 1790-1840 in Pred, *Urban growth and the circulation of information*, 18.

[29] Economic historian Jeffrey Williamson coined the terms and developed the concept of the "marginal urbanization rate." This metric is important because while cities in a given society could be growing in nominal terms, the society is only "urbanizing" if the urbanization rate outpaces the broader population growth rate; Average total population growth derived from "Components of population growth, by decade: 1790-2000," Table Aa15-21, in *Historical Statistics of the United States, Millennial Edition Online*, 2009, Cambridge University Press, hsus.cambridge.org.

[30] Haggerty, "The Structure of the Philadelphia Trading Community," 178.

[31] Barrell & Company Account Books, 1770-1803, Vol.s 1, 2, & 7, Barrell & Company Business Papers, Barker Library at Harvard Business School; Jonathan Lawrence, Ledger B, 1767-1797, Jonathan Lawrence Papers, New York Historical Society; Brown and Ives, Ledger A, 1793-1801; Nicholas Brown & Company, Ledger, 1765-1769; East, *Business Enterprise in the American Revolutionary Period*, 243; Matson, "Liberty, Jealousy, and Union," 128.

Table 3.1: Population and Rate of Growth for Major American Urban Centers, 1630-1840

Urban Center	1630	1640	1650	1660	1680	1685	1690	1700	1710	1720	1730	1740	1742	1760	1775	Colonial Growth Rate	1790	1800	1810	1820	1830	1840	Mean Growth Rate, 1790-1810	Growth Rate, 1790-1840
New York	300	400	1,000	2,400	3,200		3,900	5,000	5,700	7,000	8,600		11,000	18,000	25,000		33,131	60,515	100,775	130,881	214,995	348,943		
Rate of Growth (RoG)		33.3%	150.0%	140.0%	33.3%		21.9%	28.2%	14.0%	22.8%	22.9%		27.9%	63.6%	38.9%	49.7%	32.5%	82.7%	66.5%	29.9%	64.3%	62.3%	60.6%	56.4%
Philadelphia						2,500	4,000	5,000	6,500	10,000	11,500		13,000	23,800	33,500		44,096	61,559	87,303	108,809	161,271	220,423		
RoG							60.0%	25.0%	30.0%	53.8%	15.0%		13.0%	83.1%	40.8%	40.1%	31.6%	39.6%	41.8%	24.6%	48.2%	36.7%	37.7%	37.1%
Boston		1,200	2,000	3,000	4,500		7,000	6,700	9,000	12,000	13,000	17,000	16,300	15,600	16,000		18,320	24,937	38,746	54,024	85,568	118,857		
RoG			66.7%	50.0%	50.0%		55.6%	-4.3%	34.3%	33.3%	8.3%	30.8%	-4.1%	-4.3%	2.6%	26.6%	14.5%	36.1%	55.4%	39.4%	58.4%	38.9%	35.3%	40.5%
Baltimore																	13,503	26,514	46,555	62,738	80,620	102,313		
RoG																		96.4%	75.6%	34.8%	28.5%	26.9%	86.0%	52.4%
Albany																	3,498	5,289	10,762	12,630	24,209	33,721		
RoG																		51.2%	103.5%	17.4%	91.7%	39.3%	77.3%	
Providence																	6,380	7,614	10,071	11,767	16,833	23,171		
RoG																		19.3%	32.3%	16.8%	43.1%	37.7%	25.8%	
Charleston					700	900	1,100	2,000	3,000	3,500	4,500		6,800	8,000	12,000		16,359	18,824	24,711	24,780	30,289	29,261		
RoG						28.6%	22.2%	81.8%	50.0%	16.7%	28.6%		51.1%	17.6%	50.0%	38.5%	36.3%	15.1%	31.3%	0.3%	22.2%	-3.4%	27.6%	17.0%
Richmond																	3,761	5,737	9,735	12,067	16,060	20,153		
RoG																		52.5%	69.7%	24.0%	33.1%	25.5%	61.1%	
Norfolk																	2,959	6,926	9,193	8,478	9,814	10,920		
RoG																		134.1%	32.7%	-7.8%	15.8%	11.3%	83.4%	
Total Growth Rate						**28.6%**	**39.9%**	**32.7%**	**32.1%**	**31.7%**	**18.7%**		**22.0%**	**40.0%**	**33.1%**	**38.7%**		**58.5%**	**56.5%**	**19.9%**	**45.0%**	**30.6%**	**55.0%**	40.7%

Sources: "Population of Cities--Boston, Newport, New York, Philadelphia, and Charleston: 1630-1790," Table Eg60-64, in *Historical Statistics of the United States, Millennial Edition Online* , 2009, Cambridge University Press, hsus.cambridge,org; Allan Pred, *Urban growth and the circulation of information: The United States system of cities, 1790-1840* (Cambridge, Mass.: Harvard University Press, 1973), 18.

In addition, Philadelphia's blossoming financial sector radically altered its commercial environment between 1785 and 1805. Not only did credit and cash become more widely available during this period, but the financial system itself created another source of capital that flowed to other domestic markets. The growth of sophisticated vendue offices, securities exchanges, and coffee houses formalized capital and commodities markets while deepening market access and smoothing price volatility.[32] The proliferation of financial and commercial exchanges also became a national trend—Chapter 2 emphasizes the rapid development of American financial markets during and after the Depression of the 1780s. In sum, America's early Republican cities, and the economies they contained, not only grew in size and population but also in economic sophistication. These growing urban economies boosted productivity and output, and, when integrated with other urban areas, provided ample room for specialized entrepreneurship to flourish.

The marginal urbanization rate shows significant urbanization during the post-Revolutionary period in traditional city centers, but Joseph A. Ernst and H. Roy Merrens, Peter C. Mancall, and others have demonstrated the ability of a group of networked-small towns to

[32] Robert E. Wright, *The Wealth of Nations Rediscovered: Integration and Expansion in American Financial Markets, 1780-1850* (New York: Cambridge University Press, 2002), 11-78, and Robert E. Wright, *Origins of Commercial Banking in America, 1750-1800* (Lanham, MD: Rowman & Littlefield, 2001), 34-110.

serve the commercial purposes of a larger urban center. Historians largely accept the U.S. Census threshold of 2500 residents as the definition of an urban center. However, the late-colonial and post-Revolutionary era saw the creation of urban systems that performed the functions of an urban center despite the absence of a regional metropole.[33] In the Susquehanna valley, small commercial towns like Middletown, Pennsylvania and Binghamton, New York emerged as concentrated "commercial entrepôts" with small yet specialized workforces. "Primitive compared to such urban centers as Philadelphia and New York," Mancall writes, these small commercial towns "represented a profound development in their valley's history. The towns attracted growing numbers of wage laborers who owned no land," as well as an uncommon density of merchants and traders."[34] The concentration of highly skilled commercial professionals allowed otherwise small towns like Middletown and Binghamton to foster regional trade in ways often limited to much larger cities. These small commercial entrepôts served as loci for imports and exports, allowing for economies of scale to lower transportation and distribution costs. As a result, the Susquehanna Valley became increasingly tied into both the broadening domestic market as well as the burgeoning foreign trade. As European famine and war during the late 1780s and early 1790s drove increased need for American grain and other foodstuffs, an increasing number of farmers in the mid-Atlantic gained access to export markets by way of these small commercial entrepôts.

Likewise, small commercial towns such as Camden, South Carolina, Cross Creek, North Carolina, and Elkton, Maryland served as rural extensions of Charleston, Wilmington, Baltimore,

[33] Taylor, "Urban Growth Preceding the Railway Age," 309 (fn 2). Taylor cites the United States Census of 1940, Population, baseline of a "city" as having a minimum of 2,500 residents. Most demographic historians, including Lampard, Williamson, and Ernst and Merrens, use a similar baseline.
[34] Peter C. Mancall, *Valley of Opportunity: Economic Culture along the Upper Susquehanna, 1700-1800* (Ithica, N.Y.: Cornell University Press, 1991), 179-180.

and even Philadelphia. Towns like Camden's "economic viability was assured by its flourishing regional base, and the town served as an integral component in the economic structure of the region in which it was located," Ernst and Merrens write. "As an inland urban center, [these towns'] development reflected the increasing population density and commercialization of the interior: [their] trading roles were intimately related to an increasing emphasis upon wheat growing and the development of overland transportation ties that gave backcountry farmers access to coastal markets."[35] Big city capital and credit flowed directly through these towns, providing greater investment in land improvement and crop diversification. The uniquely dense merchant populations of rural commercial entrepôts collected raw commodities from backcountry areas, inspected them, and processed the commodities into shippable bundles. Stocked with unusually precise market information, merchants in these commercial entrepôts then forwarded the commodities to the ports where they would receive the best price.[36] Small commercial entrepôts proliferated rapidly after the Revolution, adding to the effective, if not to the statistical, urban population of the post-Revolutionary United States.

The Ligaments of Development

During the decade preceding the Revolution and continuing immediately after the cessation of hostilities, substantial developments in domestic transport capacity, by both water and land, paved the way for increased domestic trade. Coastwise shipping connected large port cities up and down the eastern seaboard, while road travel and riparian transport connected interior markets. All three modes of transport experienced a significant buildup during the Revolutionary era, and especially in the decade after conflict ended in 1783. While central,

[35] Joseph A. Ernst and H. Roy Merrens, "'Camden's turrets pierce the skies!': The Urban Process in the Southern Colonies during the Eighteenth Century," *The William and Mary Quarterly* 30, no. 4 (Oct., 1973), 565.
[36] Ibid, 566-569.

federal, or national authorities played little to no role in promoting domestic market integration, state governments and individual merchants built transportation infrastructure that pulled the new nation together.

Table 3.2: New Ship Registers of the Port of Philadelphia, Pennsylvania, 1780-1807

	Bark	Brig	Brigantine	Schooner	Ship	Sloop	Snow	Others
1780	0	0	0	2	0	2	0	0
1781	0	0	0	0	0	0	0	0
1782	0	2	1	1	2	2	0	0
1783	0	9	5	7	5	6	0	0
1784	1	12	8	15	22	16	2	0
1785	1	20	5	19	9	15	3	0
1786	0	21	4	24	2	18	1	0
1787	1	13	2	8	0	13	1	0
1788	1	12	7	18	10	11	2	1
1789	0	22	2	22	23	15	3	0
1790	0	17	3	16	19	15	2	0
1791	0	16	8	24	33	22	2	0
1792	1	33	6	44	51	25	0	0
1793	0	49	7	47	49	35	1	0
1794	2	37	1	49	45	23	3	2
1795	0	55	0	60	44	31	4	1
1796	1	28	1	48	36	15	1	0
1797	1	15	0	34	6	18	0	0
1798	0	19	0	26	7	14	0	0
1799	1	19	0	38	17	13	0	1
1800	0	23	0	51	14	7	0	0
1801	0	33	0	46	30	7	0	0
1802	0	14	0	45	8	5	0	0
1803	0	22	0	27	15	9	0	1
1804	0	23	0	37	32	14	0	0
1805	0	38	0	52	40	9	0	0
1806	2	21	0	45	33	13	1	0
1807	0	20	0	34	25	7	0	0

Source: Survey of Federal Archives (United States), Ship registers of the Port of Philadelphia, Pennsylvania (Philadelphia: Work Projects Administration, 1942), 275-276

Table 3.3: New Ship Registers and Enrollments of Providence, Rhode Island, 1780-1807

	Brigantine	Schooner	Ship	Sloop	Snow
1780	6	5	2	15	0
1781	6	4	1	14	0
1782	13	1	2	28	0
1783	18	3	4	20	0
1784	12	8	1	12	0
1785	9	14	3	18	0
1786	2	7	0	10	0
1787	1	4	1	4	0
1788	0	5	1	4	0
1789	4	8	1	5	0
1790	3	4	0	9	2
1791	3	4	2	4	0
1792	5	8	2	0	0
1793	7	11	2	0	0
1794	2	9	8	0	0
1795	6	5	8	1	0
1796	4	4	10	0	0
1797	3	5	2	1	0
1798	0	10	4	0	0
1799	4	6	4	0	0
1800	8	9	5	0	0
1801	2	9	7	0	0
1802	9	8	2	0	0
1803	10	5	4	0	0
1804	11	8	8	0	0
1805	7	4	6	0	0
1806	3	5	9	0	0
1807	5	8	6	0	0

Source: Survey of Federal Archives (United States), Ship registers and Enrollments of Providence, Rhode Island, 1773-1939, Vol. 1 (Providence, R.I.: Work Projects Administration, 1941), 1497.

While port records and other quantitative evidence of domestic shipping remain scarce for the war and depression years, circumstantial evidence suggests that the American coastwise merchant fleet experienced a significant buildup of capacity throughout the Revolutionary era. As explored in Chapter 1, coastwise shipping expanded at a rate of 6.6 percent between 1790 and 1815 and an even faster 10.5 percent between 1790 and 1800. While precise estimations cannot be made, calculations suggest that coastwise trade expanded at a top rate of 37.7 percent between 1784 and 1789.[37] A more conservative estimate registers post-Revolutionary coastwise tonnage

[37] See Chapter 1, pg. 51-53, especially footnote 49.

growth at close to 20 percent.[38] In either scenario, coastwise trade rebounded strongly after independence as merchants exploited market pathways developed during the war.[39]

The shipbuilding industry even reoriented itself around domestic trade after the Revolution. While total new ship starts declined during the 1780s amidst the depressed business environment, lower tonnage sloops and schooners used in the coastwise trade dominated the ships that emerged from the dry docks of Philadelphia, Providence, and Boston during the Depression (see Tables 3.2 and 3.3).[40] In fact, a similar pattern emerged during the post-Seven Years War recession, when Philadelphia ship production numbers remained constant, but the tonnage-per-vessel fell considerably.[41] In other words, during the two significant recessionary periods of the Revolutionary era, the production of small vessels used in coastwise trade increased dramatically as a proportion of the American merchant marine. Moving out of the Depression of the 1780s, this buildup in coastwise shipping capacity, combined with constitutional eliminations of interstate tariff boundaries and new restrictions on shipping to British—and in some cases French—islands in the West Indies, created a favorable environment for coastwise commerce between the major American port cities.[42]

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[38] This author compiled the data for 1766-1772 using "Vessels Clearing [Boston, New York, Philadelphia, James River—Lower Part, and Charleston]: 1714-1772," Tables Eg474-513, Eg514-553, Eg554-593, Eg594-633, and Eg634-673, in *Historical Statistics of the United States, Millennial Edition Online*, 2009, Cambridge University Press, hsus.cambridge.org; The data for 1790-1815 is from Table C-III, *Tonnage Engaged in Coastwise and Internal Trade*, in North, *The Economic Growth of the United States*, 250.

[39] Due to scarce records, building accurate models for economic behavior during these years is very difficult and likely imprecise. This calculation aims to give an estimation of the period's principal dynamics without claiming absolute accuracy. That said, circumstantial evidence confirms a considerable buildup of anticipatory domestic tonnage in the two years leading up to the Revolution.

[40] Survey of Federal Archives (United States), *Ship registers of the Port of Philadelphia, Pennsylvania* (Philadelphia: Work Projects Administration, 1942), 275-276; Survey of Federal Archives (United States), *Ship registers and Enrollments, Boston and Charlestown, Vol. 1* (Philadelphia: Work Projects Administration, 1942), xi-xii; Survey of Federal Archives (United States), *Ship registers and Enrollments of Providence, Rhode Island, 1773-1939, Vol. 1* (Providence, R.I.: Work Projects Administration, 1941), 1497.

[41] Doerflinger, *A Vigorous Spirit of Enterprise*, 266; Charles Lyon Chandler, Marion V. Brewington, and Edgar P. Richardson*, Philadelphia: Port of History, 1609-1837* (Philadelphia: Philadelphia Maritime Museum, 1976), 65-87.

[42] While vessels in every port participated in the domestic coastwise trade, Boston held a central place in this new industry. Long a colonial center of the local and West Indies carrying trade, Boston had seen a considerable loss of economic vitality throughout the mid-eighteenth century as its dominance of this trade eroded with the rise

The growth of coastwise shipping opened the door for an expanded domestic market, but dismal and often non-existent physical infrastructure threatened to nullify the integration project before it began. Historians have compiled an extensive historiography on "internal improvements" and the American market revolution, most of it concentrating on largescale projects like canals, turnpikes, and bridges.[43] The historical focus on largescale projects like the Erie Canal, completed in 1825, has led scholars to place the American market revolution in the second, third, and fourth decades of the nineteenth century. However, the true market revolution of the 1780s and 1790s rested not on massive infrastructure projects but the relatively minor improvement of roads, clearing of river impediments, and building of short channel canals that circumvented river breaks. While the largescale internal improvements of the 1820s and 1830s certainly supercharged American industrialization, the revolution in American commercial transport began nearly half a century earlier.

American roads had long been notoriously bad. British traveler Isaac Weld reported that "the road from Philadelphia to Baltimore exhibits for the greater part of the way an aspect of

Philadelphia. Nonetheless, Boston's economic prospects, embodied by marked real negative population growth rates between 1742 and approximately 1765, rebounded with the post-Seven Years War increase in the coastwise trade depicted in Table 3.1. The post-Revolutionary expansion of the coastwise trade only supercharged Boston's renewed economic prospects. The Work Projects Administration of the State of Massachusetts report *Boston Looks Seaward: The Story of the Port of Boston, 1630-1940* (Boston: Bruce Humphries, 1941), 68, rightly states, "over a thousand local vessels, averaging less than 75 tons in burden, crowed the Atlantic coastal routes. Prosperity had also returned to the South, and Boston sloops again distributed imported goods along the coast, interchanged domestic products, and collected commodities for the overseas trade."

[43] John Lauritz Larson has led the field in recent years, with *Internal Improvement: National Public Works and the Promise of Popular Government in the Early United States* (Chapel Hill: University of North Carolina, 2001), forming the backbone of recent historiography. However, at its core Larson's work is a work of political economy rather than economic development. Paul A. Gilje's "The Rise of Capitalism in the Early Republic," *Journal of the Early Republic* 16, no. 2 (Jul., 1996), 159–81, encapsulates the historiographical trend by rightly arguing that the Early Republic witnessed the origins of fundamental elements of American capitalism, including money, banks, corporations, consumerism, mechanical production, and transportation infrastructure. Unfortunately, he exclusively discusses the post-1815 booms in canals, turnpikes, and railroads.

savage desolation" with "chasms to the depth of six, eight, or ten feet…at numerous intervals."[44] Rural roads were even worse, if one could call them roads at all. Locals often described them as "ways" or "paths" at best, most of which washed away in adverse weather.[45] River travel offered better transport options, but poor land transport posed obvious obstacles to farmers, who, even if they lived near river systems, faced considerable obstacles in moving goods to markets of any kind. These transportation deficiencies exacerbated the already disparate nature of colonial and early American settlement. The vast expanse of American geography, combined with poor transportation options and isolated markets, only reinforced the self-sufficient impulses of early colonial economic life.

Two primary elements inherent in British colonial governance reinforced, if not flatly encouraged, colonial market fragmentation. First, the enforcers of British mercantilism primarily viewed the American colonies as providers of natural resources and recipients of English manufactured goods. To British authorities, the important line of transport rested in the Atlantic Ocean, not the thousands of rivers and paths connecting one American hamlet to another. Put another way, the majority of British resources went to protecting Atlantic sea lanes, buttressing entrepôts, and securing lucrative cash crop supplies. While London merchants cared if their dry goods found a market somewhere in America, they cared less about how those markets interacted. Since much of the import-export trade traveled through largescale wholesalers like the Browns or Jeremiah Wadsworth, British governance structures cultivated a bi-polar model with long trade lines, rather than a web-based model that fostered domestic market expansion and integration. In other words, like most colonial masters, British policy makers opted for a

[44] Isaac Weld, Jr., *Travels Through the States or North America, and the Provinces of Upper and Lower Canada, during the Years 1795, 1796, and 1797* (London: John Stockdale, Piccadilly, 1799), 38.
[45] Stevenson W. Fletcher, *Pennsylvania Agriculture and Country Life, 1640-1840* (Harrisburg, P.A.: Pennsylvania Historical Commission, 1950), 239.

two-dimensional import-export model rather than a diversified, integrated economy in America.[46] Throughout the colonial era, British focus remained on select ports as isolated entities because they viewed imperial cohesion as more important than domestic complementarity.

As a result, almost all responsibility for building and maintaining roads, even those between larger port cities, fell to local governments. Town or county governments retained few if any permanent employees and raised very little revenue, making road maintenance an afterthought.[47] In rural areas, the truth behind Adam Smith's "extent of the market" principle often deterred road maintenance—connecting to the nearest small town only held value if that town fostered a connection to the town beyond it. In other words, only a universal rural road system could foster the market expansion and specialization that would justify the cost. However, no town could guarantee that its neighbors would do their part in extending the road system, thus making the potential expenditure useless. With responsibility for road building and maintenance devolved to the local level, coordinating a universal roads system in rural areas became virtually impossible.

A similar "tragedy-of-the-commons" problem arose for roads between urban centers. Localities balked at paying for roads that so many non-resident passers-through used. While toll roads run by private firms formed a partial solution after independence, these legislature-supported projects required a high-degree of political will to grant the charters necessary to lure investor-proprietors. Colonies such as Pennsylvania, Virginia, Massachusetts, and Delaware attempted to centralize transportation authorities in the late colonial era, but they suffered from a

[46] Nuala Zahedieh, *The Capital and the Colonies: London and the Atlantic Economy, 1660-1700* (Cambridge: Cambridge University Press, 2010), 35-55; Carla Gardina Pestana, *The English Atlantic in an Age of Revolution, 1640-1661* (Cambridge: Harvard University Press, 2007), 14-24; David Armitage, "The American Revolution in Atlantic Perspective" in *The Oxford Handbook of the Atlantic World, 1450-1850*, ed. Nicholas Canny and Philip Morgan (Oxford: Oxford University Press, 2011), 516-532; McCusker and Menard, *The Economy of British America*, 51-90 & 277-293.
[47] Fletcher, *Pennsylvania Agriculture and Country Life*, 249.

chronic lack of attention, expertise, and funding.[48] In sum, just as British mercantile policy disincentivized interurban and urban-rural integration, the colonial devolution of political authority made road construction and maintenance untenable even for those who realized its importance.

The devolution of transportation authority and funding began to change in the wake of independence from Great Britain. First, state sovereignty and new constitutions reallocated fiscal powers while the prospect of losing access to British markets, even if just ports in the West Indies, forced states to reconsider the structure of their own markets. Historians have long discussed ambitious private canal, turnpike, and land development companies like the Potomac Company, the James River Company, the Delaware and Susquehanna Company, and the Dismal Swamp Company because of their scope and prominent sponsors. However, these firms often failed to generate profits, integrate American markets, or even open for business at all. In fact, the prominent men like Robert Morris, J.M. Nesbitt, Charles Carroll, and even George Washington who fronted these companies organized them as speculative bets on creating brand-new markets rather than connecting existing ones.[49] Business historian Joseph Stancliffe Davis argued that most of these large-scale projects failed because of problems inherent to the new

[48] McCusker and Menard, *The Economy of British America*, 303-320.

[49] As so often happens during speculative booms, dozens of infrastructure companies formed and began selling shares during the bubble-then-panic cycles in 1791 and 1792. Preying on irrational exuberance and easy credit, "bubble companies" quickly form, and often, quickly implode due to deficient planning and leadership. In the process, the rapid proliferation of bubble companies tended to raise the cost of capital and accelerate widespread bankruptcies when shares eventually decline. Perhaps the most well-known example of bubble company proliferation, at least to Americans of the early Republic, came during England's South Sea Bubble of 1720. During the speculative boom during the late Spring and Summer of 1720, bubble companies sprung up daily, commanding immense premiums and raising astonishing amounts of capital. Entrepreneurs created both reasonable and absurd firms amidst the IPO frenzy. Joint-stock companies for "the production of alum, of rock-salt, another company for carrying coal from Newcastle, schemes for improved methods of brewing (such as the drying of malt by hot air), for victualing ships, for the sale of medicines ('the Grand Dispensary'), [and] for supplying Liverpool with water" all offered the prospect of reasonable returns. On the contrary, dozens of firms arose "for training in hair for wig-making," "the rearing of bastard children," or even "*A company for carrying on an undertaking of great advantage, but nobody to know what it is.*"

national economy: scarce credit, high per-unit labor costs, deficient engineering talent, and a lack of managers with experience of supervising vast infrastructure projects.[50] In sum, while sweeping, privately-owned infrastructure certain drove western expansion in the antebellum era, such firms proved ineffective in driving early American market integration.

Despite the failure of many large-scale, privately funded infrastructure plans, newly empowered postwar state governments embraced transportation investment and organization. Pennsylvania became a model of small-scale infrastructure improvement, as it strived to insulate itself from commercial challenges from New York and Maryland. Almost immediately after the advent of peace, the state began working with civil commercial groups like the "Society for Promoting the Improvement of Roads and Inland Navigation" to connect Pennsylvania's rural markets to its primary port of Philadelphia. In 1785 the State Assembly appropriated £2,000 for improving state highways in western Pennsylvania and the next year built a second highway to connect rural towns in Northumberland County to the Susquehanna river.[51] While the Depression of the 1780s limited the funds and attention available for improvements to roads and waterways, authorities understood the importance of lacing together local markets. Speaking of the Susquehanna Valley but using language that could apply to most states upon emergence from the Depression, Peter C. Mancall argues that, "State and local legislators and courts sanctioned and funded effort to improve transportation routes connecting the valley with important markets; they allocated public funds to finance the construction and maintenance of roads and the attempts to improve [riparian] navigation."[52] These small but targeted infrastructure enhancements marked a decided movement toward unified state-level promotion of integrated domestic economies.

[50] Joseph Stancliffe Davis, *Essays in the Earlier History of American Corporations,* Vol. 2 (Cambridge, MA.: Harvard University Press, 1917), 130-136.
[51] Fletcher, *Pennsylvania Agriculture and Country Life,* 251-252.
[52] Mancall, *Valley of Opportunity*, 204.

After recovery from the Depression and with new-found fiscal flexibility thanks to the assumption of state debts by the Hamilton Treasury in 1790, state governments expedited appropriations for infrastructure improvements. "Since shipping interests suffered from the break from England," James Weston Livingood writes, "much of the ready money found its way into domestic enterprises. It appeared that internal improvements would be the economic feature of the last ten years of the eighteenth century."[53] In addition to building and maintaining networks of roads that connected rural areas to ports or river systems, state legislatures dedicated considerable assets to clearing rivers and making them more navigable. In the Spring of 1791 the Pennsylvania legislature passed the "act to provide for opening and improving sundry navigable waters and roads within this commonwealth," which called for the execution of eleven river improvement projects, along with six large and twenty minor road developments.[54] Among other ventures, this bill appropriated £5,250 to clear "the Susquehanna River from Wright's ferry to the mouth of the Swatara creek."[55] These improvements included the unglamorous yet vital disposal of fallen trees and branches that thwarted navigation and building short canals to circumvent impassable areas. For example, part of the April 1791 appropriation went to bypass the Conewego Falls, which sat about 20 miles above Columbia. Columbia held easy access to the Lancaster Turnpike, one of the few largescale infrastructure programs that succeeded.[56] By the

[53] James Weston Livingood, *The Philadelphia-Baltimore Trade Rivalry, 1780*-1860 (New York: Arno Press, 1970), 9.
[54] "Secretary's Office," *Pennsylvania Mercury and Universal Advertiser*, Jun. 21, 23, 28, & Jul. 16, 21, 23, 26, and 28, 1791, America's Historic Newspapers.
[55] Livingood, *The Philadelphia-Baltimore Trade Rivalry*, 31.
[56] Completed in 1794, the Lancaster Turnpike, connecting Philadelphia and Lancaster before eventually extending to the Susquehanna River at Columbia, became the most successful of large-scale early Republic transportation infrastructure projects. Spanning nearly 75 miles, the turnpike employed the latest in road building technology, including grading and crushed-stone-on-large-stone paving. The road helped link the upper Susquehanna valley with Philadelphia, and boosted point-to-point trade in central Pennsylvania itself. The Lancaster Turnpike's financial viability remains the most striking element of its early years. In an era in which large infrastructure projects routinely suffered cost overruns and deficient revenue, the Lancaster Turnpike covered its cost of capital until 1799, when it turned a profit of $14,400. Profits rose to $24,900 in 1803.

mid-1790s, the highly publicized—and highly difficult—canal between the Schuylkill and Susquehanna rivers had failed, but the increasingly intricate network of small roads and passable rivers connected rural Pennsylvania markets with Philadelphia in ways that seemed unimaginable a decade earlier. Pennsylvania so dedicated itself to developing its domestic market that in 1794 Tench Coxe wrote that more funds had been dedicated to the improvement of roads and rivers between 1790 and 1793 than in the entire prior history of Pennsylvania.[57]

While Pennsylvania led the nation on pragmatic and small-scale infrastructure investment, other states also worked to integrate their markets. While large canal and turnpike projects commonly suffered long delays and cost overruns, smaller river clearing and road development ventures often found success. The 22-mile canal connecting the Santee and Cooper rivers in South Carolina met with moderate success when completed in 1800.[58] So too did numerous projects to improve navigation on the Connecticut River in New England during the 1790s. In 1792, Massachusetts, New Hampshire, and Connecticut merchants obtained significant capital from state governments—and later Dutch bankers—to clear obstructions, build small bridges, and circumvent several falls.[59] Projects to build roads or clear small sections of rivers dotted the landscape in Maryland, South Carolina, Georgia, New York, Kentucky, and North Carolina throughout the 1790s. Some small firms, such as Virginia's Appomattox Company or Maryland's Pokomoke Company carried capital bases as low as $10,000, signifying the humble scope of their objectives.[60] While insignificant compared to the vast improvement plans of

[57] Tench Coxe, *A View of the United States of America, in a Series of papers, written at various times, between the years 1787 and 1794* (Philadelphia: William Hall and Wrigley & Berriman, 1794), 60.
[58] Davis, *Essays in the Earlier History of American Corporations*, 145-146.
[59] Davis, *Essays in the Earlier History of American Corporations*, 167.
[60] Davis, *Essays in the Earlier History of American Corporations*, 180-182.

$200,000 Middlesex canal or the $400,000 Delaware and Schuylkill canal, these small-scale improvements integrated America's domestic market a mile at a time.

In addition to capital investment and chartering improvement companies, state governments began to modify legal structures to encourage the development of transportation systems. Legislatures in New York, Pennsylvania, Virginia, and Massachusetts designated major river systems as public highways, thereby preventing farmers, fishermen, and mill owners from erecting impediments to riparian navigation. In one example, New York "levied a fine of $25 on anyone who erected a milldam or fishing weir in these waterways or cut wood and left it to obstruct travel."[61] Legal historians such as Morton Horwitz have critiqued these legal changes, arguing that they "actively promoted a legal redistribution of wealth against the weakest groups in the society."[62] While it is true that changing legal structures favored an "instrumental concept of law" that often favored market involvement over subsistence farming, they fail to understand that "self-sufficiency," even in rural areas, had long since evaporated. Horwitz rightly argues that industrial era Mill Acts established in numerous states shifted power in favor of largescale industrialists. However, post-Revolutionary changes to property rights statutes in navigational areas often favored market-oriented farmers over proto-industrialists by preventing mill owners from channeling rivers to power their machinery.[63]

The problem rests on a faulty understanding of American economic development, one which conflates the market and industrial revolutions. In these conceptions of capitalist development, the majority of post-Revolutionary farmers still operated outside of market structures, and thus suffered from laws aimed at increasing market access. However, if one

[61] Mancall, *Valley of Opportunity*, 210-212.
[62] Morton Horwitz, *The Transformation of American Law, 1780-1860* (Cambridge: Harvard University Press, 1979), 253-154.
[63] Horwitz, *The Transformation of American Law, 1780-1860*, 53.

assumes, as this chapter shows, that farmers widely participated in and benefitted from expanding domestic and international markets before 1800, legal support for internal improvements alleviated one of farmers' greatest costs—the transportation of goods to market.

Integration

America's Industrial Revolution marked the end of the new nation's market revolution rather than the beginning of it. In a nation so expansive and disparate, only a complementary national economy, with a largely integrated market, could have made possible the industrial growth seen in the 1820s, 1830s, and 1840s. Significant improvements in the coastwise trade and internal navigation during the late 1780s and 1790s allowed goods, capital, and labor to flow more freely as the new nation developed. Despite these commercial advancements during the United States's very first years, the integration of the American market began long before. It is beyond the scope of this study to analyze the extent to which of America's real market revolution influenced its political separation from Great Britain. However, the evidence strongly suggests that the American colonies and their individual markets began integrating more than a decade before the first shots of the American Revolution.

The period after the Seven Years War saw a significant increase in intercolonial commerce. The war itself provided scarce and valuable British specie to merchants able to feed and clothe hungry soldiers. Merchants like Isaac Low, Isaac Roosevelt, John DeLancy, John Cruger, Peter R. Livingston, and Nicholas Bayard made fortunes provisioning British troops and, in many cases, smuggling sugar, dry goods, and domestic agricultural commodities between colonial buyers and French and Dutch merchants in the West Indies.[64] In so doing, these

[64] Matson, *Merchants and Empire,* 268-271.

merchants built increasingly complex commercial networks that drew on suppliers from multiple colonies. Livingston, for example, built a remarkably sophisticated network of both legal and illicit trade, that connected Rhode Island and Massachusetts with ports in Connecticut, North Carolina, Pennsylvania, Jamaica, and other locations in the West Indies.[65] Many of these networks remained in place after the cessation of conflict in 1763. As hinterland farmers resumed commodity production, merchants used their wartime methods to acquire and transport an increasing array of agricultural products for export to the West Indies and Europe.[66] The mid-to-late 1760s yielded especially good harvests throughout the American colonies, resulting in increasing surpluses and farmers in rural areas looking to exchange their surfeits for ready money. At the same time, poor harvests in England increased demand for American foodstuffs.[67] "By 1770," Colleen F. Rafferty writes, "haulers working for rural traders [in the Mid-Atlantic] regularly carted goods not only to Philadelphia but to Baltimore as well, and traveled along many new roads built to facilitate intercolonial and interurban commerce."[68]

In addition to the wartime expansion of intercolonial commercial networks anchored in major port cities, developments in imperial political economy aided the integration of domestic markets. Several non-importation movements arose in the late 1760s to protest postwar imperial trade policy that constrained American exports and deprived colonists of much-needed currency.[69] Merchants in New York, Philadelphia, and Boston stockpiled goods in anticipation of

[65] Matson, *Merchants and Empire*, 277.
[66] Colleen F. Raffterty, "To Establish an Intercourse Between Our Respective Houses: Economic Networks in the Mid-Atlantic, 1735-1815" (Ph.D Dissertation, University of Delaware, 2012), 128.
[67] Matson, *Merchants and Empire*, 301.
[68] Raffterty, "To Establish an Intercourse Between Our Respective Houses," 129.
[69] Not only did British mercantilist policy draw hard coin out of the colonies and toward the British mainland, but numerous colonial regulations prevented the emission of colonial paper money. While colonies including New York and Pennsylvania experimented with paper money beginning in 1690 as a way of bridging short-term budget gaps largely caused by warfare, less successful efforts to use paper money as a broader tool of money supply augmentation in Massachusetts, Rhode Island, South Carolina, and others resulted in the *Colonial Currency Act* (1751) and the *Currency Restraining Act* (1764), both of which made most paper money illegal in British North

the non-importation acts and then, once the embargo on British goods took effect, distributed them to domestic consumers using the same commercial networks that proved so effective during the war.[70] While colonial merchants functioned within commercial networks throughout early- and mid-eighteenth century, the continental nature of the Seven Years War expanded connections between colonial markets and made intercolonial trade more efficient once the opportunity arose.

As noted in Chapter 1 and Figure 1.5, commercial connections between the American colonies expanded dramatically after the Seven Years War. While export tonnage to Great Britain and the West Indies grew just 10.7 and 25.3 percent respectively between 1766 and 1772—export tonnage to Europe actually fell 5.4 percent during the same period—inter-colonial "exports" grew by 149 percent, or a remarkable 21.3 percent per year.[71] Postwar recession, changes to imperial trade policy (including the Townshend and Sugar Acts), changes to colonial consumption patterns, and spikes in population growth exacerbated the boom in intercolonial export tonnage. Regardless of the reason, colonial merchants expanded their commercial relationships with peers in other port cities in the decade between 1766 and 1776.

As the spike in pre-Revolutionary intercolonial shipping connected growing urban centers like Philadelphia, New York, and Charleston, merchants in those cities also began

America. For more on this, see Alan Taylor, *American Colonies: The Settling of North America* (New York: Penguin Books, 2001), 432-441; McCusker and Russell R. Menard, *The Economy of British America*, 336-341;

[70] Matson, *Merchants and Empire*, 300. The debate over paper money revolved around ideas of deflation and imperial control. For the most sophisticated debate about colonial monetary policy and its implications, see Ron Michener, "Fixed Exchange Rates and the Quantity Theory in Colonial America," *Carnegie-Rochester Conference Series in Public Policy*, 1987, 233-308 and Bruce Smith, "American Colonial Monetary Regimes: The Failure of the Quantity Theory and Some Evidence in Favor of an Alternative View," *Canadian Journal of Economics*, 18 (1985), pp. 531-565.

[71] Joshua L. Rosenbloom and Thomas Weiss, "Economic Growth in the Mid-Atlantic Region: Conjectural Estimates for 1720 to 1800," *Working Paper Series.*, no. 17215 (2011); Peter C. Mancall, Joshua L. Rosenbloom, and Thomas Weiss, "Exports and the Economy of the Lower South Region, 1720-1770," *Research in Economic History* 25 (2008): 1–68.

integrating the rapidly growing rural hinterlands into their market structure.[72] After the Seven Years War, new settlers looking for rich agricultural lands began filling up the grain- and iron rich areas of south-central Pennsylvania, the Susquehanna and Hudson valleys, Chesapeake tidewater, and Carolina Piedmont regions. As these settlers became established and began to produce more crops and demand more manufactured goods, merchants in port cities began to recognize the opportunities offered by hinterland settlers. For example, as the rural areas surrounding Philadelphia and Baltimore became increasingly dense, merchants like Levi Hollingsworth build up quasi-rural outposts at Head of Elk, Maryland to connect rural areas to Philadelphia and Baltimore. Other Philadelphia firms followed suit, setting up outposts in Harve de Grace, Wilkes-Barre, and Wilmington. The Revolutionary War altered the prewar calculus, as farmers to fled conflict zones and merchants realigned their efforts toward military provisioning. Nonetheless, the skeleton of prewar integration remained viable upon the Revolution's conclusion.[73]

The Revolutionary War only accelerated the integration of the American market. Of course, war-torn areas of the new nation faced protracted exclusion from that market, such as Philadelphia during the British occupation from September 1777 to June 1778 or New York throughout the entirety of the conflict. Nonetheless, the war made American markets much more reliant on each other than any previous point in their history. Provisioning networks connected to the Continental commissariat stretched across the eastern seaboard with a depth and complexity never-before seen in North America. "Peacetime supply chains did not simply map onto wartime

[72] This symbiotic expansion fits Crowther's model of pre-industrial urban expansion based on independent regional hegemony. See Simon J. Crowther, "Urban Growth in the Mid-Atlantic States, 1785-1850," *The Journal of Economic History* 36 no. 3 (Sept. 1976), 625-628.

[73] Raffterty, "To Establish an Intercourse Between Our Respective Houses," 136-137; Mancall, *Valley of Opportunity*, 110-114 & 130-139; Jamar, "Hollingsworth Family and Collateral Lines of Cooch-Gilpin-Jamar-Mackall-Morris-Stewart; Early History and Cecil County, Maryland Lines"; Brooke Hunter, "Rage for Grain: Flour Milling in the Mid -Atlantic, 1750–1815" (Ph.D., University of Delaware, 2002).

needs," writes historian Tom Cutterham. "Enormous quantities of, for example, flour and pork had to be assembled at concentrated points at short notice. Normal transportation, including the coastwise water route, could be risky and was sometimes impossible."[74] Thus, merchants like Jeremiah Wadsworth, John Barker Church, and William Duer build new networks that acquired and distributed supplies to the Continental Army.

Due to the unpredictable nature of war, networks led by men like Wadsworth, Duer, and others required marked flexibility. Wartime commercial networks included dozens, if not hundreds of merchants and suppliers in numerous areas of the country. As Commissary General of the Continental Army, Wadsworth built a circuit of suppliers spanning New York, Pennsylvania, Maryland, Virginia, and Delaware that he constantly traversed to maintain relationships.[75] Wadsworth even employed personal messages from George Washington to keep suppliers on the American side.[76] After leaving the Commissariat in 1779, Wadsworth and his partner John Barker Church built a new series of commercial contacts as they supplied the French Army. In so doing, Wadsworth and Church built a multistate-network of "subcontractors, agents, teamsters, couriers, and clerks that became famous for their efficiency and reliability."[77]

Throughout the Revolution, military provision seamlessly mixed with non-war related trade. Merchants like Duer, William Constable, Nicholas Brown, Thomas Fitzsimons, Charles Biddle, Nicholas Low, and James Watson serviced Continental Army contracts as well as personal commercial deals at the same time, and regularly on the same orders. Often novice or strictly regional before the conflict, these merchants' association with the war effort allowed for

[74] Tom Cutterham, "The Revolutionary Transformation of American Merchant Networks: Carter and Wadsworth and Their World, 1775–1800," *Enterprise & Society* 18, no. 1 (Mar., 2017), 3.
[75] Victor L. Johnson, "The Administration of the American Commissariat during the American Revolution" (Ph.D Dissertation, University of Pennsylvania, 2012), 144-147.
[76] John David Ronalds Platt, "Jeremiah Wadsworth: Federalist Entrepreneur" (Ph.D Dissertation, Columbia University, 1955), 12.
[77] Platt, "Jeremiah Wadsworth," 24.

expanded commercial reach across the new United States. At the end of the war, the New York-based Duer retained wartime agents in Virginia, North Carolina, South Carolina, Georgia, Pennsylvania, and Connecticut.[78] Fitzsimons, Brown, Low, and Wadsworth held networks of even greater geographic reach by 1783. While many Americans considered these merchants' wartime profit-making dubious at best, the emergence of these vast wartime provisioning networks laced American markets together in a way unimaginable a decade prior.

The emergence of powerful merchants with extensive operations in multiple locations only accelerated the integration of connected markets. The Hollingsworth family, under the direction of Henry and then his son Levi, played a vital role in integrating Philadelphia, Baltimore, Annapolis and Alexandria markets. The Hollingsworths based their wartime operations in Head of Elk, Maryland at the northern headwaters of the Chesapeake Bay and almost equidistant between Philadelphia and Baltimore. With direct agents in both cities—sons Levi in Philadelphia and Thomas in Baltimore—Henry Hollingsworth built a streamlined transportation network that moved war supplies including lead, flour and foodstuffs, blankets, and armaments to commissary distribution centers along the Delaware and Susquehanna rivers and throughout the Chesapeake Bay.[79] At the same time, merchants such as Andrew Clow, a native Manchesterian who moved to Philadelphia in 1777, realized that farmers continued to demand market access for wartime harvests. The dangers of combat isolated many rural farmers from markets, but increased demand for raw agricultural material offered considerable rewards for merchant willing to shoulder the increased risk. Clow and many others like him willfully

[78] Cathy Matson, "Public Vices, Private Benefit: William Duer and His Circle, 1776-1792," in William Pencak and Conrad Edick Wright, ed., *New York and the Rise of American Capitalism* (New York: The New-York Historical Society, 1989), 82-96.
[79] Ledger C, Feb. 1777-Mar. 1779, Vol. 13, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger D, Mar. 1779-Mar. 1780, Vol. 14, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

accepted the new risk calculus and began forging deeper and more complex connections with the rural hinterlands.[80] Thus, revolutionary necessity fostered both closer connections between port cities and deeper connections between those cities and the agricultural hinterlands that provisioned them. Both sides benefitted: farmers gained access to larger markets for their surplus crops and urban merchants built more flexible supply chains. For merchants like the Hollingsworth, such market integration "enhanced not only [the] family's premier position within the grain trade, but also facilitated the development of intercity ties that would remain important after the revolution."[81]

The combination of wartime provisioning and non-combat related commerce demanded greater interdependence between American markets themselves. Philadelphia and Baltimore shared similar economic structures and became deeply intertwined during the conflict. Baltimore's open and well-defended port became a valuable asset to Philadelphia traders who constantly operated under the threat of British warships. In return, Baltimoreans gained access to the capital and experience of new partners in Philadelphia.[82] In this way, Baltimore and Philadelphia developed a reciprocal commercial relationship during the Revolution that fostered a significant integration that even postwar competition could not erase. Boston and Providence developed a similar relationship during the conflict. While interurban complementarity did not become a vital element of the American economy until industrialization in the 1830s, the wartime partnerships between regional urban systems forged connections that carried into the 1780s and 1790s.

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[80] Sheryllynne Haggerty, "The Structure of the Philadelphia Trading Community on the Transition from Colony to State," *Business History* 48, no. 2 (Apr., 2006), 183.
[81] Raffterty, "To Establish an Intercourse Between Our Respective Houses," 179.
[82] Raffterty, "To Establish an Intercourse Between Our Respective Houses," 165**;** Stuart W. Bruchey, *Robert Oliver, Merchant of Baltimore, 1783-1819* (New York: Arno Press, 1979), 32-33.

After the Treaty of Paris in 1783—and even before it in some cases—the process of integrating rural areas with urban centers resumed with a vengeance. Driven by pent-up demand for consumer goods and the urgency to make up for years of lost income, hinterland dwellers ardently engaged larger markets. Rather than building autonomous and self-sufficient communities, settlers, tenants, and freeholders chose en masse to engage in both supply- and demand-side market activity.[83] Free of modern ideological paradigms such as "capitalist vs. communal" or "market vs. command" economies, hinterland dwellers recognized the opportunity to capitalize on their advantageous productive capacity and improve their standards of living.[84] For many post-Revolutionary Americans, the free trade ideas emanating from Scottish intellectuals like Adam Smith and other British liberals coincided with Revolutionary ideals of equality, natural law, and anti-imperial, anti-mercantilist sentiment.[85] While most Americans abandoned free trade ideology after the Depression of the 1780s, hinterland settlers chose market opportunities, if not necessarily a "market economy," with abandon.[86]

If the successful Revolution opened infinite commercial opportunities for American merchants, the Depression of the 1780s forced them to broaden their market reach in order to survive. The Depression emanated from the cascading series of commodity gluts, falling prices, bankruptcies, and cash and credit scarcities discussed in Chapter 2.[87] After a postwar spike in

[83] Mancall, *Valley of Opportunity*, 181.
[84] Daniel Vickers, "Competency and Competition: Economic Culture in Early America," *The William and Mary Quarterly* 47, no. 1 (Jan., 1990), 3–29.
[85] Bittner, "The Definition of Economic Independence and the New Nation," 96-97 & 193-194; McCoy, *The Elusive Republic*, 40-43.
[86] Lawrence A. Peskin, *Manufacturing Revolution: The Intellectual Origins of Early American Industry* (Baltimore, MD.: Johns Hopkins University Press, 2003), 70-79.
[87] See Chapter 2 for an extensive discussion of the Depression of the 1780s and its residual effects on the postwar economy. Significant evidence exists to suggest the integration of American domestic markets, both urban-rural and interurban, widely occurred amongst regional economies by the mid-1780s. In Winifred Barr Rothenberg, *From Market-Places to a Market Economy: The Transformation of Rural Massachusetts, 1750-1850* (Chicago: University of Chicago Press, 1992), 3-7 & 242-243, Rothenberg has shown that rural New England market integration emerged between 1785 and 1800, with fine-tuning continuing well into the nineteenth century. Rothenburg argues that learning-by-doing, more sophisticated management, and integration with regional market networks, rather than the

imports unleashed significant deflationary pressure, merchants sought diversification to hedge against individual market risk. In many cases, diversification meant altering the makeup of their investment portfolios and the basket of goods they traded.[88] For example, as prices of warehoused European dry goods collapsed, merchants like Jeremiah Wadsworth, Nicholas Low, James Watson, William Constable, and many others diversified into commodities directly tied to domestic consumption, such as molasses, flaxseed, and beef.[89] However, in addition to changing the fundamental complexion of their trading activity, many merchants diversified their business by extending the geographic scope of their operations. Interurban partnerships emerged as a formidable hedge against glutted markets, principle-agent problems, and, perhaps worst of all, information asymmetry. Interurban operations allowed merchants to profit from price arbitrage, coordinate foreign voyages, and better negotiate the distribution of imports and exports.[90]

Merchants across the new United States scrambled to establish interurban ties even while the Depression raged around them. In early 1784, Duncan Ingraham Jr. of Philadelphia approached Nicholas Brown about integrating their activities in New England and Philadelphia. Ingraham suggested that Boston and Providence could serve as outlets for glutted Philadelphia markets for "European Articles," while arguing that "The produce of New England always finds a ready Market here and often a very profitable one."[91] Brown also received numerous

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introduction of new technology or machinery, resulted widespread efficiency gains and price convergence. While perfectly harmonized interregional markets still took decades to achieve, significant price convergence took effect by the late 1790s.

[88] Many merchants branched into financial asset investing, while moving away from the simple import/export, dry good wholesaler model and towards a more modern, two-way market maker business. For more on this transition, see Chapter 5, "Growth and the Revolution of American Business Models."

[89] Platt, "Jeremiah Wadsworth," 83–94; Nicholas Low, "Nicholas Low Papers, 1773-1897," mixed material, (1785); William Allen Davis, "William Constable, New York Merchant and Land Speculator, 1772-1803" (Ph.D., Harvard University, 1957).

[90] Matson, "Liberty, Jealousy, and Union," 128; Raffterty, "To Establish an Intercourse Between Our Respective Houses," 186-187.

[91] John Ingraham Jr. to Nicholas Brown, February 10, 1784, Box 366, Folder 8, Brown Family Business Records, The John Carter Brown Library at Brown University.

solicitations for co-partnerships in Baltimore and other places in the Chesapeake. Samuel and Thomas Blanchard proposed a particularly close information-sharing scheme that involved a "Cap.t Champlin" constantly ferrying price information between the two ports. "It wou'd be highly satisfactory to us," Blanchard wrote to Brown, "to know the State of your market at all times, for sometimes the levels of flour and iron are advantageously exported to your place & we wish to know when it wou'd be advantageous to ship... [We] shall endeavor to execute [your orders] with all that dispatch so essentially requisite to make Trade profitable in times of Peace [emphasis in original]."[92] Blanchard's letter reveals a merchant firm coming to grips with the new, post-Revolutionary commercial landscape. Access to multiple markets and up-to-date information became essential "to make Trade profitable in times of Peace."

As New England merchants built commercial connections with other port cities, they also worked to modernize their associations throughout the new United States. The Browns astutely realized their prewar business model of a providing a limited array of English goods to isolated regional retailers would not hold up in a postwar world of American autonomy. To survive the 1780s, the Browns started making markets rather than simply supplying those that already existed.[93] In addition to the large-port to large-port connections exemplified in Nicholas Brown's Providence-to-Philadelphia connection with *Hewes and Anthony*, Brown built deeper connections with rural Virginia and the Carolinas.[94] At the same time, Brown pushed further into New England, establishing and connecting rural markets in Connecticut, Massachusetts, and New Hampshire.[95] Building their network in greater New England and then connecting that

[92] Samuel and Thomas Blanchard to Brown and Benson, April 3, 1785, Box 366, Folder 8, Brown Family Business Records, The John Carter Brown Library at Brown University.
[93] Hedges, *The Browns of Providence Plantations*, 258.
[94] Hedges, *The Browns of Providence Plantations*, 306.
[95] Brown and Benson, Ledger, 1783-1789, B1253, Brown Family Business Records, The John Carter Brown Library at Brown University.

network to urban and rural markets in other states provided the Browns a greater array of exports at better prices while creating a broader and more resilient market for the goods they imported.[96]

The surge in interregional market connections spread far beyond New England. Post-revolutionary Mid-Atlantic merchants built commercial channels through which commodity gluts could diffuse into surrounding markets. Philadelphia merchants like John Chaloner built partnerships with small towns throughout the Chesapeake to vent overstocked goods when urban markets became glutted.[97] Likewise, in 1784 and 1785 Nalbro Frazier built a detailed contract and financing deal with numerous merchants in North Carolina to distribute goods from English merchant Thomas Dickason that would have otherwise languished in Philadelphia's glutted market.[98] Similar interregional partnerships in the post-Revolutionary era addressed the constant problem of market gluts caused by insufficient information and deficient commercial channels between cities.

New interregional commercial channels also began to address the chronic monetary and credit scarcity that dominated colonial economic life. At the darkest point in the Depression, merchants David Lamb of Charleston and Robert Henderson of Philadelphia formed an interurban partnership to compensate for price discrepancies and currency asymmetries. Lamb proposed a commercial relationship in which both parties advanced 100 Guineas to establish a bipartite trade between their two cities. In a novel financial arrangement, each side could contract goods in either credit or cash, allowing one party experiencing a cash shortage to easily access another money market with more circulating currency. Just as commodity markets existed in

[96] Nicholas Brown to Champion & Dickason, May 20, 1783, Box 44, Folder 2, Brown Family Business Records, The John Carter Brown Library at Brown University.
[97] John Hopkins to John Chaloner, June 13, 1784, Box 12, Folder 4, Chaloner and White Records, Historical Society of Pennsylvania.
[98] Nalbro Frazier to Thomas Dickason, October 6, 1784, Nalbro Frazier Letter book, 1783-1799, pg. 108-109, New York Public Library.

veritable isolation prior to the 1780s, currency markets also suffered from a lack of arbitrage channels. While American merchants always complained about a deficient money supply, slow, expensive, or non-existent transmission channels prevented specie or bills of credit from flowing from relatively dense money markets to scarce money markets. Lamb and Henderson's agreement provided each merchant house a low-cost mechanism to transfer cash between urban areas, and thus transcend the systematic cash scarcities that plagued the colonial and postwar years. [99]

While many postwar merchant houses formed interurban partnerships to compete during the tumultuous 1780s, several of the most prominent American capitalists took domestic geographic integration to another level. In a revealing letter to the Amsterdam firm *Henry Rucker & Co.*, former Continental Superintendent of Finance Robert Morris outlined a new network of firms that he organized to compensate for profound information asymmetries and market segmentation. Similar in structure to a trust from the late-nineteenth century, this company of companies organized independent merchant houses under a uniform set of rules, charging a uniform commission, and offering a uniform set of benefits to clients. Rather than simply having an agent or set of agents in different cities—like the Hollingsworth family—the Morris conglomeration offered accessed to large merchant firms in almost every major American port city. *Constable, Rucker, & Co*. conducted all business in New York, while *Willing, Morris, & Swanwick* handled deals in Philadelphia. *Tench Tilghman & Co*. operated out of Baltimore and *Robert Hazlehurst & Company* conducted operations in Charleston. Interlocking ownership kept

[99] David Lamb to Robert Henderson, December 9, 1785, Robert Henderson Letter book, Robert Henderson Papers, Historical Society of Pennsylvania.

the firms integrated on several levels—for example, Morris held significant ownership stakes in all four firms—and helped them raise capital and spread risk.[100]

Morris's "trust" offered clients substantial risk mitigation and informational benefits. In exchange for his two-percent commission, Morris would "guarantee the debt arising on the sale of Consignments made by" subsidiary firms. Morris would also provide the client comprehensive information about what goods would sell best in which cities. While all the merchant houses functioned as independent operators, Morris owned a significant stake in all of them and even referred to them as "my Houses." The structure offered obvious advantages to foreign and domestic clients alike: a single point of contact with a vast information and distribution network. As discussed in Chapter 2, gluts and, as a result, disadvantageous sale prices, often arose from information deficiencies and high transportation costs. Producers in the American hinterlands and European factories alike did not know where their goods would find an advantageous market and, if their goods did arrive in a down market, the transportation cost would be too high to profitably transfer those goods to a better location. A network like Morris's alleviated both problems by consolidating and then distributing precise information directly to clients. Morris's network would then employ economies of scale and network density effects to ease transportation costs. By regulating communication lines, systematizing the transfer of goods, and creating a network that viewed the entire American seaboard as its primary market, the Morris trust and others like it brought the American market together in a way not previously seen.

While Morris built his network to connect America's large port cities, individual firms within that network had already begun reaching into the hinterland. Novice merchants like

[100] Robert Morris to Henry Rucker & Sons, December 6, 1785, Box 1, Folder "1785," Constable-Pierrepont Papers, New York Public Library.

William Constable made urban-rural integration their foremost priority. On November 12, 1783, Constable informed the Jamaica merchant house *McLean & Moore* that "I shall remove to NYK [New York] in April as our Connections in the interior Country will be attended with many advantages." While he admitted that trade regulations under consideration in his current state of Pennsylvania played a role in his departure, Constable argued that easier connections with the hinterlands via the Hudson Valley would provide goods "of an equal goodness and lower price than Phil.a."[101] Just two weeks later Constable told the merchant firm *Oh Mazor Vouttier & Company* that he would begin his mercantile career in New York expressly due to its increasing integration with the hinterlands. "My Connections in the interior Country," Constable wrote, "will enable me to serve my friends in the shipment of Flour & Lumber upon the most advantageous terms."[102] Constable made New York's connections with rural areas his main pitch point in letter after letter to prospective clients. As the 1780s progressed, Constable argued, New York would not be divided between the city and its hinterlands. Rather, burgeoning port would form one integrated market from which buyers could acquire premium goods at low prices and to which traders could supply a growing population of eager consumers.

During the same period, prominent merchants outside of the Morris network began pushing into rural hinterlands to connect those areas with the national market. In early January of 1784, the London merchant house *Murray Samson & Company* arranged the connection of Levi Hollingsworth with "our friend Mr. Alexander Henry, a gentleman of character and property…who is better acquainted with the interior parts of America than any other

[101] William Constable to McLean & Moore, November 12, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[102] William Constable to Oh Mazor Vouttier & Company, December, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

gentleman."[103] Hollingsworth had previously told *Samson* of his desire to expand into the hinterlands of south-central Pennsylvania and northern Maryland to direct the area's grain-production potential toward his growing empire. He intended to do so by luring producers with low-price manufactured goods, as well as commercial infrastructure investment in the form of saw and grist mills.[104] In so doing, Hollingsworth built tangible and increasingly strong trade lines that pulled the Pennsylvania hinterlands into deeper connection with both Philadelphia and Baltimore.

As merchant groups like those led by Morris and Hollingsworth used new road and waterways to connect their urban businesses to rural markets, the proliferation of raw commodity processing facilities such as grist, saw, and paper mills, sugar refineries, and distilleries helped dissolve the stark lines between urban and rural market centers. In many cases, the primary investment in this commercial infrastructure came from large-scale landholders who saw a distinct advantage in dissolving the barriers between the rural property they hoped to commoditize, develop and sell, and the urban homes of their primary business ventures. In the case of patriarchal developers like William Cooper, direct construction of commercial infrastructure accomplished two functions. First, the construction of potash works and maple sugar refineries allowed Cooper and his tenants to capture the value added of processed materials over raw commodities, such as potash over lumber or loaf sugar over maple syrup.[105] In the case of wheat and flour, discarding the heavy chaff closer to the source of cultivation allowed for the transport of a much more revenue-dense product. In so doing, merchants reduced high per unit

[103] Murray Samson & Company to Levi Hollingsworth, January 5, 1784, Box 21, Folder 8, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[104] Murray Samson & Company to Levi Hollingsworth, June 3, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[105] Alan Taylor, *William Cooper's Town: Power and Persuasion on the Frontier of the Early American Republic* (New York: Vintage Books, 1995), 106-110.

transportation costs and reduced the risk of spoilage due to rot and transport damage. During the colonial era when Americans primarily exported raw natural resources, British firms captured most processing value added.[106] By investing in commercial infrastructure after the Revolution, American capitalists acquired these new and valuable revenue streams.

Investment in commercial infrastructure by land owners like Cooper and Hollingsworth also increased the value of their land-based assets by making properties more appealing to prospective buyers. Levi Hollingsworth did not hold the patriarchal landlord status of William Cooper—in fact, he speculated in land with little, if any, intention to develop it long-term. Nonetheless, Hollingsworth made commercial infrastructure investment central to his marketing and deal execution strategy. In describing his plan for lands in Virginia and Kentucky to Enoch Story on January 2, 1787, Hollingsworth described the importance of building a saw and grist mill "for every Twenty or thirty Thousand acres of Land."[107] Even better than constructing the mills himself, Hollingsworth preferred to serve as a financial conduit between interested "locals" and credit sources in Philadelphia. In his letter to Story, Hollingsworth argued that setting up a land company with a dedicated finance division would be the best and most profitable mode of selling their land holdings. "The said Land Company," Hollingsworth wrote, "should agree to advance five or six hundred Pounds for every Twenty or thirty Thousand acres of Land towards building a Grist and Saw Mill on the most suitable spot for that purpose it would very much promote the Settlement of the Land."[108] Not only did financing mill construction boost interest in, and thus the price of, his settlement tracts, but Hollingsworth avoided the risks and hassle of

[106] For more detail on the changes to the American export basket over the course of the Revolutionary era, see Tables 1.1 and 1.2 in Chapter 1 of this dissertation.
[107] Levi Hollingsworth to Enoch Story, January 2, 1787, Levi Hollingsworth Letter Book, Dec. 1786-Mar. 1791, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[108] Ibid.

directly owning and operating mills. In this way, Hollingsworth neither farmed, milled, or transported the wheat used to produce the flour whose market he dominated. Rather, he organized, facilitated, and operationalized the means of flour production, while adding value to this extensive land holdings.

Regardless of his interest in the land or wheat itself, Hollingsworth's construction and financing of commercial infrastructure connected increasingly distant agricultural areas to urban hubs. By building and financing commercial infrastructure, merchant capitalists like Hollingsworth and Cooper became domestic market makers while further integrating the new American market with the broader Atlantic World. "By controlling access to land, the import and export of goods, and the extension of credit," Peter C. Mancall notes, "the landholders exerted an enormous influence over the entire regional population. They became the link between [rural] residents and the Atlantic economy."[109] While Americans continued moving West in record numbers, merchants like Hollingsworth and Cooper built the increasingly-integrated national market even as the geographical boundaries of the nation expanded.

As the nation's frontier moved westward, market connection made by landowners like Hollingsworth, Morris, and Cooper played a critical role in connecting rural areas to domestic port cities and the broader Atlantic market. Historian Alan Taylor argues that "frontier settlement was the cutting edge of market society," and that market society relied heavily on the integration of regional economies into a broader whole.[110] Cooper blazed commercial connections with Albany, New York City, and a host of other regional destinations.[111] Slightly further south, Hollingsworth and Morris drew regional economies into greater commercial relations with

[109] Mancall, *Valley of Opportunity*, 202.
[110] Taylor, *William Cooper's Town,* 103.
[111] Taylor, *William Cooper's Town*, 110.

Philadelphia, Baltimore, and Alexandria. While Hollingsworth and Morris based their operations in Philadelphia, they utilized detailed information networks to dispense imports and exports to the locations in which they would receive the best price. As those regional markets became increasingly integrated, price differentiation diminished as well. In so doing, they made the American market increasingly national. Growing interurban and urban-rural commercial networks smoothed price differentiations and, perhaps without realizing it, built what Levi Hollingsworth described to Richard Bassett, Esq., of Bohemia in January 1808, as "our American market."[112]

Information Flows

Revolutionary changes in information flows during the 1790s represent the greatest indicator of the growing integration of the American market. In analyzing the emergence of early American capitalism, the development of timely information flows became both the indicator of market integration and an important driver of economic growth in the 1790s. "None of the interurban commodity, capital, and human flows that are the outward expression of growth," historical geographer Allan R. Pred, writes, "can transpire unless there is either the transmission of knowledge about demand, prices, and opportunities or some other form of information exchange."[113] Of course, the telegraph and its widespread adoption in the 1840s and 1850s fundamentally changed long-distance communication. However, the American market had become largely integrated long before Samuel Morse's line carried "What hath God Wrought?" between Baltimore and Washington D.C. in 1844. Accelerating information flows made early

[112] Levi Hollingsworth to Richard Bassett, Esq., January 28, 1808, Levi Hollingsworth Letter Book, 1806-1811, page 152, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[113] Allan Pred, *Urban growth and the circulation of information: The United States system of cities, 1790-1840* (Cambridge, Mass.: Harvard University Press, 1973), 2.

Republican commerce more dynamic while providing a substantive metric of how integrated the American market had become.

During the colonial era, American cities, to say nothing about rural areas, according to Pred, "existed in a state of extreme isolation with respect to domestic public information" and commercial integration.[114] While efforts to integrate American commercial and communication networks began immediately upon independence from Great Britain, the United States remained in a state of information isolation as late as 1790. "For most of the eighteenth century," Pred writes, "this isolation was so great that even local news at times reached England before nearby colonies."[115] Both domestic and foreign merchants often guessed as to which market they should send their goods for sale, resulting in massive inefficiencies and added costs. London merchant *Murray Samson & Company* told Levi Hollingsworth of how their ship landed in Charleston, only to find a massive glut that made their goods unsellable. In this situation, Samson had no choice but to spend an extra week in port before weighing anchor and departing for Savannah in hopes of a better market. Even then, the captain hoped, but did not know, that Savannah would be any better.[116] Such a detour could increase Samson's costs by over ten percent, severely cutting into or even eliminating potential profits.

Merchants across the new United States regularly begged correspondents to divulge "the state of your market." Nalbro Frazier routinely ended his letters by asking correspondents to provide intelligence on their markets, often offering information on Philadelphia in return.[117] In 1786 Anthony L. Bleeker told London merchant Thomas Blane that market opacity had caused

[114] Pred, *Urban growth and the circulation of information*, 35.
[115] Pred, *Urban growth and the circulation of information*, 24.
[116] Murray Samson & Company to Levi Hollingsworth, June 5, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[117] Two examples can be found in Nalbro Frazier to William Price & Company, November 29, 1783, Nalbro Frazier Letter book, 1783-1799, pg. 45-46, New York Public Library, and Nalbro Frazier to Daniel Bowden & Son, July 1, 1790, Nalbro Frazier Letter book, 1783-1799, pg. 226, New York Public Library.

merchants to send vast quantities of goods to New York despite the fact that "Our market at this time is very plentifully supplied with commodities of every sort usually shipt from your side of the water."[118] Even in December of 1789, William Constable routinely vented about his lack of knowledge of Robert Morris's market just 90 miles south in Philadelphia. Despite considerable effort to centralize and coordinate information flows between allied firms, the process remained slow.[119]

In a climate of information asymmetry, market information became as valuable as any commodity carried in a ship's cargo hold. As a result, price currents became a primary medium of exchange. Discussed in greater depth in Chapter 5, the access to and distribution of price currents could make or break a young merchant's career. In case after case, novice traders solicited business by including extensive price currents at the end of their proposals. In a September 6, 1784 letter to Nicholas Brown, Ebin Hill of Dorchester County, Maryland sought "to inform you of a scheme of Business that I think may prove Advantageous to both of us." He wrote, "I am loath to write the particulars for fear of miscarriage," but proceeded to include a five-line, 16-commodity price current with detailed commentary immediately thereafter, noting that he would contact them again soon.[120] Brown received this type of solicitation constantly, as young men sought to entice Brown with their knowledge and access to commercial intelligence. Edward Goold of New York wrote to Brown in July of 1784, stating, "I have formed a connection with Mr. Daniell Ludlow a Gentl. I believe well known in your parts. We are totally in the commission line and now do Business under the firm of Ludlow & Goold & shall be

[118] Anthony L. Bleeker to Thomas Blane, May 29, 1786, Anthony L. Bleeker Letter Book, 1767-1787, Bleeker Family Papers, New-York Historical Society.
[119] William Constable to Robert Morris, December 17, 1789, William Constable Letter Book, 1782-1790, page 213, Constable-Pierrepont Papers, New York Public Library.
[120] Ebin Hill to Nicholas Brown, September 6, 1784, Box 366, Folder 2, Brown Family Business Records, The John Carter Brown Library at Brown University.

happy to renew our former correspondence & will engage to transact your Business…in this City. I enclose you our price current & am Your Most Obedient Servant…."[121] Goold attached a mammoth price current of almost a page, detailing his knowledge of the New York market. While not especially impressed with Goold, Brown treasured the price current and encouraged correspondents to send him local market data.

When establishing his merchant business after the Revolution, William Constable mastered the art of soliciting business with information. Almost every letter Constable wrote during 1783 and 1784 contained a price current of some kind, often followed by a postscript reminding his correspondent of the costs attached to information-less trade.[122] Constable often tailored the price current to its recipient, and offered to "hold you apprised [of market changes] from time to time." For example, in a December 1787 letter to "Jarvis," an otherwise unknown trader interested in financial speculation, Constable uncharacteristically included paper money exchange rates in New York.[123] Likewise, Constable included gold and silver coin prices in his June 1789 letter to English merchant Alexander Ellice, including detailed analysis of specie price trends.[124] Changes to Constable's letter-writing style demonstrate his use of price information to drum up business. After 1789, at which point he had established himself as a central player in both Robert Morris's mercantile network and New York's commercial community, Constable virtually ceased including price data in his personal letters.

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[121] Edward Goold to Nicholas Brown, September July 20, 1784, Box 44, Folder 8, Brown Family Business Records, The John Carter Brown Library at Brown University.
[122] For just a few examples see William Constable to Mallet & Jenkes, November 20, 1783, William Constable Letter book, 1782-1790, page 81, Constable-Pierrepont Papers, New York Public Library; William Constable to McLean & Moore, November 12, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library; William Constable to Gabriel Tegelaar, June 1, 1783, pp. 52-53, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[123] William Constable to Jarvis, December 5, 1783, pg. 22, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library
[124] William Constable to Alexander Ellice, June 11, 1789, pg. 81-82, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

The change in the composition of Constable's letters by 1790 likely demonstrated the change in his commercial position, but it also represented the broader availability of commercial information that both contributed to and resulted from the increasing integration of American markets. In other words, information became commoditized and entrepreneurs rushed to supply the market. "The upswing of trade in the 1790s, and the consequent increase in demand for information by importers, exporters, brokers, and other middlemen, engendered a more extensive and specialized journalistic treatment," Allan Pred writes. Not only did newspapers begin to allocate increasing amounts of space to price currents and other commercial information, but independent journals dedicated to business intelligence began to emerge by the mid-1790s.[125] By 1796, the *Pennsylvania Mercury and Philadelphia Price-Current, Boston Price-Current and Marine Intelligencer,* and the *New York Price-Current* provided readers with detailed commercial data on a weekly or even daily basis.[126]

The growth of newspaper circulation in the new Republic's first years signaled increasing informational integration, while perpetuating commercial development. Newspaper editions per week grew by 165 percent between 1790 and 1800 (16.5 percent per year) and then another 41 percent between 1800 and 1810. Additionally, the number of daily newspapers, many of which included detailed price currents, grew from 8 to 24 during the 1790s. Impressively, the total annual number of circulated newspapers jumped from 3,975,000 in 1790 to approximately 12,500,000 in 1800 and 24,577,000 in 1810 (a 214 and 97 percent jump respectively). Most importantly of all, the growth in newspaper circulation well outpaced population growth,

[125] Pred, *Urban growth and the circulation of information*, 25.
[126] The *Pennsylvania Mercury and Philadelphia Price-Current* began publication on August 20, 1784 as *The Pennsylvania Mercury and Universal Advertiser*, including columns on "Agriculture," "land use," "Ship News," and Foreign Intelligence," along with a half-column price current on the third page. By June 1, 1791, the paper had changed its format to feature an extensive price current covering most of their first two pages. The *Boston Price-Current and Marine Intelligencer* and the *New York Price-Current* began publication a few years later, including a vast array of prices and commercial information from across the United States.

meaning that every American—or at least every urban American—had access to over twice the information in 1800 than he or she had in 1790. While the proliferation of newspapers carried a wide array of implications for early American society, the dramatic increase of commercial information played a vital role in making the American market more efficient.[127]

The growing supply of market data only led to market integration if that information spread to other cities and urban systems with increasing speed and efficiency. While colonial and even Confederation-era America existed in a pronounced state of information isolation, the increase of journalism, infrastructure investment, and market access resulted in tremendous information gains during the first half of the 1790s. Road and water travel improvements resulted in faster and cheaper communication across the country. Both private and public carriers took advantage of these improvements, resulting in accelerating information flows.[128] As a result, merchants and producers, in both urban and rural areas, could select better markets for their goods, make their distribution more efficient, and claim the benefits of greater specialization made possible by a deeper and more integrated domestic market.

Largely due to small scale infrastructure improvements, information transit times fell considerably during the first half of the 1790s. The information time lag between Philadelphia and New York fell approximately 60 percent between 1790 and 1794, from 4 days to 1.6 days. The Boston to Philadelphia information lag fell 43.3 percent from 12 to 6.8 days, while Philadelphia to Baltimore times fell approximately 40 percent from 6 to 3.6 days.[129] Information transit times between urban and rural areas undoubtedly took much longer than interurban routes of similar distances. Nonetheless, evidence suggests that the rate of change declines between

[127] Carol Sue Humphrey, *The Press of the Young Republic, 1783-1833* (Westport, Conn: Greenwood Press, 1996), 51-53. Pred, *Urban growth and the circulation of information*, 21.
[128] Pred, *Urban growth and the circulation of information*, 39.
[129] Pred, *Urban growth and the circulation of information*, 42.

urban and rural areas equaled or even exceeded improvements in interurban information transmission time. For example, Pred suggests that the information lag between Philadelphia and Harrisburg/Middletown fell from at least 15 days in 1790 to approximately 7 days in 1794. Likewise, the information lag between Boston and rural areas throughout the Connecticut River valley in 1790 registered at almost 10 days. That number fell to approximately four days by 1795.[130] While these changes in information lag times did not fundamentally alter American commercial structures, merchants' ability to obtain "current" information—information dispatched and received within a week—and act before the market changed became a considerable asset.

Travel times continued to fall throughout the early Republic. The average travel time between Philadelphia and New York fell from slightly over one day in 1790 to less than 0.6 days in 1810. Travel from New York to Boston declined from approximately 4 days in 1790 to 2 days in 1815. The travel time gap fell most considerably between Philadelphia and Baltimore, where travel times declined from approximately 3.5 days in 1790 to about 0.65 days in 1819. Travel from New York City to Albany took over 4 days in 1785, whereas the same trip took one day in 1810.[131] Just as with information time lags, falling travel times allowed merchants to bring goods to market—both manufactured goods to rural distributors and agricultural commodities to port—much quicker. As a result, merchants reduced spoilage and built more efficient commercial relationships with suppliers.

Due to faster travel times and better transportation conditions, the cost of travel across the new United States fell dramatically during the 1790s. While freight charges remain difficult to establish with any constancy, freight and personal travel prices responded to the same

[130] Pred, *Urban growth and the circulation of information*, 37-41.
[131] Pred, *Urban growth and the circulation of information*, 178-182.

determinant factors. Allan Pred finds that one-way travel fares between New York and Boston fell from $21 (in 1972 current dollars) in 1790 to approximately $10 in 1802. Travel costs between Philadelphia and Baltimore saw a smaller, but still significant decline from $10 in 1790 to $6 in 1796. During the same period, fares from Philadelphia to New York fell from $9 to $6.[132] If freight fees followed similar trajectories, the savings in transportation costs would have significantly increased commercial profits, capital accumulation, and domestic market competition.

High transportation costs within the domestic market during the colonial era only reinforced the large-scale commodity export model, by making domestic exchange too costly to merit significant engagement. However, the fall of domestic transportation costs not only improved the profitability of external trade by reducing friction between merchants and suppliers, but it also encouraged the domestic market by reducing the importance of economies of scale. Armed with current price information and significantly reduced transaction costs, American merchants like Jeremiah Wadsworth and Levi Hollingsworth began to see the domestic market as a viable outlet for their products.

Conclusion

The American market revolution that took place between 1765 and 1807 parallels numerous other changes in American society. The new states excised themselves from the

[132] Pred, *Urban growth and the circulation of information*, 145-146. The data presented by Pred reveals an interesting control for the importance of technology in the reduction of transportation costs. While routes with viable options for land travel saw precipitous declines in transportation costs due to the improvement of roads, strict riparian routes, such as the New York City to Albany connection, saw transportation costs remain stable until the implementation of widespread steamboat traffic in the mid-1820s. For example, while routes like New York to Boston or Philadelphia to New York saw transportation costs fall between 33 and 50 percent during the 1790s, the one-way cost of travel between New York and Albany remained constant at $7 from 1797 to 1823. Then, due to the establishment of consistent steamboat traffic, the one-way fare fell to just $1 by 1829.

British empire, establishing a free and independent nation. In the same way, the American market became an integrated and free-standing economic entity. Yet unlike the constituted union that came together at a specific time at the behest of a relatively limited set of individuals, the American national market emerged from by more organic means. While federal policies such as Alexander Hamilton's debt and banking plans and the constitutional prohibitions of interstate tariff barriers removed structural obstacles to national market integration, state governments and individual merchants deserve the credit for stitching the new nation's economy together.

While the percentage of Americans living in cities remained low compared to European nations, the post-Revolutionary surge in America's marginal urbanization rate facilitated a fundamental increase in productivity and paved the way for economic growth throughout the 1790s. The increasing sophistication of America's urban economies spilled over into its vast agricultural sector, as better access to markets and decreased transportation costs incentivized farmers to produce more and better products. In so doing, a unique form of American urbanization arose, one in which the urbanization rate remained relatively low but increasing populations of specialized urban workers, especially merchants, optimized the nation's already substantial comparative advantage in agriculture.

Crises, both economic and political, played a vital role in uniting the disparate colonial market. The Seven Years War and Revolutionary War fostered commercial networks that transcended regional boundaries, while the commercial crises that followed each war drove merchants to geographically and sectorally diversify their businesses. Small-scale, state-funded improvements to roads and river navigation created the arteries and capillaries through which national commercial networks flowed in times of peace. While the federal government played little role in funding or building these "ligaments" of market integration, the effect was clearly

nationalization. From this polycentric proliferation of internal improvements and mercantile networks, a national market arose that allowed American goods, capital, and labor to flow between states as never before. Information lags, travel times, and travel costs all fell precipitously during the new Republic's first two decades, in a cycle that both proved and facilitated greater national market integration. In sum, as merchants and states struggled to adapt to the contingent events inherent in Revolution and Depression, they created a flexible and expansive market order that fostered specialized entrepreneurship well into the nineteenth century.

Chapter 4

Networks: Connection and Growth

Upon independence in early 1783, American merchants faced the daunting prospect of rebuilding their economy and the commercial networks on which that economy rested. Almost nine years of combat, blockades, and embargos shattered colonial credit and commercial networks, along with the bonds of trust that soldered those networks together. As previous chapters have shown, segmentation marked the post-Revolutionary economic landscape—state tariff barriers prevented trade, nonexistent roads and canals thwarted the movement of goods, and geopolitical volatility interrupted the flows of commerce and credit upon which American merchants had built their livelihood. In a very practical sense, the Revolution disrupted human networks as well. The death or maiming of patriots and decampment of loyalists foundered the commercial networks that made colonial America one of the wealthiest societies on earth.[1]

The war also bred distrust between former trading partners. In July 1788, John Francis of Boston eyed "the New Yorkers," and his former counterparties "[Alexander] McCoobe & [William] Edgar" in particular, with suspicion, telling Nicholas Brown that he would only consider business deals with "PATRIOTIC Acquaintances" [Emphasis in Original].[2] At the same time, the war and Depression of the 1780s severed bonds of trust between long-held commercial partners. The post-Revolutionary world offered tremendous opportunities to those who could

[1] In Alice Hanson Jones, *Wealth of a Nation to Be: The American Colonies on the Eve of the Revolution* (New York: Columbia University Press, 1980), the author calculates a total average annual income of £13.85 ($1840 in 2015 dollars) for future Americans. This figure includes indentured servants and slaves, and exceeded that of Britons on the home island whose income Jones estimated at £10-12 ($1510 in 2015 dollars). While Jones's calculations include significant regional disparities—New England at $1665, the Mid-Atlantic at $2085, and South at $1800—the average colonial American commanded higher income than any counterpart in the western world.

[2] John Francis to Nicholas Brown, July 23, 1788, Box 24, Folder 5, Brown Family Business Records, The John Carter Brown Library at Brown University.

build networks capable of linking hungry consumers with new markets and eager suppliers. Those post-Revolutionary merchants best able to build connectivity faced the greatest chance of success in the volatile early American economy.

Historians have long struggled to reconstruct and analyze commercial networks, especially those that existed before the era of modern data collection.[3] In the absence of cogent data series, scholars have turned to qualitative sources such as letters and other relational documentation. While imperfect, studies by David Hancock, Sherylynne Haggerty, Carolyn Downs, Tom Cutterham, and others have forced historians to consider correspondence as part of a broader web of commercial interaction rather than simply a linear series of conversations.[4] In so doing, historians have engaged the work of sociologists and economists, scholarly traditions that have long analyzed the multifaceted relationships reaching a large series of individuals.[5]

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[3] Scholars have long struggled to calculate GDP per capita and productivity for the "statistical dark age" between 1790 and 1840. Paul A. David, "New Light on a Statistical Dark Age: U.S. Real Product Growth Before 1840," *The American Economic Review* 57, no. 2 (May 1967), Thomas Weiss, "U. S. Labor Force Estimates and Economic Growth, 1800-1860," in Robert E. Gallman and John Joseph Wallis, ed., *American Economic Growth and Standards of Living before the Civil War* (Chicago: University of Chicago Press, 1992), 19-78, Marvin Towne and Wayne Rasmussen, "Farm Gross Product and Gross Investment in the Nineteenth Century," in *Trends in the American Economy in the Nineteenth Century*, ed. William N. Parker (Princeton: Princeton University Press, 1960), Robert Martin, *National Income in the United States, 1799-1938* (New York: National Industrial Conference Board, 1939), Douglass C. North, *Growth and Welfare in the American Past: A New Economic History* (Englewood Cliffs, N.J.:Prentice-Hall, 1966), and W.W. Rostow, *The Stages of Economic Growth* (Cambridge: The University Press, 1960) have all attempted to understand the dynamics of early American standards of living and economic growth. The absence of solid government data on productivity and economic output severely limited these efforts. Only with the inception of the U.S. Census Agricultural survey in 1840 did comprehensive statistics on output and occupational distribution for the economy at large become available.

[4] David Hancock, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735-1785* (New York: Cambridge University Press, 2005); Sherylynne Haggerty, *'Merely for Money'?: Business Culture in the British Atlantic, 1750-1815* (Liverpool: Liverpool University Press, 2014); Sherylynne Haggerty, "A Link in the Chain: Trade and the Transshipment of Knowledge in the Late Eighteenth Century," *International Journal of Maritime History* 14, no. 1 (Jun., 2002), 157-172; John Haggerty and Sherylynne Haggerty, "The Life Cycle of a Metropolitan Business Network: Liverpool 1750-1810," *Explorations in Economic History* 48, no. 2, 189-206; Carolyn Downs, "Networks, Trust, and Risk Mitigation during the American Revolutionary War: A Case Study," *Economic History Review* 70, no. 2 (Apr., 2017), 509-528; Cutterham, "The Revolutionary Transformation of American Merchant Networks," 1-31.

[5] Haggerty, *"Merely for Money?"*; Mark Casson, *Entrepreneurship: Theory, Networks, History* (Cheltenham, UK: Edward Elgar, 2010); Robin Pearson and David Richardson, "Business Networking in the Industrial Revolution," *Economic History Review* 54, No. 4 (2001): 657–679; Magrit Schulte Beerbühl and Jörg Vögele, ed., *Spinning the Commercial Web: International Trade, Merchants, and Commercial Cities, 1640–1939* (Oxford: Peter Lang, 2004); James Rauch, "Business and Social Networks in International Trade," *Journal of Economic Literature* 39, no. 4

Nevertheless, studies that rely on qualitative models of commercial networks contain significant flaws. First and foremost, personal papers collections, and letter collections in particular, often feature large gaps due to archival lapses and artifact loss. Second, letters do not represent, and were never intended to be, a comprehensive record of a merchant's commercial activities. Letters reveal who a merchant corresponded with, not those with whom he traded. In writing to a friend, a merchant might discuss a small transaction in-depth while omitting some of his most important commercial activities. Third, correspondence also lacks a systematic means of weighting the importance or value of commercial connections. Simply counting the number of letters between two parties or searching language for indicators of connection remains a fundamentally limited mode of analysis. Most importantly, network analysis using qualitative sources elevates relational rather than commercial connection. For example, merchants disproportionally write to, discuss, or mention friends, family, or co-religionists at the expense of socially distant but commercially essential players with whom they have no non-commercial relationship. Due to the lack of evidence, historians tacitly assume the absence of letters as a lack of commercial contact, but merchants often traded with non-correspondents. A focus on correspondence also disadvantages external trades in which the primary merchant played a relevant but still secondary role, such as investments or clearing house operations. In sum, using qualitative sources to analyze early American commercial networks has provides a rudimentary but deeply flawed understanding of how early American commercial networks developed and functioned.

This chapter employs a novel method of building large commercial databases out of previously ignored archival texts. Historians have long used ledger books to do forensic

(2001): 1177–1203; John F. Wilson and Andrew Popp, "Business Networking in the Industrial Revolution: Some Comments," *Economic History Review* 56, no. 2 (2003), 355–361.

accounting and unwind a commercial actor's financial positions. However, each ledger contains thousands of binary commercial relationships between the ledger book owner and those with whom he had accounts. Additionally, ledgers contain transactions between account holders and third parties in which the primary merchant only served as a clearing authority.[6] Equally important, the monetary value of the transaction serves as a natural weight for each individual commercial relationship. In contrast with letter books which are inherently selective, merchants designed ledger books to represent the entirety of their commercial actions for a given time. Thus, ledger books provide a much more complete view of the primary, secondary, and tertiary levels of a merchant's commercial network.

This chapter uses the ledger books of New York merchant William Constable to build an extensive case study of how merchant networks evolved during the early Republic. By gleaning Constable's ledgers for the years 1786-1787 and 1791-1802, this chapter employs a dataset of 15,691 binary commercial relationships, nearly 3,000 of which do not directly include Constable or his subsidiary firms.[7] Combined with other archival data sets including the rosters from 14

[6] Collecting third-party commercial transactions relies on a basic understanding of the composition and structure of early American ledger books. In each ledger, individual counterparties (secondary actor) have their own pages that list their transactions with the book holder (primary actor). However, in many cases a third individual or firm (tertiary actor) appears as either the debtor or a creditor to the secondary actor. This situation arises where the secondary actor and a tertiary actor executed a transaction and William Constable simply transferred funds from one party to the other. Since the funding flowed through Constable, the transactions appear in Constable's ledger. Nonetheless, these transactions took place between two separate parties without Constable holding a specific interest in the trade. Thus, ledger books for a certain individual, in this case William Constable, can include hundreds or even thousands of transactions in which the primary actor did not directly participate. The aggregation of third-party commercial connections marks the most significant contribution of this new method. Scholars have long understood the value of ledger books to recreate the business practices between a book holder and his counterparties. This method allows historians to collect and analyze an entire series of transactions from secondary and tertiary actors, for whom no business records may have survived. Thus, using this method scholars can reconstruct commercial networks for tertiary figures for whom not direct account of their commercial activities exist and that did not even directly trade with a primary actors. As a result, historians can recreate and better understand early American networks that included individuals that traditional research methods have omitted, ignored, or simply missed.

[7] For a detailed description of how the author derived nearly 3,000 commercial transactions from William Constable's ledger books that did not directly involved Constable, see Footnote 6 above; Constable, Rucker, & Co. Ledgerbook, 1786-1787, Constable-Pierrepont Papers, 1762-1911, Vol. 6, New York Public Library and William Constable & Company Ledgerbook, 1791-1802, Constable-Pierrepont Papers, 1762-1911, Vol. 42, New York Public Library.

Revolution-based social organizations (RBSOs), this chapter reconstructs and analyzes the commercial network of Constable and over 1,000 of his associates. Using network analysis tools like Gephi and forensic statistical investigation, this chapter demonstrates that early American commercial networks followed trends demonstrated in other sectors of the economy such as bi-modal expansion, specialization, financialization, and integration with a geographically diverse group of commercial partners.

More broadly, the conversion of ledger books into network data opens a new window into the commercial interactions of early American merchants. The "statistical dark age" from 1790-1840 not only blinded quantitative historians to macroeconomic developments, but it also limited the capacity of scholars of early America to understand the commercial bonds that united Americans after the Revolution. The available evidence, mostly in the form of letters and organizational rosters, fundamentally constrained the possibilities frontier for scholarship. The number of letters one merchant wrote to another did not in any way objectively represent the depth of their commercial bond. Rather than building one person or firms' network from the communication he, or historical preservationists, passed down to us, this new ledger book methodology allows scholars to unwind how the American merchant community morphed, changed, and adapted to exogenous events. As this ledger book-based network analysis shows, the American merchant community was much more than the sum of its parts. As a disparate but deeply connected unit, American merchants formed institutions, morays, and networks that allowed the American economy to respond to the devastation of the Revolutionary War.

While the Revolution undoubtedly caused widespread damage to American commercial networks, it also served as the basis of their reconstruction during the 1780s and 1790s. The war and subsequent depression disrupted existing social structures, but it also became a major source

of social capital. This capital collected in RBSOs such as the Ancient Masonic Lodge, the Friendly Sons of St. Patrick and St. Andrews Society, chambers of commerce, and various veterans' groups that provided an essential baseline of trust and solidarity that made commercial network formation possible in the tumultuous 1780s. RBSOs connected likeminded merchant-entrepreneurs in social relationships that transcended purely economic calculus.

Merchants like Constable utilized and deployed this social capital to jumpstart their post-Revolutionary firms and build or rebuild their commercial networks. Nevertheless, RBSOs became less important as merchants extended their commercial reach. Networks did not always expand —in many cases the number of counterparties shrank in number while they became increasingly specialized and relationally dense. Greater density—meaning the degree to which all individuals in a network are connected with each other[8]—led to greater network efficiency, and as a result higher productivity and greater profits. Put another way, established organizations like the Friendly Sons of St. Patrick subsidized, or underwrote, the trust needed to build commercial bonds. However, over time trust moved from the organizations underwriting the networks to the networks themselves.

In sum, early American commercial networks proved remarkably dynamic. William Constable's network changed markedly in scope, depth, and composition between 1786 and 1802 as his scattered and highly-clustered post-Revolutionary network transformed into a dense, specialized, and profitable system of investors and counterparties. This chapter illuminates William Constable's vast commercial network and the role it played in the development of American domestic, national, and Atlantic trade.

[8] In network analysis, absolute density would mean every actor and in a network is connected with every other actor in that network.

Trust and Trade

From the earliest days of colonial trade, trust anchored commercial connection. As trade networks grew to include geographically and culturally distinct counterparties, a unified framework of relational dependence became essential for goods, services, and credit to flow between markets. A trustworthy reputation became as essential to a merchant's success as the actual products he dispensed to distant ports. David Hancock and Nuala Zahedieh have discussed the importance of reputation to colonial trade in depth, showing the importance of trust in the creation of modern commercial bonds.[9] "Reputation, or trustworthiness, was built on a universally accepted code of conduct," Zahedieh writes, "which had evolved alongside an increasingly commercial society, combining rules of reason and religion, interest, and honor."[10] Zahedieh argues that a widely agreed upon "rules of the game" anchored the universal business culture that arose alongside at developing series of "commercial needs."[11] The "rules of the game" unified commercial actors across the Atlantic World, establishing a commercial *lingua franca* of business conduct that allowed merchants to "develop lines of credit, minimize his transaction costs, exploit his specialized market knowledge, and use insider information to develop new opportunities minimizing risk."[12] As a result, many American merchants who survived the Revolution had never known commercial life outside of this business culture built on trust and reputation.

In many cases, this Atlantic World business culture manifested itself in extensive correspondence and personal recommendations. Character recommendations permeated

[9] Zahedieh, *The Capital and the Colonies*, 81-109; Hancock, *Citizens of the World*, 319-385.
[10] Zahedieh, *The Capital and the Colonies*, 94.
[11] Zahedieh, *The Capital and the Colonies*, 94-95.
[12] Downs, "Networks, Trust, and Risk Mitigation during the American Revolutionary War," 510; Daviken Studnicki-Gizbert, *A Nation upon the Ocean Sea: Portugal's Atlantic Diaspora and the Crisis of the Spanish Empire, 1492-1640* (Cambridge: Cambridge University Press, 2007), 100-137.

merchant correspondence, as potential business partners sought information on prospective counterparties. For instance, in April 1785 Benjamin Foster of Newport wrote to Nicholas Brown requesting information on the character of Joseph Wilson, who had approached Foster with a new business venture.[13] Brown claimed no first-hand knowledge of Wilson's trading habits, though he reiterated the importance of doing business with "men of character." The "character of a merchant" became short-hand for adherence to Zahedieh's rules of the game—they paid their debts, dispatched cargos on time, quoted accurate prices, and provided sufficient information. Merchants demanded "probity" and "punctuality" in their commercial partners, or at least claimed to do so. While many merchants let their standards slide when profits presented themselves, the rules of the game became a baseline by which the merchants measured potential partners.[14]

In many cases, reputational capital accrued through a blend of honest conduct and self-promotion. Nalbro Frazier of Philadelphia mastered the art of reputation building, telling a correspondent, "Happy I am to tell you that those valuable Connections which I have formed," Frazier wrote, "and the good opinion (without flattering myself) which I am persuaded the most substantial People here entertain of me, has principally arisen from that attention which has mark.d my Conuct in my Business since my arrival." Frazier concluded his self-aggrandizing testament by promoting a colleague, claiming that "Mr. Ingraham whom we shortly expect will be able to confirm to you those things which I have just before mentioned."[15] As Frazier's

[13] Benjamin Foster to Nicholas Brown, April 5, 1785, Box 366, Folder 8, Brown Family Business Records, The John Carter Brown Library at Brown University.
[14] James Wells to John Chaloner, November 14, 1784, Box 12, Folder 7, Chaloner and White Records, Historical Society of Pennsylvania; John Hopkins to John Chaloner, June 13, 1784, Box 12, Folder 4, Chaloner and White Records, Historical Society of Pennsylvania.
[15] Nalbro Frazier to [unidentified correspondent], date unreadable, Nalbro Frazier Letterbook, pg. 60, Historical Society of Pennsylvania.

reputation grew, he regularly affirmed the reputation of others, allowing them to draw on his hard-won social capital.[16]

Unfortunately, not even Frazier's substantial social capital stock could withstand the economic trauma of the Revolution and Depression of the 1780s. The widespread bankruptcies that hit Philadelphia, New York, Charleston, and other urban centers raised suspicion that even the most prominent merchants would not pay their debts.[17] In May of 1786, Edward Dowling of London wrote to John Amory Jr. of Boston asking about Frazier's reputation. "We have done all the Business with N. Frazier," Dowling wrote, but "do you reckon him [of] good [reputation]? He used to be a safe partner but the recent events have cast doubt on the majority of your countrymen."[18] Domestic and foreign contacts alike began to question the traditional reputation-based model during the 1780s. The cascading bankruptcies, payment delinquencies, rampant deflation, and politico-economic impediments fractured the reputational bonds upon which much of colonial commercial networks rested.

While the culture of merchant character carried into the immediate post-Revolutionary years, the Revolution itself severely damaged the bonds of trust that tied the colonial economy

[16] It should be set however, that some scholars contest the notion of a merchant character as having any actual bearing on connections trade. For example, Tom Cutterham's paper at the Business History Conference 2017 entitled "Credit and Deception in Transatlantic Finance, 1784-1792," used merchant Daniel Parker as evidence that posturing and image meant much more to success in the merchant trade then his adherence to the "code of merchants." Cutterham argues that Parker's Ponzi scheme worked, and that all a merchant had to do was convince new trading partners of his reliability with the increasingly ostentatious displays of wealth. Once Parker's reputation cratered with one circle, he would simply move onto the next. While these types of arguments certainly show that specific individuals could charm their way into large credit lines, they say nothing about the broader impact those merchants made on the economic and commercial systems. Despite his ability to evade his creditors and convince others to provide him loans, Parker became an increasingly marginal figure in American commercial circles. Merchants too actually added value to the growing American commercial economy acted in very different ways than Parker. While merchants like Robert Morris eventually went bankrupt, they did so by playing within the rules of the game.

[17] See Chapter 1, pp. 75-78, for detail on the bankruptcies that struck the American economy between 1785 and 1789.

[18] Edward Dowling to John Amory Jr., May 26, 1786, J. and J. Amory Business Papers, Box 52, Baker Library at the Harvard Business School.

together. Many prominent loyalist merchants absconded to Canada or Britain, taking financial and social capital with them.[19] After the war, loyalists like John Forsyth and James Ellice returned to the United States, only to find their property and assets seized by patriot legislatures.[20] Some loyalists successfully sued to regain their confiscated or damaged property and substantial numbers, including Forsyth and Ellice, began reconstituting their prewar commercial networks.[21] Nonetheless, skepticism remained the norm as the stress of depression exacerbated Revolutionary tensions.

Divides formed among Patriots as well. Common American merchants and traders developed a deep skepticism for their elite competitors who made fortunes by provisioning the American and French armies. A large cohort of merchants with connections to the Revolutionary commissariat including William Duer, William Constable, Jeremiah Wadsworth, Royal Flint, John Barker Church, Thomas Fitzsimons, Andrew Craigie, and many others controlled a substantial portion of Continental contracts for flour, clothing, gun powder, and many other essential commodities.[22] Though often late, commissariat-linked merchants generally fulfilled their contracts to provide supplies to the Continental Army. However, these merchants charged a

[19] Alan Taylor, *American Revolutions, A Continental History, 1750-1804* (New York: W.W. Norton & Co., 2016), 313-315 & 324-327.
[20] Van Cleve, *We Have Not a Government*, 96-98.
[21] Several prominent patriot attorneys including Alexander Hamilton took up the cause of returning loyalists. See Ron Chernow, *Alexander Hamilton* (New York: Penguin Books, 2004), 196-201. Hamilton became especially involved in the plight of returning loyalists. In addition to representing many loyalists in property claims, Hamilton penned two "Letters from Phocion," which argued that hope rest of treatment of them was a violation of both the letter and spirit of the law. Taking name particularly at the New York state legislature which attempted to pass numerous pieces up anti-loyalist legislation, Hamilton wrote, "The spirit of Whiggism cherishes legal liberty, holds the rights of every individual sacred, condemns or punishes no man without regular trial and conviction of some crime declared by antecedent laws, reprobates equally the punishment of the citizen by arbitrary acts of legislature, as by the lawless combinations of unauthorized individuals:— While these men are advocates for expelling a large number of their fellow-citizens unheard, untried; or if they cannot effect this, are for disfranchising them, in the face of the constitution, without the judgment of their peers, and the contrary to the law of the land."
[22] Cathy Matson, "Public Vices, Private Benefit: William Duer and His Circle, 1776-1792," in William Pencak and Conrad Edick Wright, ed., *New York in the Age of the Constitution* (New York: The New-York Historical Society, 1989), 92-96.

significant risk premium, leading to substantial profits when successful. Procurement merchants' profits caused significant consternation and even led commercial and political leaders to question their loyalty to the American cause.

The wartime experience of flour merchant Levi Hollingsworth exemplifies Revolutionary America's struggle to reconcile profit and patriotism. In 1779, Philadelphia's Wartime Governance Committee accused Hollingsworth of withholding wheat from hungry residents, leading to price gouging and scarcity in Philadelphia. The committee raided Hollingsworth's office, confiscated his papers, and temporarily imprisoned him for unpatriotic behavior.[23] Hollingsworth argued that his emphasis on military provision prevented grain from flowing to citizens in Philadelphia, while famine-induced scarcity delayed deliveries to the Continental Army. Nevertheless, the fact that Hollingsworth profited while supplying soldiers and citizens led many to question his patriotism.[24] The Revolutionary commissariat and those aligned with it certainly endured extensive risks in their wartime activities, but this cohort also benefitted greatly from their work provisioning allied forces. "The [Middle Colonies]'s biggest winners," historian Brooke Hunter argues, "were the handful of merchants who made large fortunes from blockade-running, privateering, and supplying army contracts."[25] While most commissary-aligned merchants did not face the consequences that Hollingsworth did, the idea that a powerful segment of the mercantile community gouged the struggling and hungry populace while reaping large profits caused significant rifts in the social fabric of America's commercial community.

While many secured substantial profits, the network-building effects of a continental conflict may have been the most valuable assets of this cohort's wartime activities. Whereas

[23] Brooke Hunter, "Rage for Grain: Flour Milling in the Mid-Atlantic, 1750-1815" (Ph.D Dissertation, University of Delaware, 2001), 110-111.
[24] Brooke Hunter, "Rage for Grain," 111-112.
[25] Brooke Hunter, "Rage for Grain," 143.

most colonial merchants operated in a limited, local area, the demands of large and constantly moving fighting forces required that merchants expand their procurement and distribution networks. Hollingsworth dramatically expanded his operations in Baltimore during the Revolution, and those connections remained a vital part of his business well into the 1800s.[26] Demands from General Nathaniel Greene and other Continental Army commanders required Hollingsworth to grow his Head of Elk, Maryland operations as well, which became a vital hub that connected a vast swath of Hollingsworth's postwar flour empire.[27] Import and export merchants like Thomas Fitzsimons also expanded their commercial reach, and built connections with powerful politicians in a way previously unavailable to them. Since importers of vital supplies like salt, gunpowder, medicine, and textiles needed explicit congressional waivers to conduct their business, previously unknown merchants like Fitzsimons gained valuable contacts in the political sphere.[28] The war undoubtedly expanded the reach of those who got close to power, and connected those merchants dedicated to—in a practical, if not always ideological way—the patriot cause.

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[26] James Calhoun to Levi Hollingsworth, June 24, 1783, Box 19, Folder 4, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger C, Feb. 1777-Mar. 1779, Vol. 13, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger D, Mar. 1779-Mar. 1780, Vol. 14, Hollingsworth Family Papers, The Historical Society of Pennsylvania;

[27] Colleen F. Raffterty, "To Establish an Intercourse Between Our Respective Houses: Economic Networks in the Mid-Atlantic, 1735-1815" (Ph.D Dissertation, University of Delaware, 2012), 155; Zeb Hollingsworth to Levi Hollingsworth, June 3, 1784, Box 23, Folder 2, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

[28] Fitzsimons masterfully exploited his wartime connections to political power in both the Pennsylvania Legislature and the Continental Congress. In addition to dramatically expanding his mercantile business, Fitzsimmons became deeply involved in politics. While deeply involved with civic society before the Revolution, Fitzsimons's Catholic faith precluded him from public service. Separation from Great Britain removed this barrier, and fit Simmons deployed his mercantile contacts to win him a seat in the Pennsylvania assembly by 1786. With the advent of the new constitutional regime in 1788, Fitzsimmons served three consecutive terms in the House of Representatives until John Swanwick beat him for his Philadelphia seat in 1794. Raffterty, "To Establish an Intercourse Between Our Respective Houses," 145-146; Richard J. Purcell, *Thomas Fitzsimons, Framer of the American Constitution* (Dublin, Ireland, 1938), 67.

The Revolution fundamentally disrupted the structure of colonial mercantile networks, while also becoming the foundation on which new network structures arose. The war shattered the local model that worked so well during the colonial era because the arbitrary nature of combat regularly separated local producers from their markets. Whereas local ecosystems around market-oriented farmers, commercial middlemen, and coastal import-export merchants thrived in an atmosphere of peace, the vagaries of combat made such a model untenable. Armies often resided in areas for extended periods, depleting or destroying the regional resource base. Out of necessity, wartime provisioners stretched their networks over a greater geographic area, drawing previously unknown resources and merchants into their commercial sphere. In sum, large, transregional or continental, Revolution-based superstructures began connecting producers and consumers in a way inconceivable before the war.

Organizations and Post-Revolutionary Network Building

For generations, scholars have posited religious and family ties as the building blocks of Revolutionary and post-Revolutionary networks. Nuala Zahedieh's work on colonial Quakers commercial bonds embody this work, but other scholars have continued to assert the essential nature of religion and family in the post-Revolutionary world.[29] In 1958, Stuart Bruchey asserted the centrality of family connection, arguing, "the 'extended kinship family' must be emphasized as a factor in the success of entrepreneurs."[30] Recent scholars have carried on Bruchey's vein of thinking as historians like Colleen F. Rafferty and Tom Cutterham have doubled down on the family thesis, arguing, in the words of the latter, "[Post-Revolutionary merchants] were…utterly

[29] Zahedieh, *The Capital and the Colonies*, 86-127.
[30] Stuart Bruchey, "Success and Failure Factors: American Merchants in Foreign Trade in the Eighteenth and Early Nineteenth Centuries," *The Business History Review* 32, no. 3 (Autumn, 1958), 287.

dependent on personal and kinship networks and relationships of trust with fellow merchants, suppliers, creditors, and debtors."[31] Due partially to source-limitations and partially to historians' reverence for past scholarship, the historiography of post-Revolutionary commerce has positioned colonial paradigms at the center of post-Revolutionary network creation.

While network-creation mechanisms fundamentally changed with the Revolution, family ties certainly played a role in the Revolutionary and post-Revolutionary commercial world. As they had for decades, firms often included family partners—Levi Hollingsworth, Nicholas Brown, Isaac Hazlehurst, Jeremiah Wadsworth, and William Constable all built firms that included at least one family member. Thomas Fitzsimons eventually married the daughter of his partner George Meade and William Constable's wife Ann held deep connections to the Phyn and Edgar families.[32] Ties of loyalty and reputation also transcended generations. "Let me remind you that the Accounts between Your Father & Mine," Charles Wharton wrote to Samuel Meredith, "are still unsettled and is the cause of much uneasiness between our Familys."[33] Familial bonds of trust remained important in the tumultuous postwar environment. However, the dispersed and diversified world of post-Revolutionary commerce made family a complement rather than a cornerstone of commercial networks after the Revolution.

In recent years, scholars have begun to recognize that kinship networks declined in importance after separation from Great Britain. Colleen Rafferty asserts that this trend began in the years just preceding revolution, stating, ""To meet his customers' needs and wants, Bell relied on a broader network of contacts that extended beyond familial relations and across

[31] Cutterham, "The Revolutionary Transformation of American Merchant Networks," 2-3; Raffterty, "To Establish an Intercourse Between Our Respective Houses," 132-133.
[32] Purcell, *Thomas Fitzsimons*, 54; Donald G. Tailby, "Chapters from the Business Career of William Constable: A Merchant of Post-Revolutionary New York" (Ph.D Dissertation, Rutgers, The State University, 1961), 15-16.
[33] Charles Wharton to Samuel Meredith, date unreadable, Box 10, Folder 36, Clymer-Meredith-Read Papers, New York Public Library.

geopolitical boundaries."[34] Carolyn Downs, Sherylynne Haggerty, and Robin Pearson and David Richardson have even suggested that family-based networks diminished in Britain during the Revolutionary era, positing that the decline of kinship ties coincided with the rise of advanced industrialism.[35] "By the end of the eighteenth century, commercial networks and communications had advanced to an extent that reliance upon familial or religious connections was no longer the norm," Haggerty writes. "There were many factors behind the choice of a business partner: risk-spreading, complementarity of skills or knowledge, reduction of costs, availability of capital, or simply the ability to get along with one another."[36] The American Revolution did not cause this change in the way advanced commercial networks evolved. However, it did accelerate the integration of markets, expansion of trade lines, development of credit markets, and sophistication of firm structure that drove movement away from reliance of kinship and religious networks.

As war and economic crisis shattered the kinship network-based paradigm in the new United States, Revolution-based social organizations such as the Ancient Masonic Lodge, the Friendly Sons of St. Patrick, and St. Andrews Society incubated trust and solidarity in the post-Revolutionary world. As shown below, Revolution-based commercial and social organizations did not necessarily remain the basis of commercial networks throughout the 1790s in 1800s. They did, however, provide critical structure to a volatile commercial landscape and facilitated the entrance of entrepreneurial talent into the American commercial ecosystem.

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[34] Raffterty, "To Establish an Intercourse Between Our Respective Houses," 134-135.
[35] Downs, "Networks, Trust, and Risk Mitigation during the American Revolutionary War," 514; Haggerty, *'Merely for Money'?*," 236; Robin Pearson and David Richardson, "Business Networking in the Industrial Revolution," *The Economic History Review* 54, no. 4 (Nov., 2001), 673.
[36] Haggerty, *'Merely for Money'?*," 169-170.

While social organizations played a prominent role in colonial society, Americans flocked to these groups during and immediately after the Revolution. While groups like the Freemasons and Chambers of Commerce existed before independence from Great Britain, the Revolution itself profoundly reshaped their structure, purpose, and membership. A mid-eighteenth-century schism in American freemasonry saw the new "Ancient" Lodges separate from the older and more aristocratic "Modern" Lodges that dominated colonial membership. While masonic history remains complex and entangled, the new, more "democratic" Ancients embraced the Revolutionary spirit and thus dominated Freemasonry in the new Republic.[37] Ancient lodges especially attracted political patriots and members of the Continental Army.

Freemasonry's unique balance of inclusiveness and exclusivity provided fertile ground for commercial network building. In *Revolutionary Brotherhood: Freemasonry and the Transformation of the American Social Order, 1730-1840*, Steven C. Bullock argues that, "Masonry offered brothers charity, economic aid, and even political advantage. Post-Revolutionary Masons increasingly emphasized their obligation to support their brothers, not only providing for them and their families in times of distress but also giving them preferential treatment in commerce, employment, and voting."[38] As a result, freemasonry's national—and even international—scope "helped ease the difficulties of broader trade," while its "exclusive inclusivity" reinforced and even encouraged commercial network building. Mandatory acceptance of masonic codes provided a baseline of trust in the midst of economic turbulence, similar to the Quaker bonds that Nuala Zahedieh argues proved so important to London-based transatlantic commerce in the early eighteenth century.[39] Masonry drew membership from

[37] Steven C. Bullock, *Revolutionary Brotherhood: Freemasonry and the Transformation of the American Social Order, 1730-1840* (Chapel Hill: The University of North Carolina Press, 1996), 82–110.
[38] Ibid., 188-199.
[39] Zahedieh, *The Capital and the Colonies*, 86-127.

diverse geographic backgrounds, religious groups, and social ranks, making it an even better network incubator than Quakerism or military service. "Masonry's expanded post-Revolutionary reach," Bullock notes, "allowed brothers opportunities for creating and maintaining economic relationships that, in their scramble for survival and success, they could hardly afford to ignore."[40]

Chambers of Commerce experienced a similar, uniquely-American shift during and after the Revolution. The New York Chamber of Commerce remained pro-British during the lead-up to the Revolution and, after a suspension of activity with the advent of hostilities, from July 1779, until the British evacuation of the city in November 1783. The following April 20, 1784, the Chamber of Commerce re-formed under a new and distinctly patriotic charter. After asserting that the wartime Chamber had "been manifestly directed to aid the British in subjugating these States," the new Chamber announced its mission to promote fruitful commerce across the State of New York and broader American nation.[41] Philadelphia's pro-British colonial equivalent, the Pennsylvania Board of Trade, disbanded permanently after the war, only to be replaced by a pro-Federalist Chamber of Commerce headed by Thomas Fitzsimons. Boston's Chamber of Commerce, whose famous "Tea Party" became the most renowned of its Revolutionary exploits, had long been a patriot enclave. By the adoption of the Constitution in 1789, patriotic business organizations stood ready to promote the reconstruction of commercial networks across the United States.

Naturally, organizations with direct links to the Revolution proliferated rapidly beginning in the 1770s. Ethnic benevolent societies such as the Friendly Sons of St. Patrick, the St.

[40] Bullock, "The Revolutionary Transformation of American Freemasonry, 1752-1792," 218.
[41] New York Chamber of Commerce Charter, April 20, 1784, Vol. 2, "New York Chamber of Commerce and Industry Records, 1768-1984," Rare Book and Manuscript Library, Columbia University.

Andrews Society, and St. George Society took root in major cities to benefit Irish, Scottish, and English immigrants. However, as the Revolution approached these groups became patriotic organizations. The Friendly Sons of St. Patrick not only counted prominent patriots such as Robert Morris, Blair McClenachan, David Conyngham, and even George Washington—not to mention Thomas Fitzsimons and William Constable—amongst its leadership, but the group ejected numerous loyalists in the years immediately preceding the Revolution.[42] With the advent of war in 1775, the group commenced at least two subscriptions for the relief of Boston and repeatedly financed privateers. More importantly, the Friendly Sons forged a founding connection with the First Troop Philadelphia City Cavalry, in which members like Levi Hollingsworth, McClenachan, Walter Stewart, John Cadwallader, and many others served under Washington's command at Long Island, Trenton, Princeton, and numerous other battles.[43]

The Friendly Sons of St. Patrick also played a critical role in Revolutionary and post-war business and finance. Twenty-seven Friendly Sons provided a large percentage of the capital of the Bank of Pennsylvania—later the Bank of North America (BNA)—which funded Continental Army procurement after the collapse of the Continental dollar in 1780. As a result, Friendly Sons comprised close to half of BNA Directors at any one time throughout the 1780s and early 1790s. The group also took an active role in promoting the business interests of its members. Members gave each other preferential consideration as they underwrote shipping voyages, cosigned on insurance policies, and financed new ventures. In fact, business historian Donald G. Tailby

[42] Samuel Hood, *A Brief Account of the Society of the Friendly Sons of St. Patrick; with Biographical Notices of Some of the Members, and Extracts from the Minutes* (Philadelphia: By order of the Hibernian Society, 1974), 34–35.
[43] Ibid., 47–48.

wrote, "a young merchant…could scarcely ask a better environment in America in 1782 than that provided by [the Friendly Sons of St. Patrick] at Philadelphia."[44]

William Constable, Thomas Fitzsimons, and Levi Hollingsworth all benefitted greatly from their associations with Revolutionary social groups. Hollingsworth's place in a successful and well-connected merchant family meant that he needed new social connections less than Fitzsimons or Constable. Nonetheless, the contacts Hollingsworth made as the Quartermaster of the First Troop Philadelphia City Cavalry became some of his most faithful clients and suppliers after the Revolution. Fitzsimons's business prospects also benefitted greatly from his involvement with the Friendly Sons of St. Patrick, the BNA, and numerous veterans' groups.[45] Not only did Fitzsimons's post-Independence commercial network expand dramatically thanks to his Revolutionary contacts, but he also used these contacts to anchor a successful, if short, stint in the House of Representatives.

As the character with the fewest pre-war connections, William Constable embraced Revolutionary social organizations with a particular enthusiasm. Constable belonged to both the New York and Philadelphia chapters of the Friendly Sons of St. Patrick, the Bank of New York board, the Society of the Cincinnati, and the New York Chamber of Commerce, amongst others. As a member of these organizations, Constable built commercial relations with Fitzsimons, merchant-financier Nicholas Low, future Treasurer of the United States Samuel Meredith, and the legendary Robert Morris. In fact, Constable formed his especially close commercial relationship with Morris in 1781, the same year that Morris joined the Friendly Sons of St. Patrick. Even more than Hollingsworth or Fitzsimons, Constable used the bonds inherent in

[44] Tailby, "Chapters from the Business Career of William Constable," 79–80.
[45] Fitzsimons organized and commanded a company of militia under Colonel John Cadwalader and Lt. Colonel John Nixon, both of whom were also Friends Sons of St. Patrick and directors of the BNA.

Revolutionary social organizations to raise and deploy capital, while building a vast commercial network that demonstrated the ebb and flow of Early American economic development.

Networks from Necessity

Historians' bias toward kinship and religious networks comes from the nature of the evidence available to them. Personal letters and family papers remain the dominant source for early American network analysis as comprehensive commercial statistics remain difficult to reconstruct. As a result, the absence of official quantitative data has prevented large-scale analysis of multi-subject commercial networks. Tom Cutterham's "The Revolutionary Transformation of American Merchant Networks: Carter and Wadsworth and Their World, 1775–1800," embodies the bias toward the qualitative. The Jeremiah Wadsworth papers from which Cutterham worked remain largely intact and open for analysis by scholars.[46] However, systematic biases emerge when historians tacitly assume that merchants' letter collections represent their broader commercial network. They do not. Most eighteenth-century merchants corresponded with family and religious comrades more frequently than the distant commercial partners that tied their networks together. On the contrary, the conversion of William Constable's ledger books into nearly 20,000 binary commercial relationships provides the baseline quantitative data to analyze commercial network formation between 1786 and 1802.[47] By evaluating Constable's network in totem, scholars can track how early American commercial networks—or at least that of William Constable and those in his orbit—responded to shocks, adjusted to macroeconomic change, and evolved over time.

[46] Jeremiah Wadsworth Papers, Connecticut Historical Society, Hartford Connecticut.
[47] For details on the creation of this dataset and its analytical methodology, see footnote 6.

William Constable's investment in Revolution-based social contacts (RBSCs) arose from the structural obstacles posed by independence, war, and depression. The Revolution fractured the colonial mercantile community. Yet that same Revolution provided young entrepreneurial talent the opportunities and social resources that became even more important in the post-Revolutionary era of scarce capital and segmented markets. While the importance of RBSCs faded as American commercial networks became self-sustaining in the mid-1790s, their role in the resurrection of the postwar American economy cannot be overstated.

Table 4.1: Commercial Connectivity, RBSCs vs. Non-RBSC, by Period

RBSCs (102)		Period total value (in £)	% of Total Value (1786-1802)	% of Total Value (by Period)	# of Transactions	% of Trans. (1786-1802)	% of total Transactions	Average Transaction	Median
	1786-1787	223,228	26.03%		949	66.22%		235.22	55
				30.02%			32.85%		
	1791-1796	251,022	29.28%		338	23.59%		740.48	149
				10.08%			11.31%		
	1797-1802	383,188	44.69%		146	10.19%		2606.72	1657
				7.23%			6.86%		
	total	857,438			1433				
Non-RBSCs (720)		Period total value (in £)	% of Total Value (1786-1802)	% of Total Value (by Period)	# of Transactions	% of Trans. (1786-1802)	% of total Transactions	Average Transaction	Median
	1786-1787	520,430	6.78%		1940	29.52%		268.12	41
				69.98%			67.15%		
	1791-1796	2,238,610	29.16%		2651	40.34%		844.12	78
				89.92%			88.69%		
	1797-1802	4,918,388	64.06%		1981	30.14%		2481.53	500
				92.77%			93.14%		
	total	7,677,428			6572				
	1786-1787	743,658			2889				
	1791-1796	2,489,632			2989				
	1797-1802	5,301,576			2127				
822	**TOTAL**	8,534,866			8005				
RBSCs	12%	10%			18%				
Non-RBSCs	88%	90%			82%				

Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, MssCol 646, Constable-Pierrepont Papers, 1762-1911, Vol. 6, New York Public Library and William Constable & Company Ledgerbook, 1791-1802, MssCol 646, Constable-Pierrepont Papers, 1762-1911, Vol. 42, New York Public Library.

Perhaps better than any other, William Constable employed RBSCs to attract social and financial capital and build his commercial network in the wake of the American Revolution. By compiling rosters of post-Revolutionary social organizations and comparing them to the ledger book-derived database of network contacts described above, this section analyzes the contribution of RBSCs to the growth and development of Constable's network. Put simply,

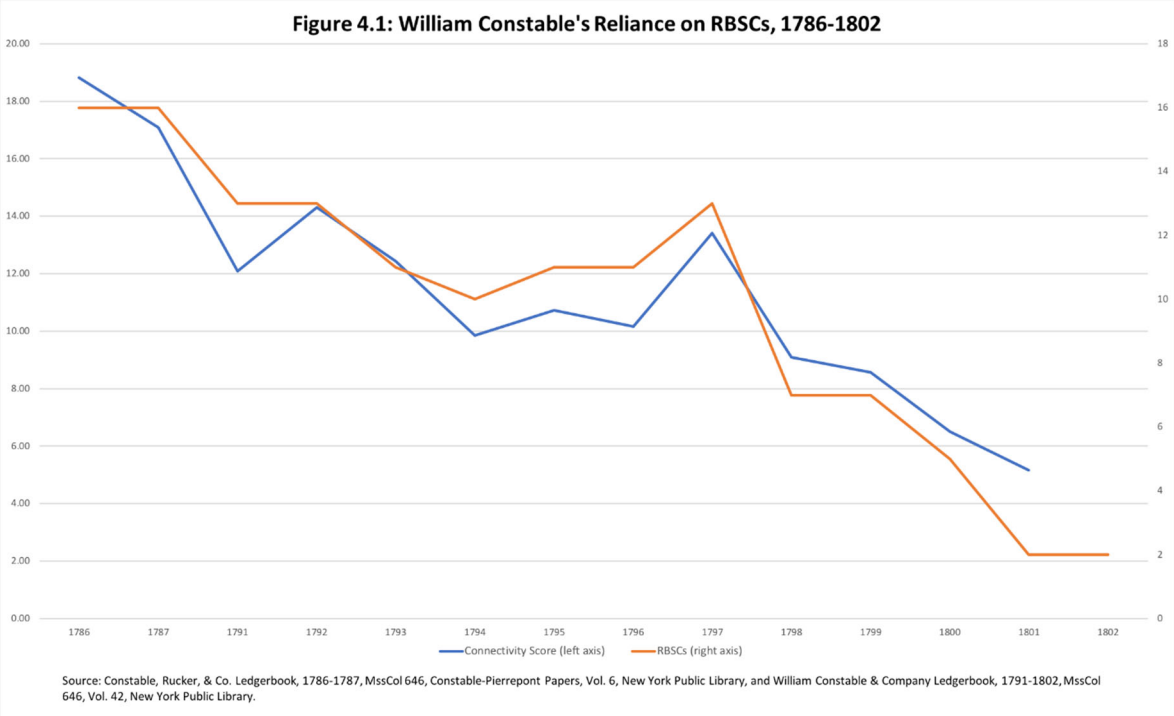
Revolution-linked contacts drove network creation in the postwar Depression years, before receding as Constable's network became more mature and complex. By comparison, kinship ties remained largely constant throughout the period and contributed much more to Constable's business structure than his network building. In short, during the volatile postwar years, the Revolution, not kinship, became Constable's primary source of social capital.

As Constable built his network in the years following the Revolution, RBSCs contributed to Constable's business at a scale far greater than their share of his total commercial network. After extensive review, 102 identifiable commercial actors shared both RBSC and direct commercial connections with Constable.[48] As shown in Table 4.1, RBSCs as a group comprised only 12 percent of Constable's total commercial contacts and 10 percent of total connection value between 1786 and 1802.[49] However, in the earliest years for which data is available (1786-1787) RBSCs represent nearly one-third, or 30.02 percent, of total connection value and 32.85 percent of total transactions. Simply put, RBSCs punched far above their weight in the mid- and late-1780s, contributing much more to Constable's commercial development than their relatively small percentage of the whole would suggest.

[48] The selection of the 102 commercial actors with which constable shared Revolution based social connections arose from a cross-reference of all account holders in William Constables ledger books between 1786 and 1802, and a roster of 11 organizations with which Constable had documented links. These organizations included the Friendly Sons of St. Patrick in New York and Philadelphia, the St. Andrew Society of New York and Philadelphia, the New York Chamber of Commerce, the Bank of North America, the Bank of New York, the Philadelphia Society for the Promotion of Agriculture, the Ancient Masonic Lodge of New York State and the commonwealth of Pennsylvania, and several others. All of these organizations had to clear links to the Revolution, elaboration on which can be found in the texts cited above. It is important to note that Constable likely shared Revolution-based social connections with many more of his documented commercial contacts. However, this study only includes documented members of organizations whose records have been preserved. Nonetheless, this sample gives a relevant, if imperfect, look at the interplay between social connection and the establishment of commercial networks.

[49] Connection value is the total monetary value of transactions executed by a specific individual or group. In this particular case, RBSCs executed transactions worth a total of £223,228 during the years 1786-1787. Non-RBSCs executed transactions worth £520,430 during the same period, coming to a total of £743,658. As discussed on pages 26-28, the nature of this ledger book-based methodology that considers commercial transactions as commercial relationships, transaction values and connection values are often used synonymously. This is not the same as Weighted Degree, discussed in footnote 51. Weighted degree is used to evaluate connectivity within network reconstructions, whereas the value describes above specifically relates to monetary values in commercial transactions.

Yet as Constable's network evolved and developed, RBSCs as a group became significantly less important. By the end of 1796, RBSCs' share of total connections and connection value regressed to their approximate share of the whole (11.31 and 10.08 percent respectively). The decline continued from 1797-1802 when, by 1802, RBSCs' share of total connections and connection value registered at roughly half of its share of the entire sample (6.86 and 7.23 percent). In sum, over the course of 15 years RBSCs share of productivity in Constable's commercial network, measured in either total connections or connection value, contracted by almost 80 percent.



Relatedly, while the values of connections by the average RBSC and non-RBSC followed similar growth trajectories, the median connection value for RBSCs registered much higher.[50] In other words, while commercial interactions between Constable and RBSCs diminished significantly over time, Constable retained a core group of RBSCs with which he executed high-

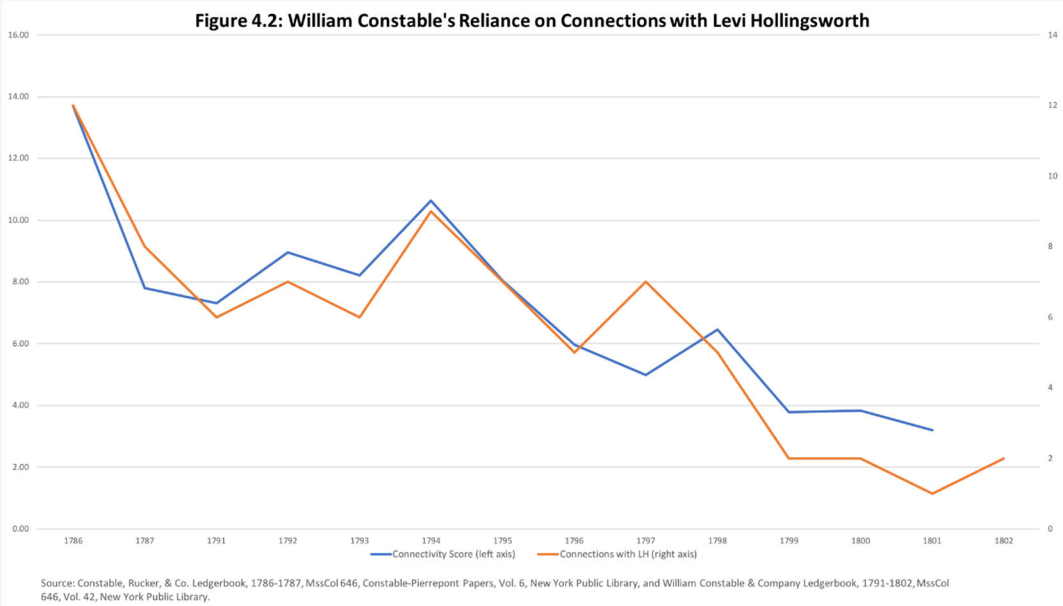
[50] 25% between 1786-1787, 48% in between 1791-1796, and 70% between 1797-1802.

value deals. Nevertheless, the data reveals a definite trend: RBSCs played an outsized role in Constable's commercial development in its early years. However, the impact of RBSCs waned throughout the 1790s and eventually dwindled to a small group of high-value clients.

Analysis of individual commercial actors reveals a similar decline in the importance of RBSCs to Constable's commercial network. In 1786, six of Constable's top 12 commercial contacts shared deep Revolution-based social bonds.[51] Similarly, in 1787 RBSCs represented six of Constable's top fifteen trading partners. During these two years, sixteen of Constable's top 100 trading partners held definite Revolution-based social links, with another 34 possessing likely, but not provable RBSC connections. In 1786 and 1787, RBSCs also registered all-time highs in statistics that measure and rank commercial connectivity (see Figure 4.1).[52] However, analysis suggests that the importance of individual RBSCs declined as Constable's network entered the 1790s.[53] While RBSC connections spiked in 1797, likely in response to a failed attempt to supply the French army in the Caribbean, Constable's number of commercial

[51] All determinants of value unless otherwise noted are in Weighted Degree. In network analysis models, the degree of each node simply refers to the number of edges, or connections to other nodes, attached to it. Weighted Degree accounts for not simply the number of connections but the weight of them. For example, a node with two edges with a weight of two for each edge would have a weighted degree of four. In other words, weighted degree is the some of the weights of all nodes' edges.
The weighting of connections in William Constable's ledger books is based on a base-ten logarithmic scale beginning at 1 and moving up to six. For example, all connections between .1 and 10 receive a weight of one. All connections between 11 and 100 receive a weight of two. Connections with a value between 101 and 1000 receive a weight of 3. While quantitatively imprecise, this aggregate method of weighting allows the scholar to group transactions into classes. Since this project looks at the consolidation of groups rather than precise accounting, base-ten logarithmic scale classification system provides structure and uniformity to a vast array of relational values.
[52] Developed for this chapter, the RBSC connectivity matrix score attempts to provide and additional metric to the importance of social connections in commercial network building. The matrix begins by listing William Constable's top 100 commercial contacts by weighted degree in descending order. The matrix then assigns a descending point of value to each commercial contact—the first ranked contact receives 100 points, the second ranked contacts receives 99 points, and so on, all the way down to the 100 ranked contact receiving one point. The matrix then establishes which, if any, contacts are RBSCs and calculates the sum of their point values. That some is then divided by the total possible points (5040). This is total is the RBSC connectivity matrix score, which can then be compared across every year for which Constable's ledgers provide sufficient data. In years that Constable had less than 100 counterparties, the sum of RBSC points is simply divided by the total number of possible points for that year.
[53] See Table 4.1 for greater detail.

connections with individual RBSCs steadily declined after 1791.[54] By 1801, only two RBSCs registered in Constable's top 100 commercial partners.



The drastic decline of RBSCs only underscores the importance of them in Constable's early years. As a novice merchant, Constable faced serious constraints on his commercial aspirations, including financial and social capital scarcity. Despite the fractured and depressed postwar merchant community, Constable found a willing stream of lenders, co-signers, commercial partners, and trading counterparties in the RBSCs that largely ignored his lack of reputation, credit, and experience. However, as Constable's network grew deeper and his business progressed, he no longer needed to rely on RBSCs. In some cases, important RBSCs naturally faded—Robert Morris entered bankruptcy and Thomas Fitzsimons left his merchant

[54] For more on Constable's 1796-1797 deal with George Cruden, see Lisa Sturm-Lind, *Actors of Globalization: New York Merchants in Global Trade, 1784-1812* (Boston: Brill Books, 2018), 92-97. In short, in the late Autumn of 1795 Constable, along with Phyn, Ellice, & Inglis, Jeremiah Wadsworth, and Joseph Howland, partnered with George Cruden to supply the expanding Royal Army presence in the Caribbean. In 1796, Cruden awarded Constable and his associates the entire contract. However, the escalating Quasi War with France and associated ship seizures by the French navy resulted in Constable pulling out of the deal with Cruden in early 1797. Nonetheless, Constable's commercial relationship with Cruden remained strong, and the two continued to buttress their commercial ties well into the early 1800s.

career to serve in Congress. However, Constable's movement away from RBSCs signaled a maturity and specialization in his business. He no longer needed to trade with anyone who would deal with him. In contrast, Constable's extensive ventures provided him with his own financial- and social-capital base, allowing his network to move away from the willing but odd-fitting RBSCs on which he relied during the Depression of the 1780s.

As William Constable's reliance on RBSCs declined, he began to value merchants that connected him with other large-scale commercial actors. A cross-reference of William Constable's commercial contacts with those of Levi Hollingsworth reveals a consistent reliance on mutual commercial connections throughout the 1790s.[55] While Constable's reliance on contacts shared with Hollingsworth declined over the period, it declined more gradually that his reliance on RBSCs. Common connections tended to hold a lower average value than Constable's average counterparty, but they carried high connectivity scores.[56] Connections shared with Hollingsworth also proved more dependable over time as they rarely place in Constable's top 15 trading partners but consistently appeared in his top 40.

The importance of shared contacts becomes more apparent when analysis weights outcome using connectivity metrics rather than average transaction value. As Constable's network contracted and business grew in the early 1790s, individuals with high betweenness

[55] The method for establishing shared commercial contacts with Levi Hollingsworth closely resembled the process for establishing Revolution-based social connections. I cross-referenced a comprehensive index of Levi Hollingsworth's commercial partners between 1782 and 1806 (gleaned from examination of Hollingsworth's ledger books volumes G, H, I, K, N, and T at the Historical Society of Pennsylvania) with my database of Constable's commercial contacts. The results yielded 52 commercial actors with a connection weight of 2 or higher.

[56] High-connectivity individuals became vital to William Constable's commercial strategy in the 1790s. While not universal, connections that constable shared with we have with Levi Hollingsworth tended to have high betweenness centrality and clustering coefficient scores. Between centrality measures the number of shortest pass on which a node sits and often is the best indicator of brokerage connectivity. Clustering coefficient measures how many of a node's contacts are connected with each other and low clustering coefficient scores also indicate brokerage activity. For the best basic discussion of these metrics, see John Haggerty and Sheryllyne Haggerty, "Visual Analytics for large-scale actor networks: A case study of Liverpool, 1750-1810," in Mark Casson and Nigar Hashimzade, eds., *Large Databases in Economic History: Research methods and case studies* (New York: Rutledge, 2017), 146-164.

centrality[57] and other connectivity metrics like Isaac Hazlehurst, Thomas Russell, Robert Lewis, and later Michael Morgan O'Brien and Samuel Reynolds became increasingly important. These high-connectivity contacts also remained in Constable's network at a disproportional rate even as the network shrank. Simply put, while Constable needed the high-value capital providers (RBSCs) early in his career, he later came to value commercial actors that sat at the nexus of large commercial networks. In sum, as the American economy became more integrated and less capital scarce, Constable prioritized connectors to capital providers.

Building a Network

The tools of network analysis provide an excellent framework with which to analyze the structural evolution of William Constable's commercial network from 1786 to 1802. Network graphs serve as the primary canvas for any network analysis, with "nodes" and "edges" as the component pieces. Node simply refers to any independent commercial agent in the network, such as an individual, firm, or government entity. An edge is a connection between two nodes.[58] To better understand the strength of the connection between two nodes, edges can be weighted by values such as a monetary unit or geographic distance. Thus, the standard network graph not only displays static connections between nodes, but it can calculate and analyze the strength of the bonds between them.[59] Network analysis allows historians to understand the connections between individuals and groups and the way those interactions changed over time.

[57] Betweenness centrality is a connectivity statistic that measures the number of shortest paths between two commercial partners on which an individual, or node, sits in a given network. In effect, it measures the brokerage capacity of a network participant.
[58] For this analysis, mapped edges are averaged edges, meaning that they are the mean edge for a group of connections between two notes. In other words, many nodes in William Constable's network connected many times over any period of time. When mapped, these edges are average together to produce one average connection for that period of time under consideration.
[59] A network graph is a visual representation of a network defined by distinct network properties, including temporal and geospatial parameters.

Table 4.2: William Constable's Commerical Connections, 1786-1802

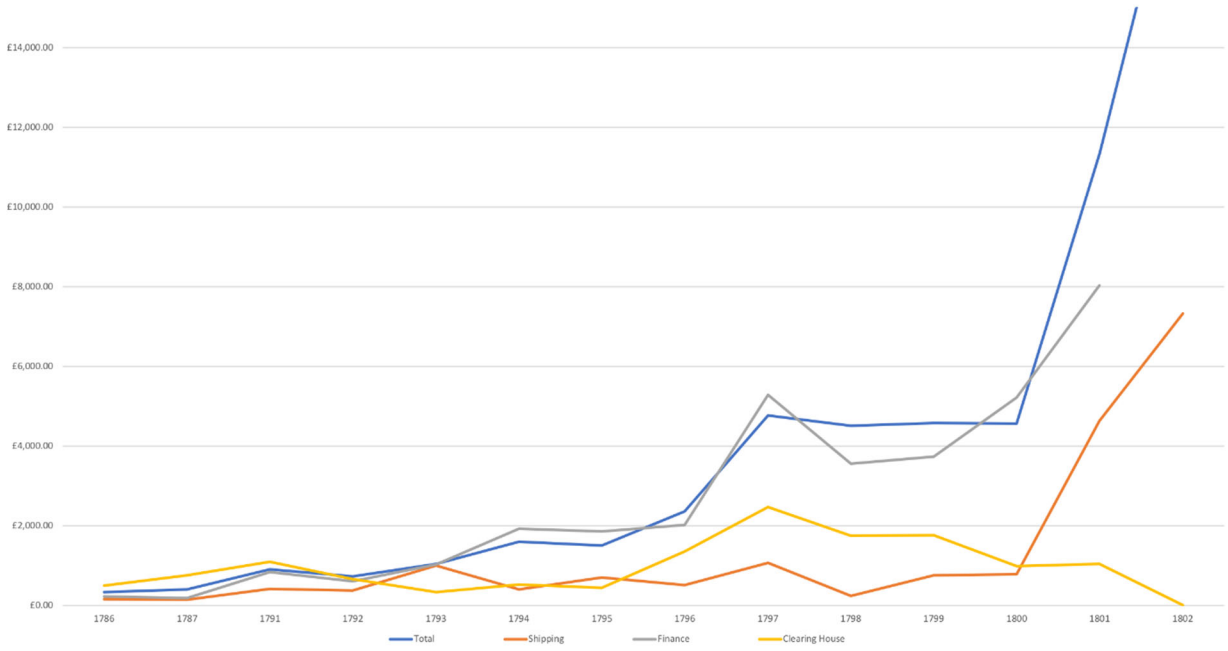
	Total Commerical Connections	Value of Connections	Average Connection Value	Independent Counter Parties	Median Connection Value
1786	2264	753,290	332.87	446	41
1787	2212	884,181	399.90	518	47
1791	619	566,289	916.33	107	96.5
1792	1225	902,011	736.94	197	58
1793	858	900,525	1050.79	168	50
1794	692	1,105,449	1599.78	121	75
1795	686	1,033,874	1509.31	122	62
1796	1044	2,462,769	2361.24	155	280
1797	799	3,804,449	4767.48	118	720
1798	672	3,030,042	4515.71	94	600
1799	934	4,274,691	4581.66	130	563
1800	713	3,256,133	4573.22	108	380
1801	224	2,527,512	11334.13	52	400
1802	58	1,118,137	19616.44	25	579

Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, Constable-Pierrepont Papers, 1762-1911, Vol. 6, New York Public Library and William Constable & Company Ledgerbook, 1791-1802, Constable-Pierrepont Papers, 1762-1911, Vol. 42, New York Public Library.

After establishing basic connections (edges) between individual nodes, a wide array of analytical metrics can reveal structural changes to a given network and the various roles of individual nodes or groups of nodes within that network. Centrality measures describe various elements of a node's importance. "Betweenness centrality" indicates brokerage capacity, the ability to control and connect to other nodes. Conversely, "closeness centrality" indicates the average proximity of one node to any other, indicating their ability to be involved in clusters or sub-networks. Actors with high centrality scores "are influential in that they act as a chokepoint of information in a network due to their relative network position and their ability to facilitate communications and contacts."[60] In addition to centrality metrics, "cluster coefficients" measure how many of a given nodes' contacts are connected with each other. A broker or connector node often has a low clustering coefficient since they have a wide range of connections from diverse groups. When combined with a high betweenness centrality, a node with a low clustering coefficient has the greatest capacity to unite disparate groups and individuals.

[60] Haggerty and Haggerty, "Visual Analytics for large-scale actor networks," 148-151.

Figure 4.3: Average Transaction Value by Sector, 1786-1802



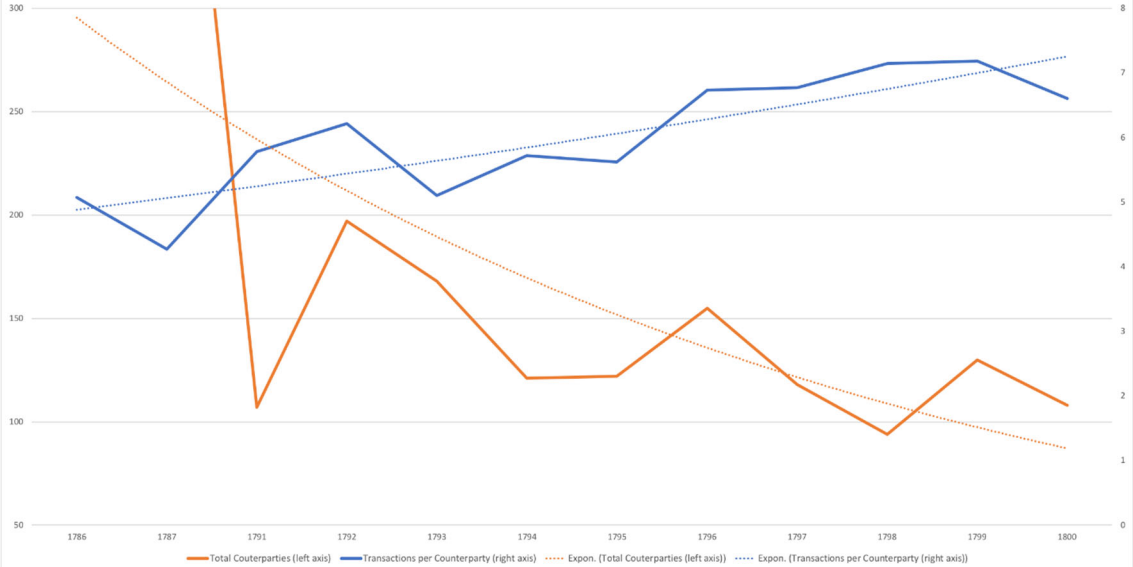
Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, MssCol 646, Constable-Pierrepont Papers, Vol. 6, New York Public Library, and William Constable & Company Ledgerbook, 1791-1802, MssCol 646, Vol. 42, New York Public Library.

When analyzing the network as a whole, several basic metrics reveal much about a graph's character. The "average path length" measures how easily one node can connect to any other node in the network. Lower average path lengths indicate a more efficient network in which information travels quickly from node to node. "Graph density" refers to the connectedness of a whole network.[61] Not only do dense networks facilitate the smoother passage of ideas, information, and capital, but they also provide stability to the network and thus mitigate risk. Dense and efficient networks do not necessarily exclude clusters; in fact, clusters often foster specialization and dynamic efficiencies. Rather, the efficiency of a network comes down to the way those clusters work together. Heavily clustered networks operate most efficiently when a high number of brokers connect those clusters to each other at many different points. Clustered networks often come under stress when a small number of brokers become choke

[61] For a more detailed discussion of graph density, see Appendix 1.

points without which the clusters cannot communicate with each other. A high number of connective brokers provide redundancy should an important connector leave the group or lose their effectiveness. In sum, effective networks become increasingly dense and efficient through the presence of a large number of connective individuals that tie clusters together.

Figure 4.4: Average Transactions per Counterparty, 1786-1802

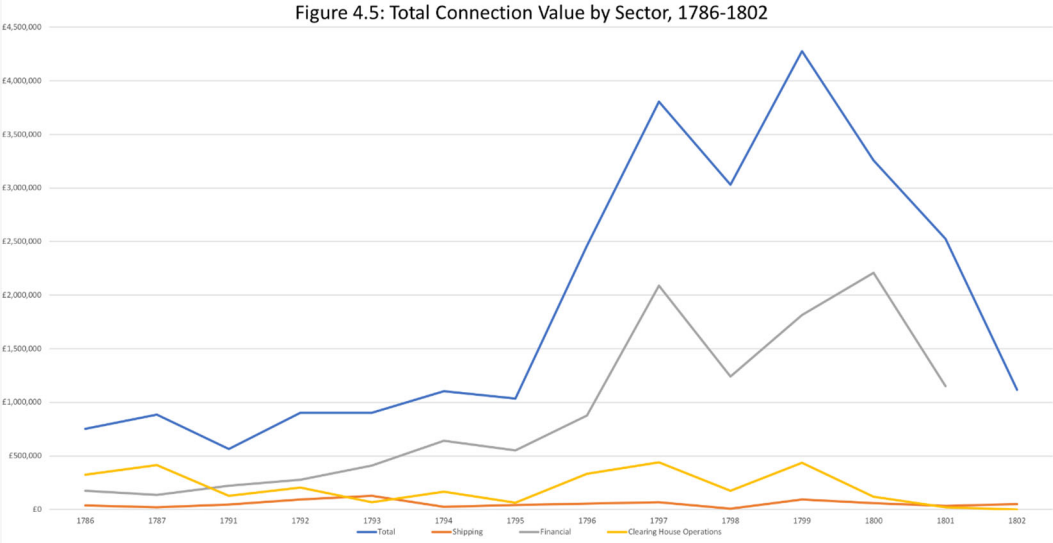


Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, MssCol 646, Constable-Pierrepont Papers, Vol. 6, New York Public Library, and William Constable & Company Ledgerbook, 1791-1802, MssCol 646, Vol. 42, New York Public Library.

Just as Constable's reliance on RBSCs and connections with other high-value traders like Levi Hollingsworth diminished over time, the scope and depth of Constable's larger network changed significantly between 1786 and 1802. As Constable built his network from scratch during the mid-1780s, he traded with almost anyone he could. As a result, his network contained its most members in its earliest years (see Table 4.2). In 1787, Constable's network size nearly doubled that of any year during the 1790s, reaching 518 independent counterparties. Despite a uniquely quiet year in 1791 and spikes in 1796 and 1799, the size of Constable's network trended downward during the 1790s, both in terms of total commercial connections and number of counterparties. However, while the network contracted in scope, it increased in value. The average connection value showed a dramatic increase, rising almost 600 percent between 1786

and 1802, from 332.87 to 19616.44. This upward trajectory proved irregular, with the average connection value stagnating in the late 1790s before rocketing upward in 1800 (see Figure 4.3). Nonetheless, while the average connection value amongst the entire network moved erratically, the average connection value per counterparty showed a definite upward trend (see Figure 4.4) even as the number of counterparties declined steadily over time. Put simply, Constable's network contracted over the 1790s while the average connection became more valuable.

Figure 4.5: Total Connection Value by Sector, 1786-1802

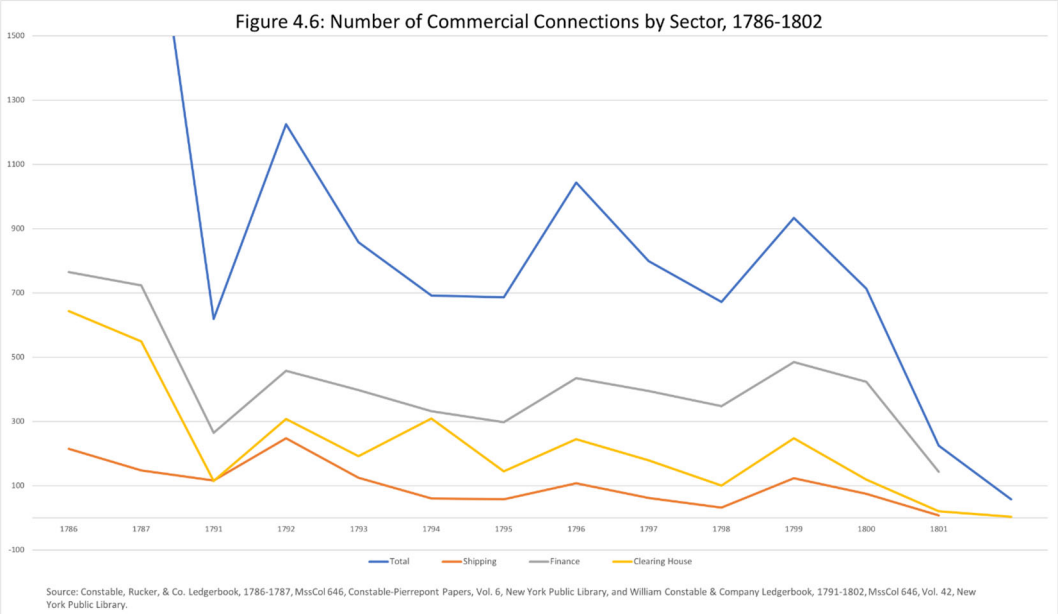


Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, MssCol 646, Constable-Pierrepont Papers, Vol. 6, New York Public Library, and William Constable & Company Ledgerbook, 1791-1802, MssCol 646, Vol. 42, New York Public Library.

At the same time, Constable's network changed significantly in complexion. As demonstrated in Figure 4.5, between 1786 and 1792 Constable's network retained a relative balance between shipping contacts, financial counterparties, and clearing house functionaries.[62] However, after 1792 the value of clearing house connections declined, as did those of shipping. By contrast, the value of financial connections grew significantly, even as the number of

[62] The author sorted all of Constable's transactions manually, dividing them into shipping, financial, and clearing house functions. Shipping connections include all entries including ships (or the owners of ships) like the Empress of China, Sloop Eliza, or the Brig Quebec, individuals with prefixs "Capt." or "Captain," all noted "adventures" or "voyage," noted "cargos" of sundry ships, "goods" from specific destinations such as "India" or "Ireland," and all miscellaneous "sales" of cargo from specific vessels. Financial connections include all those including "cash," "stock," "petty cash," banks including BONY, BUS, and BNA, loans, "interest accounts," equity in banks or other merchant firms, and "insurance." Clearing House operations include all connections that pass through William Constable but include two individual and distinct counterparties.

connections remained relatively constant (see Figure 4.6). Figure 4.7 shows this trend in greater detail, underscoring the degree to which financial connections became an increasingly valuable part of William Constable's commercial network after 1793. While shipping contacts remained an important part of Constable's network throughout most of his career, his role as a financier, unofficial commercial banker, and stock broker played a far larger role as his network developed.

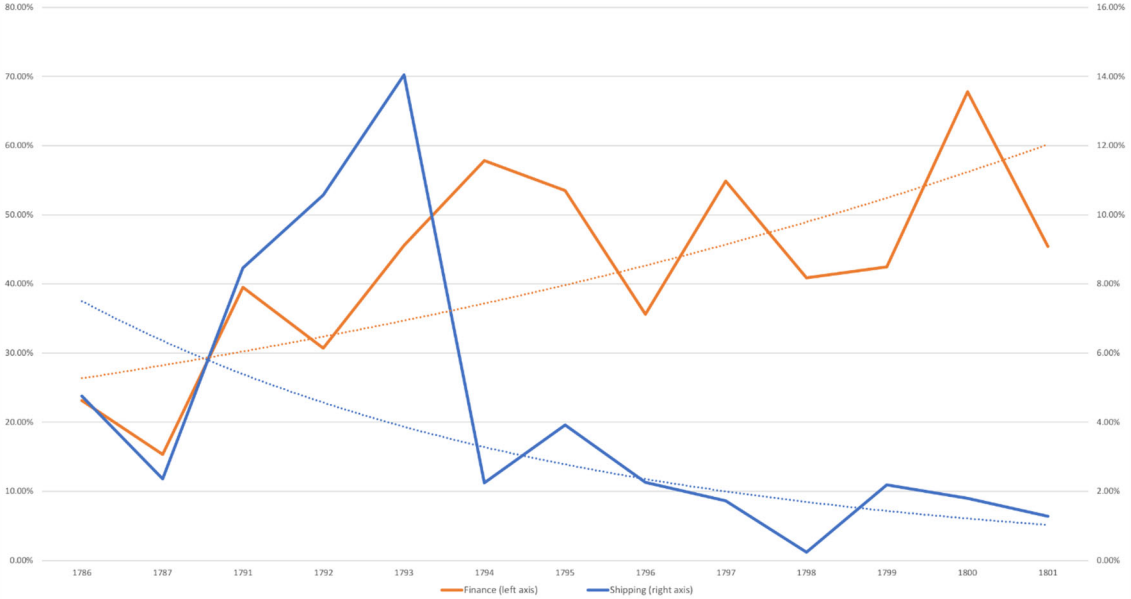


While historians of early America often focus on commercial voyaging, financial connections quickly became the dominant factor in Constable's network. Not only did financial contacts show the lowest volatility of any sector of his business, but they also contributed most to network density. Before 1796, most of Constable's financial connections revolved around cash provision and the delivery of relatively small-scale commercial credit. By the second half of the 1790s, Constable connected an increasingly dense group of contacts buying financial assets, including government debt, equities, and stock in his and other associated firms.[63] In other

[63] In network analytics, density provides one way of determining the extent of connectivity and integration in a network. According to Robert A. Hanneman and Mark Riddle, "Introduction to Social Network Methods," http://faculty.ucr.edu/~hanneman/nettext/C7_Connection.html#density, accessed February 17, 2018, "For a valued network, density is defined as the sum of the ties divided by the number of possible ties (i.e. the ratio of all tie strength that is actually present to the number of possible ties). The density of a network may give us insights into

words, financial networks, compared to shipping connections, became more efficient more quickly. As a result, those involved in financial networks could make more productive use of scarce resources and maximize the effect of connecting with other commercial players.

Figure 4.7: Connection Value as Percent of Total, 1786-1802



Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, MssCol 646, Constable-Pierrepont Papers, Vol. 6, New York Public Library, and William Constable & Company Ledgerbook, 1791-1802, MssCol 646, Vol. 42, New York Public Library.

The financialization of Constable's commercial network resulted in an increasing density of the network overall. As shown in Table 4.3, Constable's commercial contacts became increasingly connected with each other as the 1790s progressed. The regression analysis shown in Appendix I indicates a strong connection between network density and the average connection value, an attribute that increased with the financialization of Constable's network.[64] Put simply, Constable's network became denser as connections became more valuable. At the same time, the Average Weighted Degree, a metric that calculates the number of contacts each node possesses

such phenomena as the speed at which information diffuses among the nodes, and the extent to which actors have high levels of social capital and/or social constraint."

[64] To a minor but relevant extent, network density operated as a function of network size—in other words, the network became increasingly dense because the network included fewer contacts. However, the link between network density, of which there are multiple factors other than number of contacts, and transaction size holds a higher statistical correlation.

and weights that number by the value of its connections, also increased over time.[65] Constable's network became smaller, denser, and more valuable as he specialized his commercial operations, moving away from risky long-distance commercial activities and toward modern finance. In effect, Constable distilled his network over time, building a group of high-value clients from existing commercial contacts and new customers eager to benefit from Constable's connections in the financial world.

Table 4.3: Analytic Statistics, William Constable's Network, 1786-1802

	Average Degree	Ave. Weighted Degree	Diameter	Average Path length	Graph Density	Ave. Clustering Coefficient	Nodes	Edges
1786	2.114	4.457	7	2.64	0.005	0.109	438	926
1787	1.965	4.186	6	2.53	0.004	0.101	485	953
1791	2.459	5.981	4	2.32	0.025	0.464	98	241
1792	2.484	5.272	6	2.45	0.014	0.299	182	452
1793	2.253	3.84	5	2.44	0.015	0.268	150	338
1794	2.2	5.029	6	2.33	0.022	0.327	100	220
1795	2.248	5.141	6	2.54	0.021	0.247	109	245
1796	2.567	6.748	6	2.54	0.018	0.31	141	362
1797	2.362	7.21	6	2.62	0.023	0.246	105	248
1798	2.071	5.95	5	2.46	0.025	0.208	84	174
1799	2.308	6.715	6	2.54	0.02	0.28	117	270
1800	2.236	6.598	5	2.46	0.025	0.294	89	199
1801	1.895	5.818	4	2.40	0.051	0.37	38	72
1802	1.438	3	3	2.04	0.096	0.222	16	23

Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, Constable-Pierrepont Papers, 1762-1911, Vol. 6, New York Public Library and William Constable & Company Ledgerbook, 1791-1802, Constable-Pierrepont Papers, 1762-1911, Vol. 42, New York Public Library.

The Value of Connectors

While Constable's network exhibited several universal trends, it took on very different forms throughout its evolution. In its early years (1786-1787), Constable's network consisted of highly-segmented clusters, most of which connected with the broader group through a few, highly-influential individuals. Most early network participants held only a few trading partners, one of which was most likely Constable or his firm *Constable, Rucker, & Co*. However, as Constable's network developed over time, the network became increasingly integrated. In later years, not only did the clusters become more internally cohesive, but the separate clusters became more connected

[65] For more on Weighted Degree, see footnote 51.

with each other. While clusters did not disappear as Constable's network matured, those clusters came to feature more individuals that regularly traded with groups outside their own. In other words, Constable's network evolved from a disparate set of tightly-packed groups that cohered through a small cohort of highly-connected individuals, to a much more diffuse whole in which the average participant connected with more people, both in their own cluster and outside of it. Thus, the main change in William Constable's commercial network came from the degree to which individuals connected with others both within their own cluster and the network as a whole.

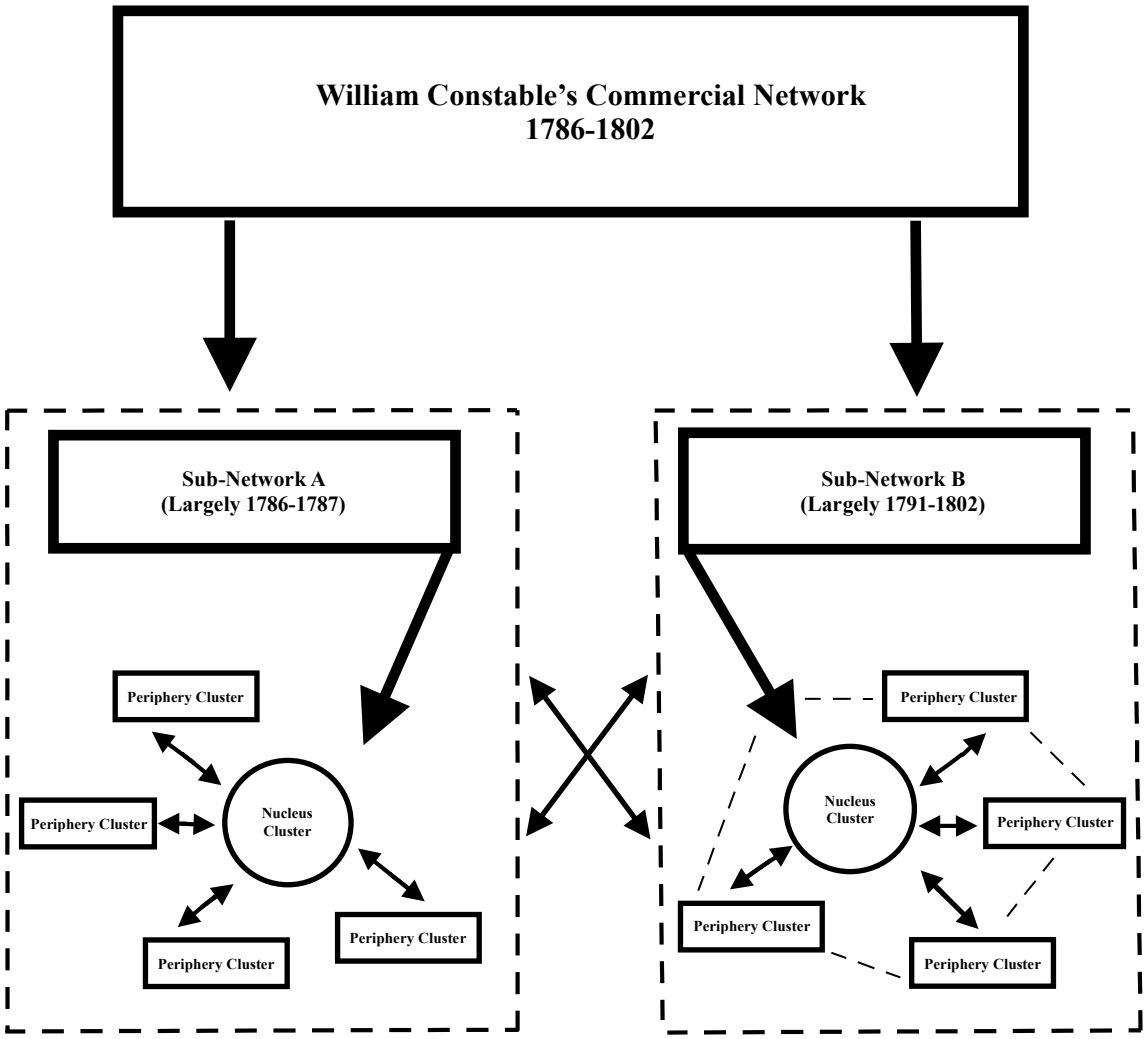
This section analyzes William Constable's network on a single temporal plane, meaning that every commercial actor from 1786 and 1802 appears on the data map without differentiation. Once plotted, Constable's network breaks down into smaller "neighborhoods" or "sub-networks" (see Figure 4.8).[66] In this case, Constable's network consists of two main sub-networks. Each sub-network revolves around a "nucleus cluster," a small group of network participants anchored by a central firm or individual.[67] Since sub-networks often organize by era, few market actors operate in multiple sub-networks. However, a core set of individuals or firms transcend sub-network

[66] The visualizations of William Constable's network in figures 11 through 19 are algorithmically-generated representations, *not* geographic depictions that represent terrestrial relationships. The depictions below employ the Force Atlas or Force Atlas 2 drawing algorithms in the Gephi 0.9.2 software pack. In essence, these algorithms assign a "gravitational" value to each node based on inherent characteristics such as its weight, in- and out-degree ratios, and its weighted degree values. Edges also receive attractive and repulsive powers based on the nodes to which they connect and the weight of the edge itself. As the algorithm operates, the gravitational forces of the nodes, constrained by the strength of weakness of its edges, for a distinct pattern. This pattern does not represent the geographic identities of the nodes, but rather a dynamic image of the nodes' relationships to each other given the specified variables. For more on Force Atlas and algorithmic drawing see Mathieu Jacomy, Tommaso Venturini, Sebastien Heymann, Mathieu Bastian, "ForceAtlas2, a Continuous Graph Layout Algorithm for Handy Network Visualization Designed for the Gephi Software," *PLoS ONE* 9, no. 6 (2014), https://doi.org/10.1371/journal.pone.0098679; Thomas M. Fruchterman and Edward M. Reingold, "Graph Drawing by Force-Directed Placement", *Software – Practice & Experience* 21, no. 11 (1991): 1129–1164; Giuseppe di Battista, Giuseppe, Peter Eades, Roberto Tamassia, and Ionnis G. Tollis, *Graph Drawing: Algorithms for the Visualization of Graphs* (New York: Prentice Hall, 1999).

[67] In more familiar geographic terms, the full network resembles a country or nation, and the sub-networks resemble regions like New England, the Mid-Atlantic, or Mountain West. In this analogy, core clusters resemble the regional metropole, like Boston, New York City, or Denver. All of these regional metropoles connect with each other, as well as the "peripheral clusters" (think Providence and Hartford, Philadelphia and Baltimore, and Albuquerque and Salt Lake City) that operate closely but independently from them.

boundaries, thus connecting the sub-networks and providing temporal stability as the network develops. Through data classifying and modularity modeling, scholars can unearth sub-networks and clusters that may have been hidden even from the original merchant.[68] Once scholars map the network's basic sub-networks and clusters, they can track the development of the network over time and determine how the barriers between these commercial "neighborhoods" evolved.

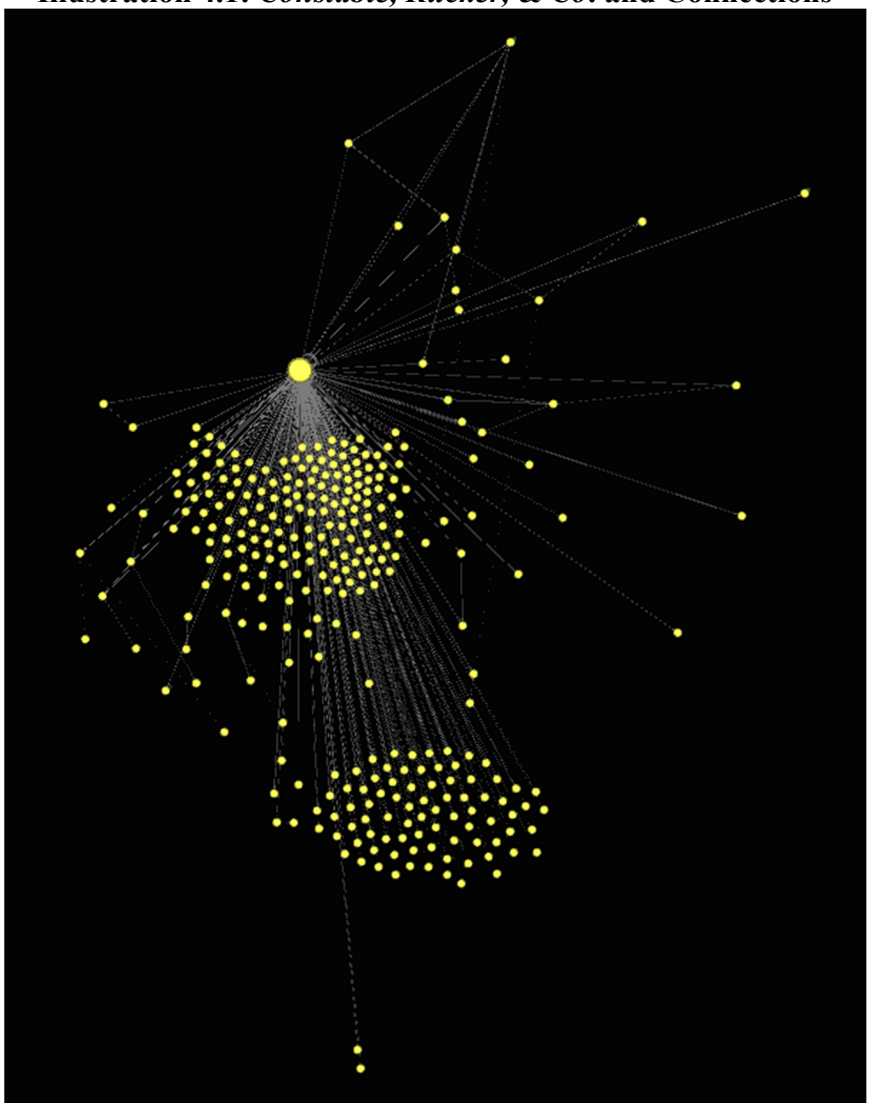
Figure 4.8: William Constable Network Structure



[68] Modularity functions use algorithmic sorting to identify the nodes that are more densely connected with each other than to the rest of the network. Gephi use the algorithm developed in Vincent D. Blondel, Jean-Loup Guillaume, Renaud Lambiotte, and Etienne Lefebvre, "Fast unfolding of communities in large networks," *Journal of Statistical Mechanics: Theory and Experiment* 10, (2008), 2-12 to identify and group various network clusters. When combined with manual sorting of data into identified sub-groups, modularity modeling plays a vital role in identifying sub-networks as part of the broader whole.

The cohesiveness of a network's component parts determines its effectiveness. Network efficiency comes as periphery clusters, and the individuals in them, begin trading with other periphery clusters. Even greater network effectiveness comes as sub-networks as a whole become more integrated with each other, thus making the entire network increasingly dense. As networks become more integrated, information can more easily flow and new trading parties can conduct business. As the following analysis shows, the size of the network mattered less than its density and connectivity. As Constable's commercial business evolved, he traded a large and diffuse network for an integrated system of specialized trading partners.

Illustration 4.1: *Constable, Rucker, & Co*. and Connections



The nucleus clusters that anchored Constable's sub-networks exemplified the binary-to-integrated structural evolution of Constable's broader network. Constable's 1786-1787 firm *Constable, Rucker, & Co*. anchored Constable's first nucleus cluster (represented in yellow, Illustration 4.1). This nucleus cluster contained just over 100 binary commercial connections, meaning that Constable's counterparties traded only with him and no other people or firms within the network. The second sub-network revolved around a nucleus cluster featuring *William Constable & Co.*, the firm under which Constable conducted business between 1791 and 1802 (see Illustration 4.5). A fundamental difference in connectivity separated Constable's two sub-networks, and thus the two major eras of his mercantile career. The nucleus of Constable's earlier sub-network remained highly concentrated while the later core sub-network featured much greater connectivity amongst its members. While Constable's network relied on binary commercial relationships early in his career, this mode of business diminished significantly by the early 1790s. By comparison, commercial partners with whom Constable traded in later years not only dealt directly with him but regularly traded with each other.

While Constable's network featured many more commercial connections in its earlier iteration, those connections operated in a more independent, less-integrated fashion.[69] As a result, Constable's earlier network relied on a small group of important "lynch pin" nodes that tied its periphery clusters into the broader whole. This structure stands in stark contrast to Constable's later sub-network, in which the average trading partner held approximately 4 connections within the group.[70] As a result, Constable's later network relied much less on a central firm—*William*

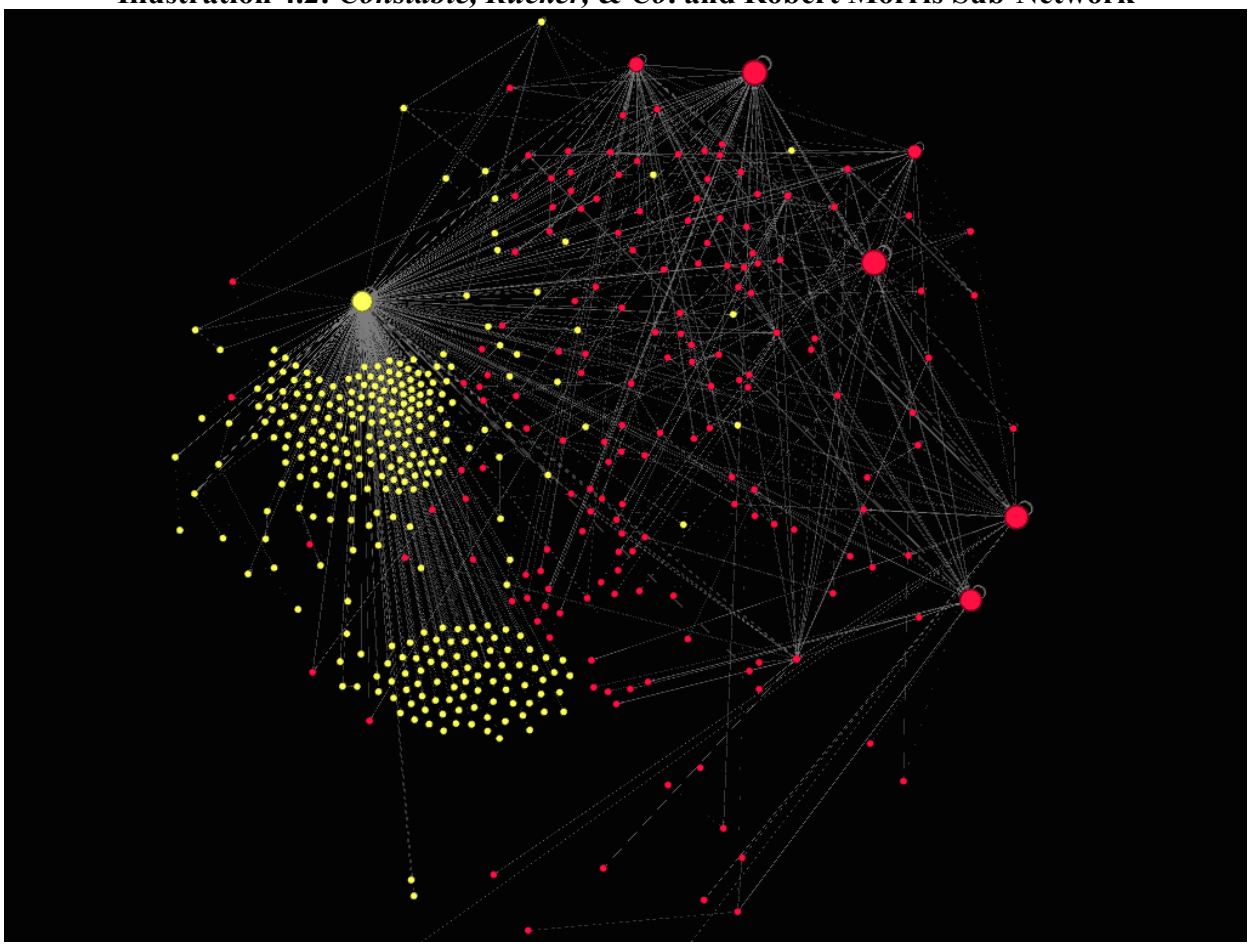
[69] Between 1786 and 1787, Constable's networks featured an average of 2238 contacts per year. Conversely, the network only contained an average of 769.63 connections per year between 1791 and 1801.
[70] Since the visualization is extra-temporal, a single individual can exist in both Networks 1 and 2. However, the data suggests that not only are new (Network 2) contacts more connected, but contacts from Network become more connected as time moves on.

Constable & Co.—to carry the structural load. To borrow an engineering analogy, the stability of Constable's early network relied on a few critical joints to support the weight and functionality of the whole, whereas its later iteration dispersed its weight more evenly on a broader network superstructure. In sum, as Constable first began building his network, he relied on individual connections which most likely arose from personal introductions or referrals. Constable's binary strategy allowed for faster growth, but it also produced significant bottlenecks. If a vital connector slowed down his business due to lost cargo, delinquent remittances, or illness or death, entire branches of Constable's network became shut off from the whole. In other words, Constable's early strategy omitted redundancies, which made the whole network susceptible to catastrophic failure if important individuals slowed their business or left the group entirely. In contrast, Constable's later network employed a more integrated structure that facilitated connectivity, the capability to expand or contract, and the ability to absorb shocks without the network fracturing. The integrated nature of Constable's later network made it more stable and efficient, which translated into consistently rising average contact values.

As Constable built commercial connections in the years immediately following the Revolution, he–perhaps unwittingly—employed a "hub and spoke" model that connected tightly-clustered groups through a few vital choke points. Constable did not expand connections through his more than 100 binary commercial relationships. Rather, he linked his nucleus cluster to separate, well-insulated periphery clusters like the one dominated by Robert Morris, Garrett Cottringer, Thomas Fitzsimons, William Edgar, Alexander Macomb, John Rucker, and Thomas Russell (see Illustration 4.2—red, and Illustration 4.3). Constable also built a connection between the nucleus and another periphery cluster dominated by the ship *Empress of China* (Illustration

4.4—pink) and the broader shipping industry.[71] One must note that these clusters are constructed analytical categories, not formal organizations the participants would have formally recognized. Nonetheless, the hub and spoke structure of Constable's early network is clear. Rather than integrating into an interconnected whole, Constable built a confederation of loosely-connected clusters linked by a small number of central individuals with high connectivity characteristics.

Illustration 4.2: *Constable, Rucker, & Co*. and Robert Morris Sub-Network



[71] On February 22, 1784 the *Empress of China* departed New York to become the first American ship to establish independent trade with China. Funded by many prominent early American merchants including Robert Morris, Daniel Parker, Thomas Russell, and many others, the *Empress of China* became a symbol of the new American trading presents around the world. The original voyage brought home a handsome profit 31 percent profit of approximately $37,000. Subsequent voyages were not so successful. Nonetheless, the *Empress of China* and other related wages brought together a wide range of American merchants interested in the long-range international trade. For more on the Empress of China, see Philip Foster Smith, *The Empress of China* (Philadelphia: Philadelphia Maritime Museum, 1984) and Jonathan M. Chu, "Reorienting American Trade: The Origins of the China Trade and the Development of a National Investment Community," Program in Early American Economy and Society and McNeil Center for Early American Studies Joint Seminar, November 30, 2007.

Illustration 4.3: Robert Morris Sub-Network in Detail

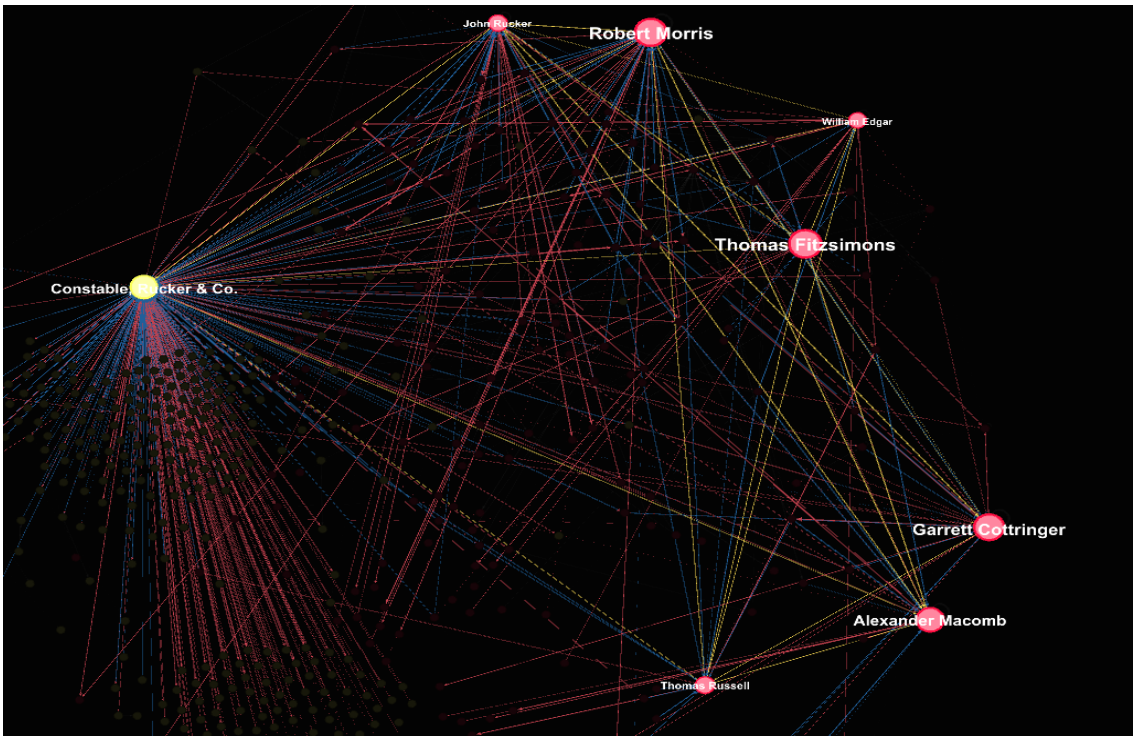
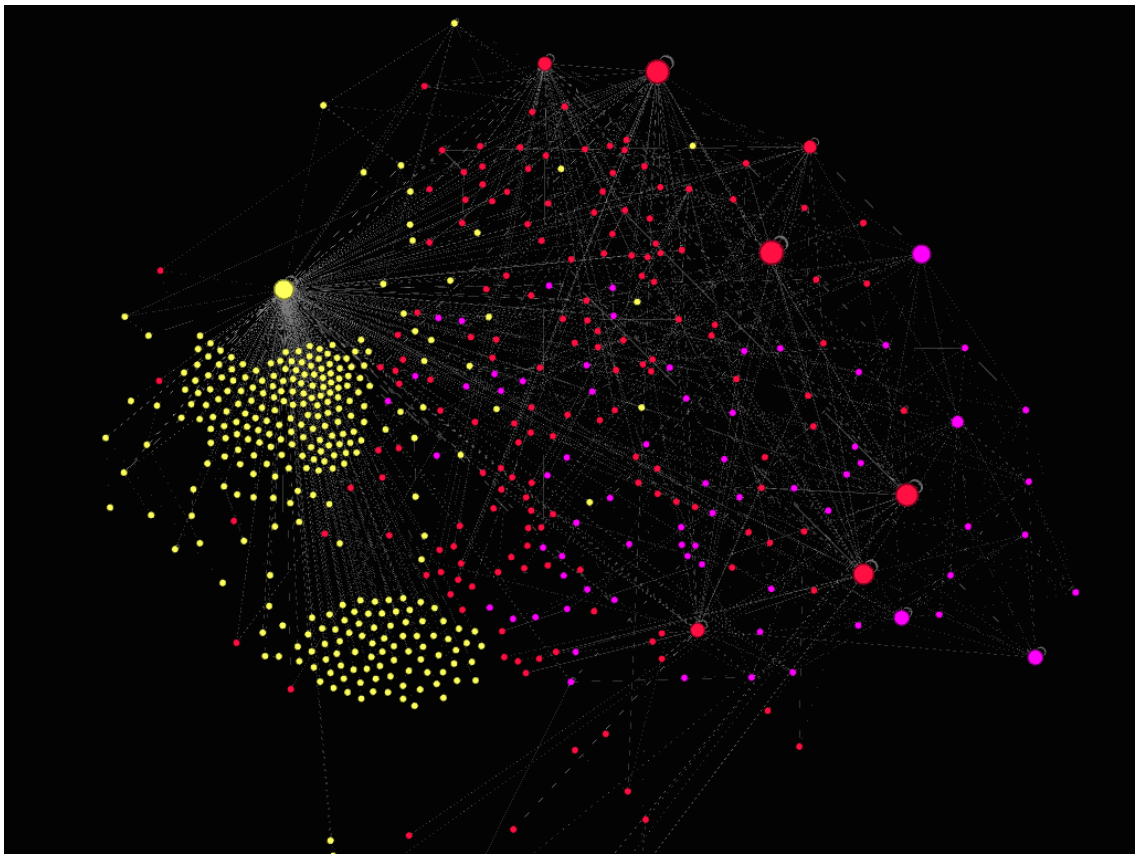


Illustration 4.4: *Constable, Rucker, & Co.*, Robert Morris, and *Empress of China* Sub-Networks



In contrast to Constable's earlier structure, his post-1791 network consisted of clusters so interconnected that they almost comprised one integrated whole. First, the nucleus built around *William Constable & Co.* demonstrated significant internal connectivity, a marked shift from the binary connection model that defined his earlier nucleus (see Illustration 4.5). While Constable's later network's major periphery cluster—dominated by Phyn, Ellice, & Inglis, David Reedy, George Cruden, and other British merchants—maintained its own structure, it closely overlaid onto the nucleus cluster that featured *William Constable & Co.* (see Illustration 4.6). In other words, the independent "neighborhoods" of Constable's later network grew more connected even as the neighborhoods themselves became increasingly integrated. The greater total integration of Constable's later network created more efficient avenues for capital flow, investment, commodity exchange, and commercial partnership.

Illustration 4.5: *William Constable & Co.* and Connections

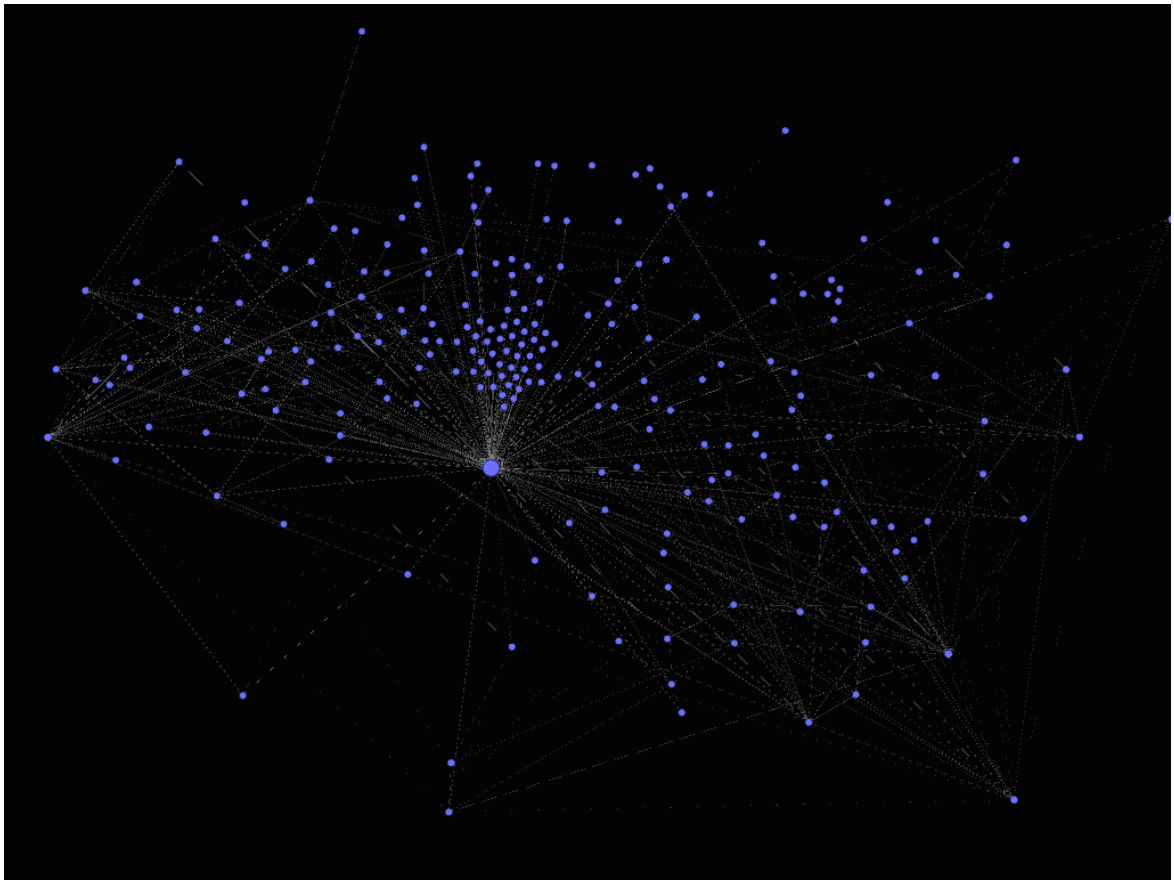
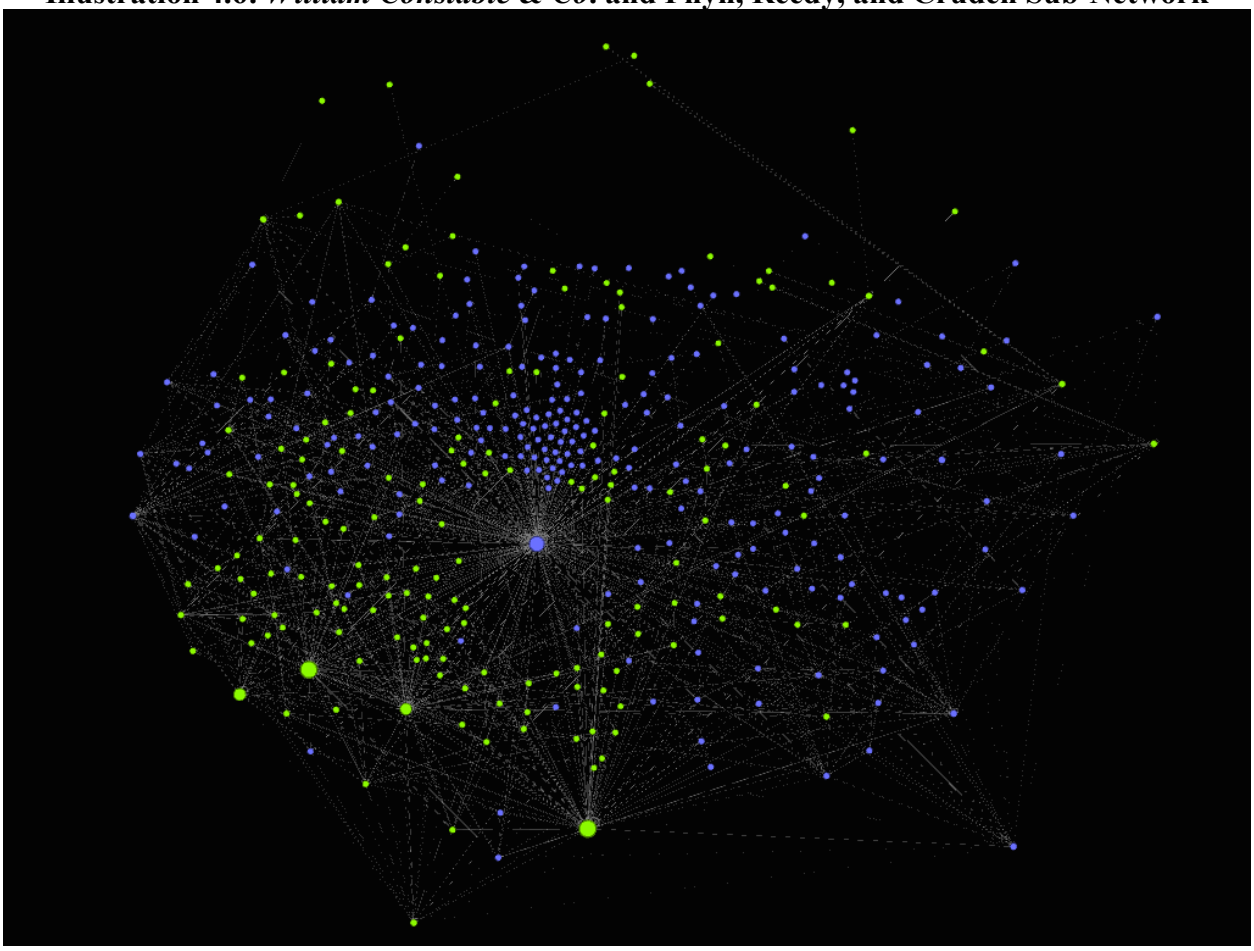


Illustration 4.6: *William Constable & Co*. and Phyn, Reedy, and Cruden Sub-Network

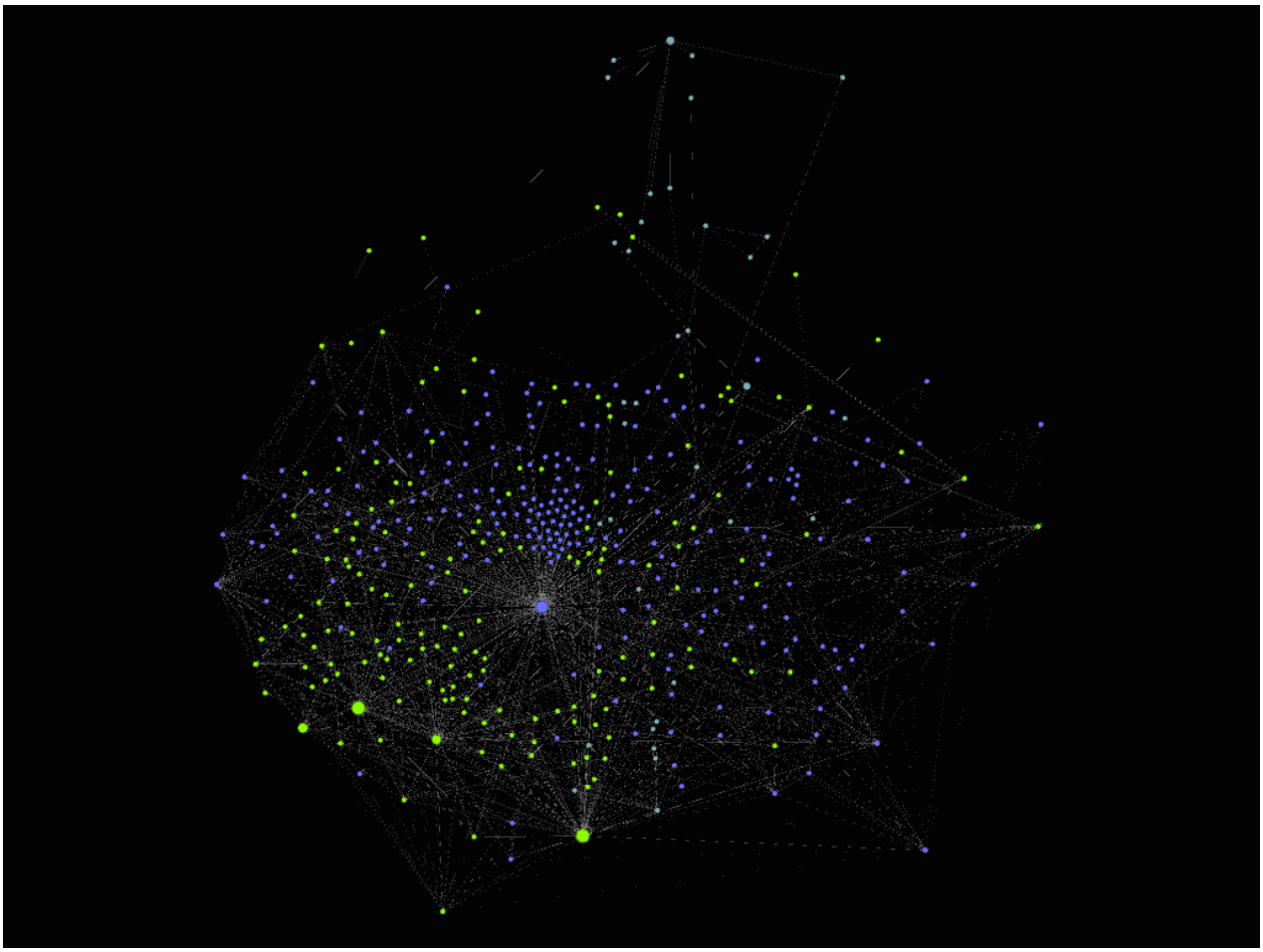


While the average commercial player in Constable's later network had a higher average number of trading partners than did those in earlier years, the improved integration of Constable's 1790s network arose from the proliferation of small-scale, but highly-influential connectors such as Isaac Moses and Simon Schermerhorn.[72] Largely absent in Constable's earlier network, these brokers specialized in connecting disparate commercial interests. While these connectors did not directly work for Constable, they became the most important reason for the improved integration of his network in the 1790s. In the final analysis, the dramatic

[72] "Influential" refers to individuals that are highly connective relative to their size. In this case, highly-influential individuals have high Betweenness Centrality to Weighted Degree ratios. In simpler terms, these individuals "punch above their weight" in terms of connectivity. While their betweenness centrality scores may not be as high as prominent individuals like Robert Morris, they average a higher connectivity ranking *per unit* of Weighted Degree than their counterparts.

proliferation of these connectors deserved the most credit for the improved performance of Constable's network in later years.

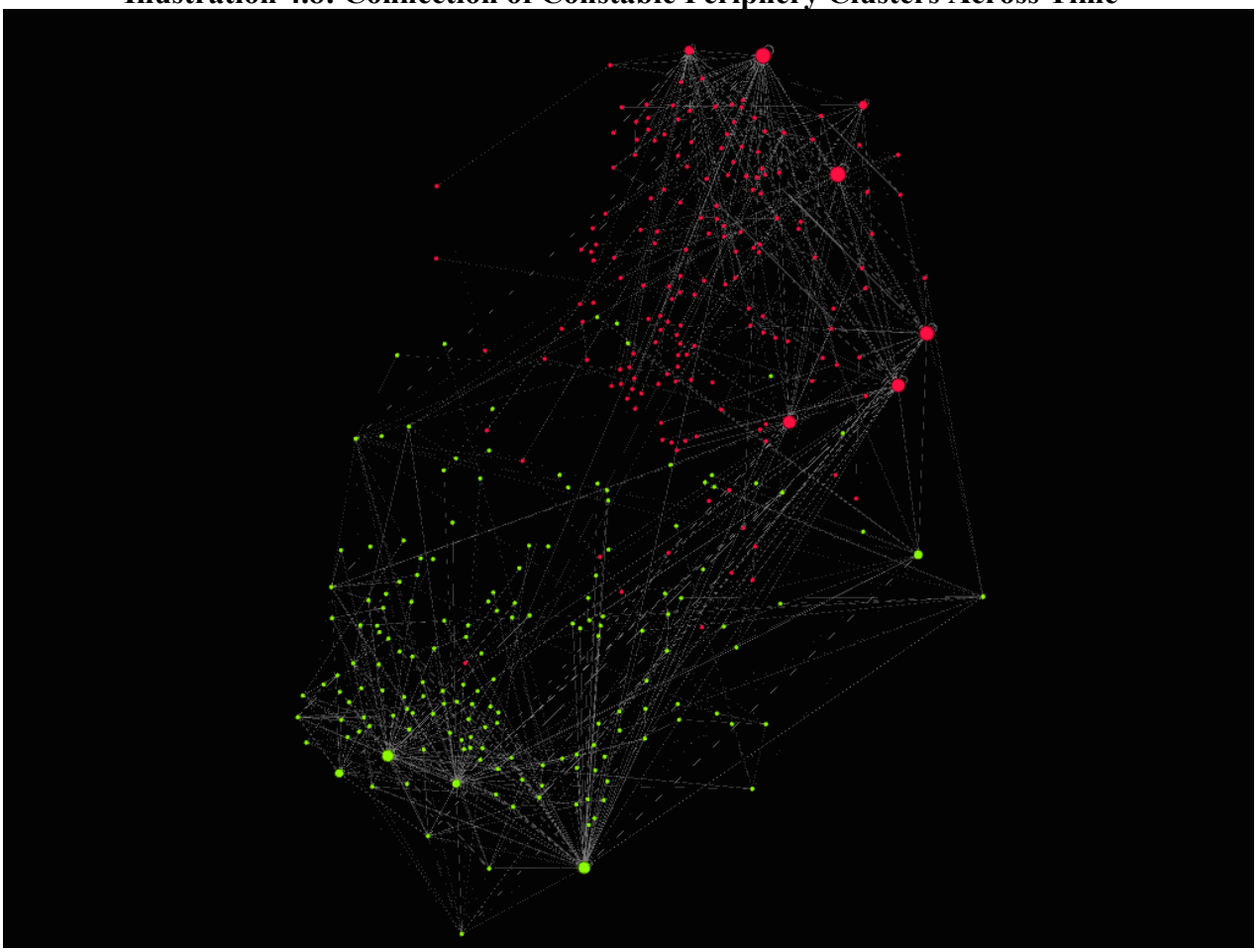
Illustration 4.7: *William Constable & Co*. and Phyn, Reedy, and Cruden Sub-Network, with Connectors



In addition to the rise of individual connectors, the ascent of "connection clusters" only added to the cohesion of Constable's later network. In effect, these small, concentrated periphery clusters specialized in connecting clusters that would otherwise remain isolated from the broader network (see Illustration 4.7). Not only did these connector clusters led by merchants like Isaac Hazlehurst, William Bell, and the firm *M&T Gregory & Co.* connect disparate groups within

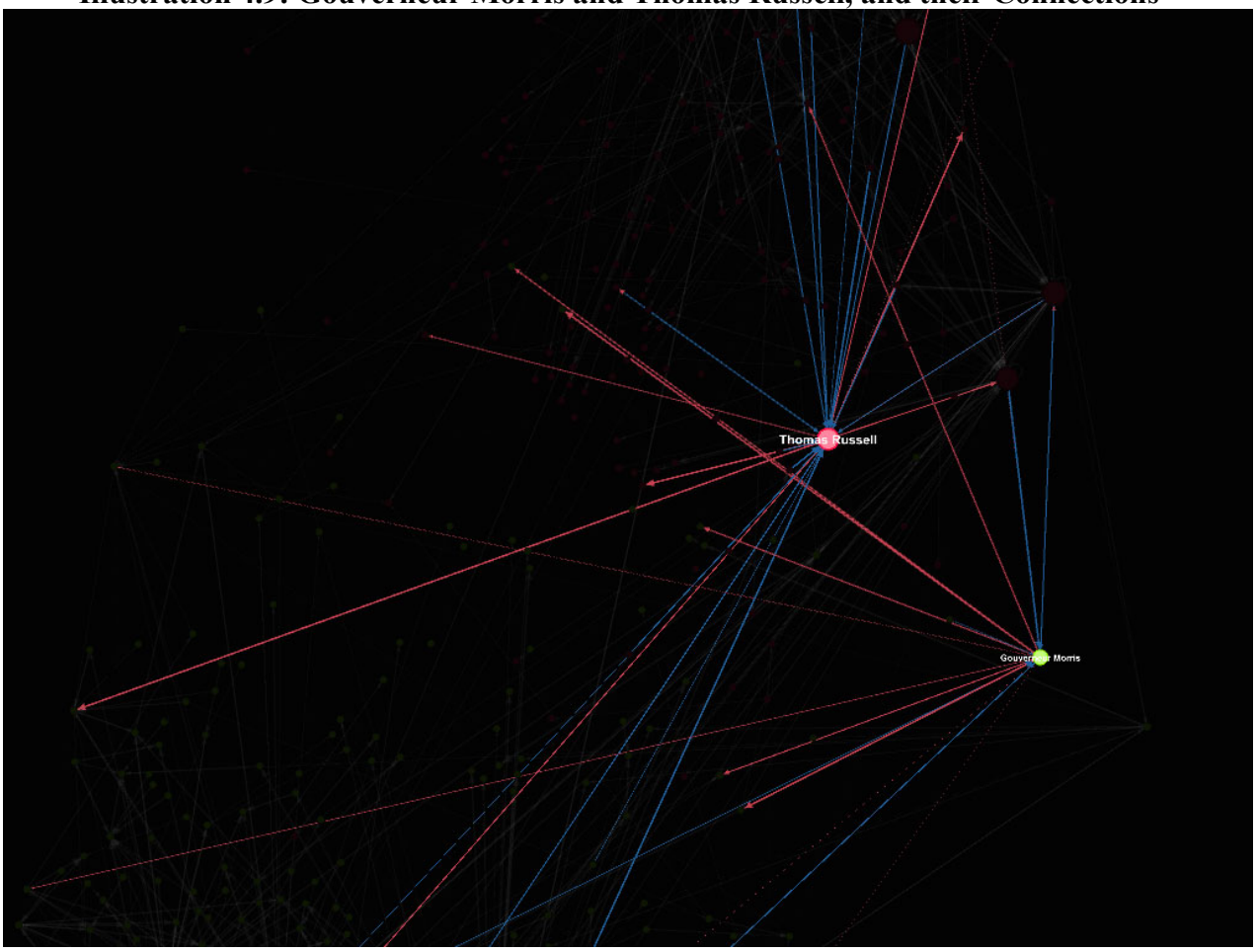
their own sub-network, but they connected Constable's two sub-networks across time.[73] Connector clusters combined longevity and connective capacity, providing a cohesive element that was rare in Constable's early years. In other words, groups led by Hazlehurst, Bell, and others like them provided temporal continuity—the connection of disparate members of Constable's network throughout the entire period from 1786 through 1802.

Illustration 4.8: Connection of Constable Periphery Clusters Across Time



[73] It is important to note that, with a few exceptions, these individuals and firms would not have seen themselves as specialized connectors. They did not consider themselves brokerages, nor did they overtly and intentionally seek to Connect disparate elements of William Constable's network. In other words, the identification of these "connector clusters" and "network brokerages" is an *ex post* analysis, categories created by this historian to describe the function they served in the context of this particular study. Nonetheless, they did very much serve this purpose whether they meant to or not. Whether by conscious selection of more disparate trading partners or simply by the contingent alignment of available counterparties, these individual commercial actors tended to trade with other commercial actors that facilitated trade amongst disparate partners. Then, as a network cluster which many of the participants would not have officially recognized, they served a connective purpose within the network of William Constable and, presumably, many other merchants as well.

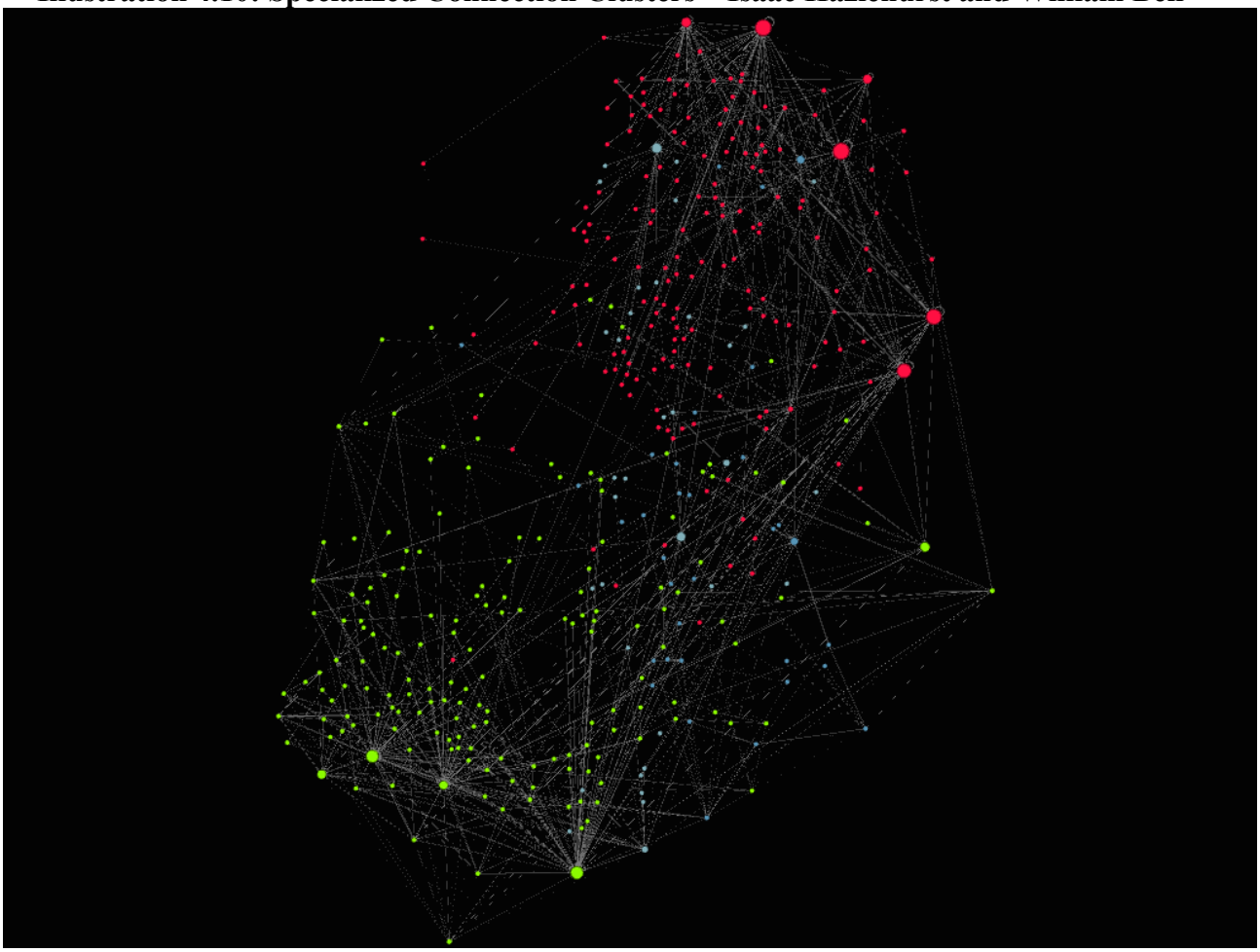
Illustration 4.9: Gouverneur Morris and Thomas Russell, and their Connections



Connectors like Hazlehurst and Bell provided vital stability as Constable's network changed its orientation, composition, density, and size. Illustration 4.8 shows the most valuable periphery clusters in each of Constable's two sub-networks. Since the clusters dominated by Robert Morris, Fitzsimons, Macomb, Rucker, and Cottringer (1786-1787, red) and Phyn, Ellice, & Inglis, Reedy, and Cruden (1791-1802, yellow) operated in different eras, they rarely converged. However, high-connectivity figures like Gouverneur Morris (yellow) and Thomas Russell (red) built strong links between both clusters over time (see Illustration 4.9). While Morris and Russell maintained strong links within their own cluster, they played a crucial role in connecting commercial actors across both geography and time. In other words, connectors like Russell and Morris linked network players on three levels: 1) within their own clusters; 2) within

their own sub-networks; and 3) between their sub-network and the one that came before or after it. Individual connectors like Morris and Russell, combined with specialized connection clusters like the one led by Hazlehurst, Bell, and others, provided important structural continuity to Constable's commercial network over the course of fifteen years (see Illustration 4.10—blue).

Illustration 4.10: Specialized Connection Clusters—Isaac Hazlehurst and William Bell



The importance of connectors to the performance of Constable's network cannot be overstated. Table 4.4 shows a clear transition in Constable's network over time, from a structure dominated by the likes of Morris and Cottringer to one led by Cruden, Reedy, and Phyn, Ellice, & Inglis.[74] The table shows the churn of high-value commercial actors in Constable's network,

[74] Figure 20 details the evolution of Constable's network over time. The names in the figure represent some of many of the individuals or firms with the high average rankings for the first and second halves of Constable's network

with global players like George Cruden and David Reedy replacing local merchants like Alexander Macomb and Garrett Cottringer. However, the consistent presence of connectors like William Bell and Simon Schermerhorn emphasize the importance of low-value, high-connectivity merchants to network sustainability and growth. While Bell and Schermerhorn executed trades with lower monetary value than the average merchant in their cluster, these connectors' aptitude for connecting counterparties made them invaluable as Constable's network evolved. [75] Without connectors like Gouverneur Morris, Thomas Russell, Isaac Moses, and Simon Schermerhorn, Constable's network would have remained stiflingly siloed in the short term and would likely have fractured under its own weight in the long term. Even more importantly, connector clusters like those led by Hazlehurst and Bell maintained the temporal continuity needed for flows of social capital to become stockpiles of it. While Constable's network in 1786-1787 doubled or even tripled the size of his network in later years, the presence of a great number of connecting elements allowed Constable's network to become more efficient, structurally sound, and profitable even as it contracted.

between 1786 and 1802. See note 51 for more detail on the ranking system employed in this table. The figure show decided transition within the group, away from a clique led by Morris and Macomb to one led by Cruden and Reedy. It also demonstrates the importance of "backbone" figures like Schermerhorn and Bell and provided continuity over time. Perhaps even more indicative of the expansion of Constable's network, the first group of merchants almost exclusively resided in Philadelphia, with a few exceptions for New York. On the contrary, the second group showed a greater geographical diverse city, with figures originating across the new United States in broader Atlantic world.

[75] While connectors like Bell and Schermerhorn had lower commercial importance than many of their high-value counterparts, the continuity and connectivity they provided made them essential parts of Constable's commercial network. Bell averaged a 31.9 ranking for his years in Constable's networks compared to 28.3 ranking held by his counterparts in Figure 20, and Schermerhorn averaged an even lower 40.7 compared to 24.3 cohort. The two also held a combined 36.3 ranking compared to a 26.05 ranking for the group as a whole. However, Bell and Schermerhorn's constancy and the height connectivity scores provided immense value in an era where connection superseded raw economic power.

Table 4.4: The Evolution of William Constable's Commercial Network, 1786-1802

	1786	1787	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800	1801	1802
Robert Morris	2	2	16	44	18	18	14							7
Garret Cottringer	5	17	34	58	8	7	8	13						
Alexander Macomb	6	6	34	24	19	40	56	37	48		36	25		
Isaac Hazlehurst & Co.		8	19	18	10	24	68	49	39	81				
Thomas Russell	7	9	50	12	9	10	7	9						
Russel & Soley								17	18	58				
Thomas Fitzsimons	9	7							95					
William Bell	69	26	56	15	34	13	17	21	64	16		44	8	
Pollock Firms	55	35	15	40	63									
Shand & Cruden				50	24									
Cruden, Pollard, & Stuart					26	52	29	46		8	11			
George Cruden							48	4	3	3	4	28	16	8
David Reedy				93	69	8	5	15	8	6	41	8	6	5
Phyn, Ellice, & Inglis			3	3	3	4	3	3	4	4	14	9	4	
Nathaniel G. Ingraham									14	22	7	5	22	
John McVickar			45	55	50		20	40	20	29	18	38	9	10
Samuel Sansum								91	60	26	12	12	18	
Forsyth, Richardson & Co.			20	17	17	17	41	23	9	9	29	14	7	
Simon Schermerhorn	101	44		81			79		13	11	18	17	3	
Samuel Reynolds & Co.								19	42	10	10	10		
Samuel Ward								7	7	30	58		25	

Source: Constable, Rucker, & Co. Ledgerbook, 1786-1787, Pierrepont-Constable Family Papers, New York Public Library.

Conclusion

As the early American economy emerged from the Revolution, independence catalyzed a rapid and dramatic "coming together" of commercial and market forces. Political economies unified. Markets became increasingly integrated. Business structures consolidated and, perhaps most importantly, American commercial players connected with each other as never before. As William Constable's network shows, efficiency and productivity came with the rise of high-connectivity individuals that made increasingly expansive trade more efficient. While Revolution-based social contacts played a vital role in providing capital and connections to entrepreneurial talent in the wake of the Revolution, their importance faded relatively quickly. In a strictly economic sense, America rapidly ceased being a Revolutionary state. Early Republican economic structures, and commercial networks in particular, stopped making Revolutionary credentials the litmus test for commercial partnership. After the shock of the 1770s and 1780s wore off, American merchants began looking to the future rather than the past.

The resuscitation of economic growth during the 1790s provided political leaders the time and credibility to establish governing norms on which the new American Republic could

grow roots. It is reasonable to believe that crises like the Panics of 1791 and 1792, the Neutrality Crisis, the Whisky Rebellion, or the XYZ Affair could very well have sundered the American experiment had they played out against a backdrop of economic deprivation. While merchants constantly issued jeremiads about monetary scarcity or French privateers, few could argue that the macroeconomic situation had changed for the better since the mid-1780s. The return of economic prosperity to Americans, as tenuous as it may have been, provided evidence that another Revolution remained unnecessary for the time being.

In many ways, post-Revolutionary networks reflected large-scale changes in American economic development. While still in its infant stages, the independent American commercial system began to emphasize integration and connectivity. Amongst individual merchants and networks alike, rapid specialization became a prominent feature of the American business community. High interest rates remained a problem, and merchants struggled to acquire cash to pay their bills. Nonetheless, William Constable's commercial network suggests that as the 1790s progressed, the challenge for early American merchants changed from finding capital to deploying it. In an era devoid of large-scale industrial investment, successful merchants best spent their time and resources accessing new markets for existing goods and services. American merchant-entrepreneurs built the commercial revolution of the 1780s and 1790s on a network revolution in which American commercial players connected with each other as never before. While American merchants' networks did expand in some cases, they often became more sophisticated and more customized. In this way, early American commercial networks did not so much change in scope as change in depth. The advances that drove American economic growth in the 1790s arose from making commercial networks more efficient and productive as opposed to larger and more diverse.

Chapter 5

Business Practices: Opportunity and Growth

As post-Revolutionary merchants emerged from the all-consuming environment of war in 1783, the American business community faced a crossroads. The prospect of new markets, both domestic and foreign, excited the wildest imaginations of merchants like Jeremiah Wadsworth and William Constable. "We now have a free trade with all the world," South Carolina physician and Revolutionary War officer David Ramsey wrote shortly after independence from Great Britain. "The wealth of Europe, Asia, and Africa, will flow upon America: Our trade will no longer be confined by the selfish regulations of an avaricious step-dame, but [will] follow wherever interest leads the way."[1] The idea that America would take its rightful place "among the powers of the earth" held tremendous commercial prospects for a new nation so rich in natural resources and ambitious merchants. However, alongside the opportunities of independence, American commerce faced the threat of new and unbridled competition. While many pre-Revolutionary Americans decried the commercial constraints placed on them by Parliament, they often omitted the open markets and consistent demand for their products sustained by the British commercial empire. Now, with independence upon them, the United States faced a world of expanding global trade and an increasing competition for the spoils of commercial dominance. In other words, newly liberated American merchants faced commercial opportunities and threats that equaled each other in both scope and breadth.

[1] David Ramsay, *An Oration on the Advantages of American Independence*, 11, quoted in Cathy D. Matson & Peter S. Onuf, *A Union of Interests: Political and Economic Thought in Revolutionary America* (Lawrence, KS: University Press of Kansas, 1990), 31.

Two centuries of participation in the British Empire fundamentally shaped the structure of American business practices. While Revolutionary-era Americans often overstated the constraints of British mercantilism, most American businesses developed as part of a broader imperial economic system. Staple production for export drove the colonial American economy, as producers of tobacco, wheat, indigo, and other raw materials created profitable linkage affects in New England and the middle colonies.[2] As a result, the incentive structures of the British imperial system, much more than specific restrictions on trade, shaped capital allocation, business structures, investment practices, and the strategic decision-making of colonial American firms.[3] Imperial regulations guaranteed American producers, and the merchants that exported their goods, reliable markets and stable demand in the British Isles and British West Indies. Insulated from foreign competition, colonial American export systems evolved to fit the imperial incentive superstructure, while importers also received a steady stream of English manufactured goods and long-term credit from British merchants. Altogether, colonial American businesses

[2] The presence of staple export crops such as wheat and tobacco grove economic growth in colonial North America. Staple crops necessitate large-scale production from which own-productivity enhancements emerge. "Learning-by-doing" stimulates greater productivity without great increases in technology and economies of scale facilitate more efficient uses of labor and capital. In the case of American tobacco, shifts toward larger plantations facilitated more efficient plantation organization and focused expertise. In addition to greater productivity on the production side, colonial staple agriculture sparked forward and backward linkage effect that benefitted all of British North America. Increasing tobacco production only fostered minimal growth in industries necessary for the production process, such tools, carts, and lumber were often procured locally. However, forward linkages, the series of processes necessary before the product is consumed, became very important as far away as Philadelphia, Boston, Glasgow, and London. Ship builders, insurers, tobacco curers, sailors, merchants, and many other professions benefitted from the growth of staple agriculture in North America. For more on staple theory in America, see Russell R. Menard, "Plantation Empire: How Sugar and Tobacco Planters Built Their Industries and Raised an Empire," *Agricultural History* 81, no. 3 (Summer 2007), 309-332; John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill: The University of North Carolina Press, 1985), 21-27; Melville H. Watkins, "A Staple Theory of Economic Growth," *The Canadian Journal of Economics and Political Science / Revue Canadienne d'Economique et de Science Politique* 29, no. 2 (May 1963), 141-149.

[3] Thomas C. Cochran, "The Business Revolution," *The American Historical Review* 79, no. 5 (Dec., 1974), 1455. Cochran wrote, ""While the Imperial yoke rested lightly on the colonies, the fact that they were largely dependent on England for both commercial capital and approval of mercantile practices discouraged American innovation. Trade regulations were designed to keep the colonies as producers of raw material, which they would chiefly have been in any case, and while some types of manufacturing for export, such as finished iron products, were prohibited, it is doubtful if output could have expanded much in the face of high inland transportation costs and British competition."

experienced relatively little risk, stable transaction costs, and certain markets for their imports and exports. The Revolution threw this entire structure into question and forced American merchants to rethink their system of business writ large.

Business historian Thomas C. Cochran referred to the post-Revolutionary era as America's "Business Revolution," a time of decided change in the fundamental structures of American commerce. Cochran argued that the years of the early Republic witnessed large-scale changes in the "capacity of the existing system of production and exchange."[4] Arguing that the Napoleonic Wars and its associated carrying trade boom drove post-Revolutionary growth, Cochran posits that, "Increasing trade, both foreign and domestic, created a demand that expanded the scale of mercantile operations, leading, in turn, to more specialization of business processes and hence more division of labor."[5] Increasingly powerful government also played an important "promotional, as distinct from regulatory, purpose" in this business revolution, while increasing flows of capital facilitated improved transportation, increased specialization, and mechanization.[6] In sum, Cochran argues that American business reacted to increased demand from external sources, a positive shock that forced structural changes to the way Americans did business.

While correct on many of the specific modifications to American business structures, Cochran's reactive model understates the opportunistic impulses of American merchants. In so doing, Cochran ignores the catalytic effect of negative shocks in forming post-Revolutionary business structures. American merchants did not simply expand the scale of their mercantile

[4] Cochran, "The Business Revolution," 1450.
[5] Cochran, "The Business Revolution," 1452; The "carrying trade as primary driver of growth" model has been addressed numerous places in this dissertation. However, Stuart Bruchey perfectly encapsulates this perspective in Stuart Bruchey, "Success and Failure Factors: American Merchants in Foreign Trade in the Eighteenth and Early Nineteenth Centuries," *The Business History Review* 32, no. 3 (Autumn, 1958), 283.
[6] Cochran, "The Business Revolution," 1453-1454.

operations to fit increasing demand from a world engaged in conflict. Rather, they anticipated the perceived opportunities of independence—and European war—and prepared their operations to meet these opportunities. In just one of many examples, William Constable wrote to John Rucker on December 3, 1787, "If fortune would favour us so far as to give us a European War, I have no doubt you & I could do something Advantageous. The American Flag might do great things in India [and elsewhere around the world]," Constable wrote. "In short, a War would open an extensive file to our Enterprize if We had some support."[7]

This chapter posits a proactive American mercantile community that, while often making disastrous mistakes, were anything but the reactive traders proposed by Cochran. Long before the French revolutionary struggle caused a surge in demand for American commodities, many merchants restructured their businesses to survive the crisis years between 1775 and 1792. In some cases, American merchants reformed their business practices during the Depression to compensate for deficient capital, closed markets, and general macroeconomic volatility. Equally often, however, the culture of dexterity refined by constant adjustment to Depression-era volatility fostered the institutional flexibility and innovative potential to capitalize on the opportunities of the Napoleonic era. Forged in crisis, the American merchant community's capacity for constant adjustment anchored nearly two decades of economic development.

Cochran also over-emphasizes the promotional effect of government power on American economic and business development. While Hamilton's reconstruction of the American financial system played a vital role in American growth, this role only provided the basis for advances in private financing and credit structures. The federal government's primary contribution came with its creation of liquid capital, not the investment of it. Nonetheless, this chapter demonstrates how

[7] William Constable to John Rucker, December 3, 1787, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

merchants seized on the elements of Hamilton's program to provision American business development. Many American merchants viewed government through oscillating lenses, at the same time a tool and an obstacle to commercial expansion. Throughout the 1780s and early 1790s, tariff barriers impinged on domestic trade while failing to protect Americans against discriminatory policies from abroad. As such, adjusting to and circumventing these economic barriers occupied a considerable portion of merchants' time. Yet concurrently, merchants sought to use government power to protect and expand their commercial reach. American merchants lobbied friends and legislatures to request direct protection for their industry, while also speculating on the impact of future government policy. While historians like Max Edling, Drew McCoy, and Cathy Matson and Peter Onuf have demonstrated the importance of government policy in American nation building, imperial contestation, interstate rivalry, and federal impotence regularly destabilized the late-eighteenth century business environment.

This chapter aims to correct and build upon Cochran's model for America's business revolution. Rather than simply reacting to an external demand shock, American merchants pursued aggressive strategies to seize post-Revolutionary opportunities for expansion. At the same time, a series of negative events forced American merchants to play defense in an era of intense domestic and global instability. American merchants embraced more risk, while diversifying their portfolios and employing sophisticated insurance and consulting firms to mitigate it. They also built complex financial markets to compensate for reduced British credit, while securing their businesses against the vagaries of geopolitical turmoil. Finally, American merchants embarked on a vast experiment in business structure, with companies of all sizes reorganizing themselves in an effort to lower transaction costs, reduce risk, and increase market share. In so doing, these Americans developed and employed new technology, while building

increasingly specialized firms that boosted productivity and increased profits. In sum, between 1780 and 1807 merchants across many sectors revolutionized the American business system.

The Revolution and two subsequent decades produced remarkable uncertainty and opportunity throughout the new United States. Rather than simply assuming that opportunity equals outcomes, this chapter shows how American business systems formed in the volatile commercial environment in the first years of independence. By managing newly open markets, reducing transaction costs, taking and mitigating risk, and employing the benefits of increased specialization, American merchants created structures that withstood widespread volatility and took advantage of its place as an independent commercial player.

Risk and Uncertainty

Independence from Great Britain brought the opportunity of trade with many new markets, but it also introduced American merchants to unfamiliar political and economic uncertainty. While newly-independent merchants gained the freedom to trade with the Far East, Southern Europe, and Latin America without the approval of Westminster, Americans also confronted the loss of long-held markets within the British Empire. Soon after the Treaty of Paris in 1783, British officials sealed off West Indian ports from American wheat, flour, dried fish, rice, and other foodstuffs.[8] At the same time, British merchants flooded American markets with cheap manufactured goods financed by cheap credit, resulting in outflows of already scarce specie.[9] As a result, state legislatures faced pressure to retaliate against British commodity

[8] Charles R. Richeson, *Aftermath of Revolution: British Policy Toward the United States, 1783-1795* (Dallas, TX: Southern Methodist University Press, 1969), 218-219; Brooke Hunter, "Rage for Grain: Flour Milling in the Mid-Atlantic, 1750-1815" (Ph.D Dissertation, University of Delaware, 2001), 127-128; Jean B. Lee, *Price of Nationhood: The American Revolution in Charles County* (New York: W.W. Norton, 1996), 225-227; Matson & Onuf, *A Union of Interests*, 30-33.
[9] George William Van Cleve, *We Have Not a Government: The Articles of Confederation and the Road to the Constitution* (Chicago: The University of Chicago Press, 2017), 41-43.

dumping and their prohibitions of American ships. "By 1784," Cathy D. Matson and Peter S. Onuf write, "the state governments began to retaliate against British discrimination with their own discriminatory legislation; coalitions of commercial farmers, international traders, and debtholders formed in the legislatures to promote increasingly autonomous—and potentially antagonistic—state economic policies."[10]

Retaliation against British trade and a new emphasis on post-Revolutionary state sovereignty raised the specter of internal trade wars and conflict over debts. The Depression of the 1780s fueled retrenchment amongst state governments, as state legislatures tried to secure revenue and protect their populations from "foreign" competition.[11] "Import duties levied by each State were imposed on the goods imported from other States as well as from foreign countries," Emory Richard Johnson writes. While "the rates of duty were highest upon the products of foreign countries, particularly of Great Britain…the tariff barriers tended to hinder the growth of trade among the States."[12] For example, Massachusetts banned the import of 58 goods from all foreign sources, including other American states while enacting a 25 percent tariff on many others.[13] New York raised import tariffs in the hope of making citizens of reliant states like New Jersey and Connecticut finance its massive Revolutionary War debts.[14] Interstate tariffs not only stifled the flow of finished goods, but they also prevented the production of goods by

[10] Matson & Onuf, *A Union of Interests*, 70.
[11] Charles Petit, John Nixon, Thomas Fitzsimons, J.M. Nesbit, John Ross, Isaac Hazlehurst, and Clement Biddle, "Emancipation of American Commerce," *South Carolina Weekly Gazette*, July 17, 1784, America's Historical Newspapers.
[12] Emory R. Johnson, *History of Domestic and Foreign Commerce of the United States*, *Vol. 1* (Washington, D.C.: Carnegie Institution of Washington, 1915), 138.
[13] George Benson to Nicholas Brown, March 4, 1785, Box 44, Folder 10, Brown Family Business Records, The John Carter Brown Library at Brown University; Van Cleve, *We Have Not a Government*, 112-113.
[14] Cathy Matson, "Liberty, Jealousy, and Union: The New York Economy in the 1780s," in Paul A. Gilje and William Pencak, ed., *New York in the Age of the Constitution* (London: Associated University Presses, 1992), 120-122; Member Meeting Minutes, October 12, 1784, New York Chamber of Commerce and Industry Records, 1768-1984, Box 394, Columbia University Rare Book & Manuscript Library, New York City.

reducing the flow of vital raw materials across state lines.[15] The interstate commercial situation had so severely deteriorated that Fisher Ames of Massachusetts feared the "dangers and calamities of a civil war."[16]

In addition to commercial and politico-economic disruptions at home, American merchants also faced trade barriers abroad. In addition to British Acts of Parliament in 1783 and 1788 that clamped down on trade with foreign nations, American's hoped-for opening of French and Spanish markets in the West Indies did not materialize.[17] While the United States held "most favored nation status in French ports, cultural and language barriers, combined with intermittent prohibitions on select goods including flour, prevented a dramatic expansion of Franco-American trade.[18] Spain also reverted to its antebellum mercantilism, at one point forcing American traders to leave Cuba at gunpoint.[19] While most American merchants celebrated the theoretical "free trade with all the world" extolled by David Ramsay, the uncertainty of the post-Revolutionary era forged an increasing appetite for risk in American business culture.

To compete with British, French, and Dutch traders who had access to cheaper credit, better manufactured goods, shorter travel times to the Far East, and centuries of institutional knowledge, American traders acquired a reputation as being willing to shoulder more risk than their European counterparts. In January 1788, Englishman James Phyn wrote from Lisbon to warn Constable against "[his] countrymen's appetite for risque."[20] Phyn may have been warning against the American tendency to dispatch ships to the Far East much earlier in the season, thus

[15] Matson & Onuf, *A Union of Interests*, 73.
[16] Fisher Ames, "From the Connecticut Courant, Printed at Hartford. The Republican, No. VI," *New-York Journal, and Weekly Register*, March 29, 1787, America's Historical Newspapers.
[17] Hunter, "Rage for Grain," 128. Also see footnote 9.
[18] Henri Sée, "Commerce between France and the United States, 1783-1784," *American Historical Review* 31 (1926), 732-737; Johnson, *History of Domestic and Foreign Commerce*, 125-130.
[19] Hunter, "Rage for Grain," 126-127.
[20] James Phyn to William Constable, January 28, 1788, Box 1, 1788-June 1789, Constable-Pierrepont Papers, New York Public Library.

risking adverse weather and considerable loss. Constable explained that Americans needed to beat European traders to ports in India and China, in the hopes of attaining more favorable prices for tea and spices.[21] Facing inherent disadvantages, Americans risked tumultuous seas to access eastern markets before European demand and supply drove up prices and depressed the market value of American commodities.

To hedge against their inherent uncertain markets, commercial disadvantages, and increased risk-taking, Americans like Levi Hollingsworth and William Constable employed what Carolyn Downs calls "information-power as capital" to leverage every advantage they could muster.[22] These merchants placed a premium on information gathering, creating commercial networks that they marketed to clients and used to act as a first-mover should new opportunities arise. For example, Hollingsworth kept up-to-date "market reports" covering American cities from Boston and New York to Savannah and New Orleans, over 25 European cities in England, Ireland, Belgium, Holland, France, Portugal, Spain, and Russia, and at least five different West Indian islands.[23] Combining a mix of proprietary and published information, the reports included commodity prices and intelligence on the important mercantile actors in each city. Hollingsworth used these reports to analyze market trends and build flour distribution networks throughout the Atlantic world. Hollingsworth repeatedly told correspondents that current market intelligence allowed him to capture the large orders that sustained his growing flour empire.

Constable placed an even greater premium on information mastery. Acknowledging that he suffered higher capital costs and negligible reputation in critical ports, Constable pressed his

[21] William Constable to Truxton, November 9, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[22] Carolyn Downs, "Networks, trust, and risk mitigation during the American Revolutionary War: a case study," *Economic History Review* 70, no.2 (2017), 511.
[23] Market Reports, 1770-1839, Hollingsworth Family Papers, 1715-1849, Boxes 359-361, Historical Society of Pennsylvania, Philadelphia, PA.

agents to collect any detail that could possibly turn into an advantage. "The principal object of [your visit] is to acquire an intimate knowledge of what may be done between this and that country," Constable wrote to Robert Eccles. "We beg leave here to repeat what we have often pressed upon you in conversation, the vast importance of your paying the strictest attention to the trade of the different place which you may touch." Constable then enumerated the information he wanted Eccles to acquire, ordering him to take "down with the most scrupulous exactitude a description of the various kinds of commodities which they import and export, the Duties, & charge, the weights and the measures of their different manufactures with their prices and the proper seasons for arriving at and sailing from the several ports with every other remark which may occur." Constable trusted Eccles to build his growing network, requesting that Eccles relay intelligence on "the persons from the most reputable Houses of Commerce." Finally, Constable ordered Eccles to procure samples of the best goods in every port, including cotton, wine, flour, and other commodities.[24] Like Hollingsworth, Constable's sought commercial information for analytical purposes—he created a foundational knowledge base against which he measured the viability of future ventures.[25]

When facing closed markets, as opposed to simply disadvantageous ones, many American merchants considered old-fashioned smuggling. American smugglers packed dry goods into flour barrels—one of the few commodities allowed into closed British West Indian ports for short periods—and scouted remote locations near main ports at which small "pilot

[24] William Constable to Robert Eccles, October 31, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[25] Constable constantly plied his friends for information, including the Secretary of Treasury Alexander Hamilton. Constable regularly flouted his relationships with powerful people, filing his correspondence with lines like his November 26, 1789 claim that he "dined with Hamilton on Saturday." While accounts always support the historiographical consensus of Hamilton's probity, Constable did not hesitate to solicit information through more dodgy means as well. In December of 1789 Constable reported to Alexander Ellice that he was "well connected" with several unnamed members of the legislature who would pass him commercial intelligence on a consistent basis.

Boats…will carry between 30 & 40 Hhds" could be unloaded "at day or Night." Immediately after unloading of these small quantities, local contacts would "dispose of her Cargo & wine right off after touching in at such place as should be agreed." While desperate to access closed West Indian markets, even the most audacious merchants held grave reservations. Immediately after presenting a flour barrel packing plan, William Constable noted that local officials had become very good at detecting traditional American smuggling operations. Constable then told his correspondent that several American smugglers had recently been imprisoned, concluding that the high risks "cuts off the brightest prospects in that quarter."[26] The reservations posed by Constable and others correspond with historian George Van Cleve's conclusion that while "there is no doubt that smuggling occurred, it is a mistake to overstate its importance. Studies by [Frederick W. Marks] document substantial decline and dislocation in west Indian trade during the [1780s and early 1790s]."[27] "If American smuggling to the West Indies had been widely successful," Van Cleve concludes, "there would clearly have been far less political impetus than there was in New England to obtain or exercise retaliatory trade powers."[28]

Rather than execute risky traditional smuggling, many American merchants found new ways to get their prohibited ships into British ports. As early as December 1783 Constable began exploring "Any possibility of covering the Vessell as British."[29] Constable hoped to acquire forged "British papers" in New York, which he would then use to acquire a British charter in Nova Scotia. If unsuccessful—an outcome that he anticipated—Constable set in motion an

[26] William Constable to John [Seagrove?], October 30, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library; William Constable to Thomas Major, December 24, 1787, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[27] Marks work on smuggling can be found in Frederick W. Marks III, *Independence on Trial: Foreign Affairs and the Making of the Constitution* (Baton Rouge: Louisiana State University Press, 1973), 56-58.
[28] Van Cleve, *We Have Not a Government*, 108.
[29] William Constable to John Richardson, December 11, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

audacious plan to purchase doctored documents in the robust Montego Bay, Jamaica black market. Concurrently, Constable provided cash to local correspondents *Alexander Longlands & Company* to bribe local agents to covertly enter the names of Constable's ships into customs officials' logs.[30] Constable hoped that these measures would be enough to get his ships past exacting British customs agents. Nonetheless, he knew that this plan risked the confiscation of his vessel and all its cargo. While records do not indicate whether this plan ultimately succeeded, Constable's appetite for smuggling vanished completely within a year of independence.

Rather than face the risks associated with smuggling, merchants like Constable, Tench Tilghman, Nicholas Brown, Jeremiah Wadsworth, Robert Hazlehurst, and many others sought to capitalize on proliferating trade barriers rather than try to circumvent them. The post-war British prohibition of American ships entering West Indian ports created opportunities for speculation, or betting on price movements resulting from changes in tariff regimes in the United States and abroad. Suspecting that the British closing of West Indian ports, most specifically Jamaica, would spark reciprocity from American states like Pennsylvania, Constable theorized that the price of West Indian goods would increase dramatically. Constable saw sugar as the imported good most likely to be affected by American trade reciprocity and suggested to his partners Seagrove & Coppenger that they buy substantial quantities of West Indian sugar at its current low price. "If the other States take the matter up with Spirit," Constable wrote, "Sugars cannot fail to make a good remittance, especially into NYK in the Spring."[31] Using instinct and carefully cultivated information rather than risky smuggling tactics, Constable hoped to produce extensive profits while provisioning the New York market.

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[30] William Constable to Alexander Longlands & Company, December 12, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[31] William Constable to Seagrove & Coppenger, December 18, 1783, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

This type of commercial speculation became increasingly common as American merchants sought to circumvent post-Revolutionary British commercial power. While speculation entailed significant risk, merchants could avoid capital loss and potentially produce sky-high profits. Smuggling risked not just the cargo (working capital) but the ship (fixed capital) as well. In commercial speculation, the merchant only risked losses relating to the cargo itself. More importantly, commercial speculation provided an important societal function. Unlike financial and land speculation, commercial speculators provided scarce goods in times of economic disruption. By purchasing a large quantity of a prospectively-scarce good in advance of scarcity, merchants like Constable supplied a market that would otherwise be barren due to embargoes, high tariff barriers, and poor harvests. While commercial speculators certainly advocated for policies that benefitted their businesses, most merchants found their resources better spent on information gathering and optimizing operations than trying to force trans-national market movements.[32]

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[32] While Americans largely failed to significantly influence international commodity markets, many merchants employed politics as a business strategy. Two separate groups arose in the mid- to late-1780s in support of protection for domestic production. The first wing, led by Alexander Hamilton, believed that that economic actors inherently adhered to habits formed by custom, opting to stick to traditional and less productive methods of economic enterprise. Thus, the Hamilton wing believed that reluctant laborers and investors needed "the incitement and patronage of government" to help them overcome initial obstacles to engaging a new economy. The government should encourage invention and innovation by offering prizes and rewards for significant industrial advances, while enacting relatively low, revenue-producing tariffs on a small number of vital goods that would eventually fade away over time. Hamilton wanted to encourage American production with incentives, while still maintaining a healthy level of foreign competition. In other words, Hamilton never wanted to fully insulate American firms. Rather, he intended to give them space to grow so that they could soon stand on their own feet. The second wing, led by high-Federalists Thomas Fitzsimons, Tench Coxe, and others, quickly became heavily protectionist and advocated for high tariffs on a wide range of American products. This second wing originally held a firm alliance with the moderate protectionists, largely due to Hamilton's dominance of Federalist politics in the early 1790s. However, by the mid-1790s these "neomercantilists" comprised of New England high-Federalists and mid-Atlantic mechanics and manufacturers began to nudge the moderates out of influence. For more on this weaponization of political economy see Lawrence A. Peskin, *Manufacturing Revolution: The Intellectual Origins of Early American Industry* (Baltimore, Md.: Johns Hopkins University Press, 2003), 73-79, Robert Bruce Bittner, "The Definition of Economic Independence and the New Nation" (Ph.D. Dissertation, The University of Wisconsin-Madison, 1970), 7-10 & 153-159, and Richard J. Purcell, *Thomas Fitzsimons: Framer of the American Constitution* (Dublin, Ireland, 1938).

In areas like Far East trade where Americans had little or no experience, merchants like William Constable hoped protective duties would allow them to develop their business. Merchants from Great Britain and the Dutch Republic had more than a century of experience bringing Far East goods, most importantly tea, to the New World.

The global nature of commodity markets allowed post-Revolutionary American merchants to speculate on a scale unfathomable in the colonial period. While the number of land and financial speculators remained comparatively small, the slow pace of information and transportation meant almost every commercial venture entailed an aspect of speculation.[33] The post-independence opening of global markets to American merchants resulted in greater avenues for Americans willing to speculate on volatility. For example, after learning of large-scale sugar crop failures "in the Danish & Dutch Islands from where almost all our supplies of Sugars were drawn," Constable immediately wrote to his partner Gouverneur Morris in France. While Constable had dispatched his ship *Everetta* to Bordeaux for a shipment of unnamed goods, the knowledge of the sugar crop failures forced him to change course. Constable ordered that Morris immediately "ship 100 Hhds of good bright Sugars" back to New York, knowing that he would find a receptive and profitable market there. Constable also requested that Morris purchase any available "tobacco ships" to transport sugar back to America. Constable acknowledged that procuring financing for such a speculation would be difficult and demand high rates of interest. Thus, he proposed a co-venture in which French merchant house *Ruellans*, who would finance the voyage while Constable assumed the backside risk. In the end, Constable procured slightly over 400 Hhds of sugar for the New York market, all of which sold at slightly inflated prices.[34]

With this experience came extensive contacts, economies of scale, and a capital structure that facilitated long-term, long-distance trade in high volumes. For these reasons, Constable and many others like him hoped new national duties would forestall foreign competition long enough for Americans to gain a foothold. "We are in hopes of getting the duties considerably augmented on China goods not imported direct from the place of their growth, which is at present the Case in several of the States," Constable wrote to William Chalmers on December 10, 1787. Constable argued sectoral development marked one of the primary arguments for the Constitution of 1787, as only uniform commercial regulations could hold experienced foreign merchants at bay.

[33] While American merchants could almost always rely on demand for common foodstuffs and dry goods, volatile procurement prices and demand levels at home made the profitability of even the most common commercial ventures uncertain see Appendix I on Volatility.

[34] William Constable to [Gouveneur] Morris, May 17, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

These trans-Atlantic speculations also worked in reverse, as Americans like Constable, Morris, Hazlehurst, and Andrew Clow became the primary channels for American goods to European markets in times of scarcity. After months of rumors of a brewing European conflagration, on August 9, 1789 Constable laid out his plan to supply Europe in case of war. In addition to military conflict, "it is reported that the Harvest is likely to fail in France this year again, & that Crops in England are but midling [sic]," Constable wrote to Gouverneur Morris. "If therefore the Exportation from Dantzich & c. shoud be prohibited in Consequence of the Northern war, large supplies of Wheat and flour will be wanted in Europe."[35] After receiving word of empty flour markets across the old Continent four months later, Constable set in motion a plan to provide as much American flour to Lisbon, Nantes, Bordeaux, and the French West Indian colonies as he could. Concurrently, Andrew Clow had ordered 40,000 barrels destined for Lisbon, which drove up the price of flour considerably in Philadelphia wholesale markets. On top of high prices, financing the speculation proved the most difficult task. Scarce credit required that Constable deposit extensive collateral for a short credit of only two months. "I look upon the risque we take as very great," Constable wrote to Gouverneur Morris, but he nonetheless remained certain that he could turn a substantial profit.[36] Over the next year and a half, Constable made similar speculations on tea, cotton, rice, and even sea-going vessels, despite the rising risk of imperial warfare.[37]

As American merchants continued to make inroads in markets across the globe, many merchants believed that domestic market mismanagement posed the greatest danger to the

[35] William Constable to [Gouverneur] Morris, August 9, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[36] William Constable to [Gouverneur] Morris, December 1, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[37] William Constable to Andrew Constable, June 7, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

nascent American mercantile community. While some colonial American merchants operated in the same spheres as their British counterparts, imperial trade regulations incentivized complementary rather than competitive roles for American and British traders. As a result, American merchants had little experience balancing their price structures to ward off more experienced foreign merchants. In the absence of uniform commercial barriers to external competition, Constable outlined this newfound struggle with free trade in the winter of 1787. "But what [tea] now remains on hand," William Constable wrote to William Chalmers, "will do much better in the Spring as there is very little in the Country but with us. We must however use a degree of prudence in not raising the prices so high as to make it an object with Europeans to ship to this country."[38] Constable here describes the tension between the quest for high profits and the concern that those profits would attract foreign competitors with significant commercial advantages. Once adamant about the glories of unbridled commerce across the globe, Americans like Constable quickly felt the uncertainty of open markets.[39]

Many American merchants sought to mitigate the risk of commercial speculation and politico-economic uncertainty by diversifying their portfolios. While mild diversification became a common practice by the mid-eighteenth century, the increasing complexity of long-distance post-Revolutionary trade required even greater diversification to balance increased risk.[40] For example, the Beekman family of New York diversified their commercial portfolio by expanding into financial transactions and real estate in New York City and other major metropolitan areas. In fact, James Beekman's sale and leveraging of real estate holdings played a critical role in his

[38] William Constable to William Chalmers, December 10, 1787, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[39] After confronting the stark reality of free trade in a world of commercial giants and deep depressions, many Americans soured on the prospect of open markets. For more on this see footnote 33 and Peskin, *Manufacturing Revolution*, 73-79, and Bittner, "The Definition of Economic Independence and the New Nation," 7-10 & 153-159.
[40] Cathy Matson, "Fair Trade, Free Trade: Economic Ideas and Opportunities in Eighteenth-Century New York City" (Ph.D. diss., Columbia University, 1985), 213-214.

avoiding bankruptcy during the late 1780s.[41] Likewise, many merchants in Providence, Boston, Philadelphia and Baltimore such as the DeWolf family, Tench Coxe, Nalbro Frazier, and Robert Oliver expanded into new commodities like coffee, sugar, and mahogany to diversify their portfolios.[42] With extensive trade going to Europe in the Far East, South American products posed a particularly attractive means of diversifying commodity baskets.[43] While American merchants did not shy away from taking risks to gain commercial advantage, they increasingly sought to spread that risk over a wide array of products from diverse geographic locations.

American merchants also offset their risks by creating a market for increasingly specialized insurance companies. Maritime insurance had existed in colonial America for over a century, but the post-Revolutionary growth of the American mercantile and shipping industries provided opportunities for specialized insurance brokers that focused on particular industries or destinations. Large merchants seeking external investment for their excess capital provided most insurance in the colonial era. For instance, the Browns of Providence routinely offered various types of insurance—maritime and property being the most common—to local contacts as a way of gaining liquid capital and maintaining commercial relationships with important contacts.[44] Between 1753 and 1762, Obadiah Brown provided insurance to over 130 voyages, most of which

[41] Philip L. White, *The Beekmans of New York in politics and commerce, 1647-1877* (New York: New-York Historical Society, 1956), 486-497.
[42] Stuart W. Bruchey, *Robert Oliver, Merchant of Baltimore, 1783-1819* (Baltimore: The Johns Hopkins University Press, 1956), 65-66 & 200-201; Jennifer L. Anderson, *Mahogany: The Costs of Luxury in Early America* (Cambridge, Mass.: Harvard University Press, 2012), 255-259.
[43] Richard S. Chew, "Certain Victims of an International Contagion: The Panic of 1797 and the Hard Times of the Late 1790s in Baltimore," *Journal of the Early Republic* 25, no. 4 (Winter 2005), 610-611.
[44] Obadiah Brown began insuring ships as early at March 1747. In James B. Hedges, *The Browns of Providence Plantations* (Providence, RI: Brown University Press, 1968), 10, Hedges reports that Obadiah Brown "entered into a curious reciprocal agreement with Elisha Brown, by which the later insurance for £100 'ye Brigt. *Desire*,' owned by Obadiah, who in turn insured for the like amount he Bridt. Wainscot, presumably owned by Elisha." While rudimentary by modern standards, the deal both provided some displacement of risk, but also, and more importantly, cemented a personal relationship that became important in the years following.

sailed for friends or commercial partners.[45] By the eve of the Revolution, Nicholas Brown had broadened his insurance business. While he still offered policies for friends and fellow merchants, he also provided home, fire, and other types of property coverage for close contacts. For instance, Brown received bi-annual home insurance premiums of 24 pounds and 6 shillings for almost a decade beginning in 1771 from Revolutionary War General James Mitchell Varnum of East Grennwich, Rhode Island.[46] While the Browns' insurance business dated back to the mid-1740s, it always remained an auxiliary component of their much larger mercantile trading operations.[47]

The combination of private mercantile insurers and large firms in London and Glasgow helped colonial American merchants offset commercial risk and secure their property against disaster.[48] However, the Revolution fundamentally changed this dynamic. After the capital loss of the Revolution and commercial distress of the 1780s, American merchants began creating chartered, incorporated insurance companies. Secure from geopolitical disruption, capable of marshaling large amounts of capital, and able to spread risk over wider number of shareholders, incorporated insurance companies proliferated during the mid-1790s. According to historian

[45] Obadiah Brown Insurance Book, 1753-1762, Obadiah Brown I (1712-1762) Papers, Box 2, Folder 32, Manuscripts Division, Rhode Island Historical Society; Hedges, *The Browns of Providence Plantations*, 10.
[46] Premium payment receipts, 1772-1783, Brown Family Business Records, Box 905, Folder 2, the John Carter Brown Library at Brown University.
[47] Nicholas Brown & Company, Ledger, 1765-1769, B1090, F6, Brown Family Business Records, The John Carter Brown Library at Brown University.
[48] Until the mid-1740s almost all colonial American insurance went through private underwriters in Britain, many of which had a connection with the massive British insurance firm *Lloyds of London*. These British firms conducted business and the North American colonies through American intermediaries, but they had no official presence in any a major American city. By the mid 1750s insurance brokerages in Boston, New York, and Philadelphia emerged. Nonetheless, according to the historian Solomon Huebner, "the underwriting in all these cases continued to be by individuals or partnerships only, who generally represented wealthy citizens of the community." For more on colonial American insurance practices, see, Solomon Huebner, "The Development and Present Status of Marine Insurance in the United States," *The Annals of the American Academy of Political and Social Science*, Vol. 26, Insurance (Sept., 1905), 252-259, and A. Glenn Crothers, "Commercial Risk and Capital Formation in Early America: Virginia Merchants and the Rise of American Marine Insurance, 1750-1815," *The Business History Review* 78, no. 4 (Winter 2004), 608-610.

Hannah Farber, at least 27 chartered insurance companies emerged between 1794 and 1800.[49] While most of the highest-capitalized insurance companies materialized in Philadelphia, New York, and New England, the desire for local insurance provision drove the establishment of companies in second-tier but growing commercial centers. By 1800, Baltimore, Alexandria, Charleston, and Norfolk hosted new insurance companies. By the beginning of the War of 1812 cities from New Orleans to Dover, Delaware to Portland, Maine boasted at least one such incorporated insurance firm.[50] In addition to providing tailored policies at increasingly stable prices, insurance companies helped spur local economic development. By consolidating capital and adopting sophisticated statistical techniques that minimized unexpected outlays, insurance companies facilitated investment and high-productivity jobs in growing commercial centers.[51]

In addition to the proliferation of highly-capitalized insurance companies, specialized insurance brokers began to emerge in cities across the new United States. John Delafield, an English immigrant to New York who arrived just before the British evacuated the city in 1783, opened one such company and quickly established himself as an important figure in New York's postwar mercantile community. While merchants like Charles McEvers Jr. and Jacob Sarly continued to offer the occasional insurance policy during the 1780s, specialized insurance brokers like Delafield quickly came to dominate the industry. By 1786, Delafield wrote a wide array of commercial policies for huge sums and included prominent merchants including Robert Morris, Nicholas Low, William Constable, Isaac Hazlehurst, and Thomas Willing as clients. For example, on May 8, 1785, Delafield received a huge premium payment of £3200 from merchant and speculator Alexander Macomb. Demonstrating the diversity of Delafield's business, only a

[49] Hannah A. Farber, "Underwritten States: Marine Insurance and the Making of Bodies Politic in America, 1622-1815" (Ph.D Dissertation, University of California-Berkeley, 2014), 261-264.
[50] Farber, "Underwritten States," 262-263.
[51] Crothers, "Commercial Risk and Capital Formation in Early America," 608-610.

few days later he authorized a small policy from Colonel Edward Carrington with annual premiums of no more than £15.[52] While he offered a myriad of policies to a wide array of clients, Delafield developed an expertise in the commercial insurance needed by America's growing mercantile community.

Delafield's commercial expertise embodied the rapid specialization of America's insurance and risk mitigation industry. While he sometimes wrote policies for coastwise shipping ventures, Delafield developed a reputation for expertise in trade with Latin America and the Spanish and French West Indies. Delafield's records reveal extensive business insuring voyages from Philadelphia and New York to Hispaniola, Honduras, and Nicaragua. As trade with these regions grew, Delafield's expertise became particularly valuable to ambitious merchants.

In addition to standard insurance brokering, Delafield became a sort of trade consultant for commerce with Spanish colonies. In addition to providing the mercantile firm *Coxe & Frazier* an insurance policy at 4.5 percent from Philadelphia to Honduras, Delafield provided detailed knowledge on the exotic wood and coffee trade, including information on commercial conditions and market depth for those goods. "I have made all the inquiries I could respecting the price of mahogany etc. And there are no duties on her or other exotic Woods imported or exported in any of your projective destinations," Delafield wrote. "Good Jamaica or Cuba mahogany of high quality sells at 14 or 15 here," Delafield informed Coxe & Frazier, "and the price should not dip below that in any port."[53] Highly specialized firms like those run by Delafield, Clement Biddle, Mordecai Lewis, Thomas Eddy, and many others, provided large,

[52] Constable, Rucker, & Company, Ledger B, 1786-1787, Constable-Pierrepont Papers, New York Public Library.
[53] John Delafield to Coxe & Frazier, August 29, 1785, John Delafield Letterbook, 1783-1785, New York Public Library.

diversified merchant houses the expertise needed to offset increased risk and volume, without holding such expertise in-house.

Specialized commercial insurer-consultants like Delafield also handled logistics for select clients. Regional expertise allowed Delafield to efficiently coordinate with suppliers and arrange for crews familiar with the destination.[54] Delafield also became an expert on using new commercial banks such as the Bank of New York (BoNY) and, later, the Bank of the United States (BUS), to finance commercial ventures. Delafield used his position as a shareholder and later director of BoNY to "maintain his own liquidity" while insuring increasingly risky and profitable ventures. Access to the banks' discount window[55] provided Delafield a stream of cash in tight money markets, which ensured that he could keep insurance rates lower than many competitors.[56] Completing his suite of services, Delafield provided short-term, cash loans to clients to facilitate the provisioning of commercial voyages. While the 2 percent, three- to seven-day loans approached usurious levels, clients seemed happy to include the fees as part of their

[54] John Delafield to Donaldson & Coxe, September 5, 1785, John Delafield Letterbook, 1783-1785, New York Public Library.

[55] The "discount window" at early American commercial banks became the primary means of commercial credit and liquidity provision as American finance transitioned from personal to institutional systems. Rather than issuing loans with monthly or annual interest payments, early American banks "discounted" bills of exchange and other financial notes. In rare occasions, provided small, collateralized commercial loans with the interest paid upfront. These discounts tended to be short-term, with repayment rarely occurring outside of twelve months. A merchant in need of cash could post bills of exchange or other assets as collateral with the bank and receive banknotes or specie for the total sum minus the expected interest. For example, for a six-month, $500 discount at the legal annual interest rate of six percent, the borrower would receive $485 but repay a total of $500. However, these types of "discount" loans were rare and most often served to fill short-term holes in balance sheets rather than provide for capital investment. More often, banks discounted notes themselves, meaning they provided liquidity in return for bills of credit or other fixed-term credit instruments held by merchants. In this case, the discounter would transfer a bill of exchange to the bank in return for the bill's face value minus interest and fees. As above, this process often provided liquidity rather than investment capital to early American merchants. However, due to relatively low capital bases and low leverage ratios, banks limited their discounting practices. Thus, personal relationships played an important role in accessing the discount window. In early American cities with very few sources of credit or cash, access to discount windows became invaluable assets for brokers like Delafield. For more on discounting, see Robert E. Wright, *Origins of Commercial Banking in America, 1750-1800* (New York: Rowan & Littlefield Publishers, 2001), 8-10.

[56] Robert E. Wright, "Delafield, John," *American National Biography Online* (Feb. 2000), http://www.anb.org/view/10.1093/anb/9780198606697.001.0001/anb-9780198606697-e-1000401.

expenses to Delafield's firm.[57] In addition to providing competitive insurance rates, Delafield's true value came in the highly specialized commercial services he provided to his clients.

Finance and Transaction Costs

For many American merchants, speculation on geopolitical movements, combined with arbitrage opportunities in new markets, became a significant part of their post-independence commercial strategy. As shown in Chapter 2, capital and credit scarcity became one of, if not the, principal impediments to American commercial development after the Revolution. Colonial domestic commerce relied heavily on book credit,[58] while long distance trade depended on long-term credit offered by British merchants.[59] Unfortunately, in the wake of independence both systems broke down due to the disruptions of war and subsequent economic depression. As a result, American merchants had to develop new ways of financing the opportunities posed by growing demand from newly opened markets. The postwar revolution in American finance involved both sophisticated risk-taking and calculated risk mitigation. While not perfect, a series

[57] John Delafield to Deaver & Baker, May 29, 1784, John Delafield Letterbook, 1783-1785, New York Public Library.

[58] While commercial actors employed many variants of book credit in the colonial and early Republican years, its principal tenants revolve around binary, non-monetary transactions registered in a ledger, journal, or daybook. Book credit rarely involved interest. Rather, the debtor built up an account with the creditor over a set period of time, after which full or partial payment would be made (in theory).

[59] Staple crop production required long-term credits—at least a year and sometimes is high as 18 months. Since much of the colonial American economy revolved around staple crop production, colonial American economic systems became reliant on long-term commercial credit on both the import and exports sides. For more on this, see Richard B. Sheridan, "The British Credit Crisis of 1772 and The American Colonies," *The Journal of Economic History* 20, no. 2 (Jun., 1960), 168-172, and Jacob M. Price, *Capital and Credit in British Overseas Trade: The View from the Chesapeake, 1700-1776* (Cambridge, Mass.: Harvard University Press, 1980), 1-4 & 96-123. However, the Revolution significantly affected these terms of trade. Despite of the hopes of optimistic American traders, the French insistence on short credits and prompt payment, combined with the inferiority of their manufactured goods and credit institutions, clashed with the Anglophilic nature of American commercial culture than had built up over more than a century. For more on this, see Stanley Elkins and Eric McKitrick, *The Age of Federalism: The Early American Republic, 1788-1800* (New York: Oxford University Press, 1994), 70-72. However, despite the lure of path dependency and consumer tastes, long-term British credits became increasingly difficult to obtain in during the Depression of the 1780s and early 1790s—see Van Cleve, *We Have Not a Government*, 45-46 and Matson & Onuf, *A Union of Interests*, 147-149.

of innovative solutions allowed American merchants to expand their commercial reach despite a chronic lack of capital and credit.

Historians have long attributed the formation of commercial banks including the Bank of North America (1781), Bank of New York (1784), and Bank of the United States (1791), and Alexander Hamilton's financial plan, with the revival of American commercial and public finance after the Revolution.[60] While vital to building America's financial infrastructure, America's first commercial banks primarily facilitated every day commerce rather than providing large capital loans. Early commercial banks issued banknotes and discounted bills of credit, thus helping alleviate liquidity crunches and day-to-day monetary scarcity. However, these banks hardly compensated for the American commercial sector's lack of long-term capital. Put simply, American commercial banks did much more for the settling of existing accounts than facilitating the creation of new commercial ventures.

Hamilton's financial plan played a vital role in American commercial development, but it did so by providing the American economy a form of liquid capital that merchants could use as they saw fit.[61] Hamilton's assumption of state debts reduced state taxes, which alleviated broader

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[60] Financial historians Richard Sylla and Robert Wright have argued for the importance of commercial banks and the Hamiltonian financial program in the establishment of Federalist era economic growth in Robert E. Wright, *Hamilton Unbound: Finance and the Creation of the American Republic* (Westport, CT: Greenwood Press, 2002), 89–126; Wright, *Origins of Commercial Banking in America, 1750-1800* (New York: Rowan & Littlefield Publishers, 2001), 49-92; Richard Sylla, "Forgotten Men of Money: Private Bankers in Early U.S. History," *The Journal of Economic History* 36 (1976): 173–88; Sylla, "Financial Systems and Economic Modernization," *The Journal of Economic History* 62, no. 2 (Jun., 2002), 281-282; and Sylla, "U.S. Securities Markets and the Banking System, 1790–1840," *Federal Reserve Bank of St. Louis Review* 80 (1998): 87–89. Two notable dissentions come from Terry Bouton, "Moneyless in Pennsylvania: Privatization and the Depression of the 1780s," in Cathy D. Matson, *The Economy of Early America: Historical Perspectives & New Directions* (University Park, Pa.: Pennsylvania State University Press, 2006), 218-234, in which Bouton argues that the replacement of state-run land banks with private commercial banks produced a monetary contraction that disproportionately hurt American farmers, and Woody Holton, *Unruly Americans and the Origins of the Constitution* (New York: Hill & Wang, 2007), 65-67, 72-77, & 153-155, who argues that the financialization of the American economy only widened a schism in American society between the urban mercantile elites and the rural proletariat.

[61] For Hamilton's debt assumption plan, see Robert E. Wright, *One Nation under Debt: Hamilton, Jefferson, and the History of What We Owe* (New York: McGraw-Hill, 2008), 132–44; For more detail on Hamilton's conversion apparatus, see Peter M. Garber, *Alexander Hamilton's Market Based Debt Reduction Plan* (working paper, National Bureau of Economic Research, Jan. 1991), http://www.nber.org/papers/w3597.

financial strain and boosted consumer demand. More importantly, Hamilton converted Revolutionary War debt into liquid securities that could secure capital loans for long-term ventures. In the wake of Revolution and Depression, US securities and related equities filled the collateral gap left by the breakdown of colonial commercial relationships with foreign lenders and domestic trading partners. The proliferation of liquid assets that capital holders accepted as security for credit became an essential innovation in the postwar years.

The practice of using the refinanced national debt as security for long-term credit became a vital business practice after the Revolution. A flexible risk mitigation technique, the widespread use of equities and bonds to secure credit facilitated significant commercial development in the unstable 1780s and 1790s. The length to which merchants went to acquire these financial assets underscores their importance to American commercial growth. In February 1785, New York merchant Sampson Fleming endured an arduous process to acquire shares of the Bank of North America. After failing twice, Fleming acquired $2000—between ten and fifteen shares[62]—of Bank of North America stock.[63] In a letter to Thomas Fitzsimons, Fleming acknowledge the potential financial benefits of stock dividends and eventually selling at a higher price. More importantly, however, Fleming told Fitzsimons that he needed to acquire BUS stock for its value as security for commercial credit. Fleming had previously struggled to procure financing for commercial ventures and became convinced that posting BUS stock as collateral

[62] Data on BNA stock prices before 1790 is notoriously unreliable and difficult to find. This estimation for between 10 and 15 shares is made by dividing Fleming's $2000 investment by $148, the first reliable price on record for BNA stock. Unfortunately, this quote is from early 1790. However, $148 is a reasonable estimation considering original BNA subscription prices and later market price data.

[63] Fleming's difficulty in purchasing these BNA shares perfect exemplified the American economy of the 1780s. Fleming approached Constable, Rucker and Company to serve as a broker dude to the lack of liquid securities markets. According to the letter, constable, Rucker, and Company found available shares but were unable to finance the purchase, which Fleming needed to make on credit. Constable, Rucker, and Company eventually drew $2000 dollars on the Philadelphia merchant Haym Solomon to purchase the stock, but Solomon could not clear the transaction before the stock transaction purchase through. Fleming then asked Thomas Fitzsimons to attempt to buy the stock, but he also failed due to a lack of financing. Eventually, Fitzsimmons recommended New York broker Daniel McCormick, who are eventually secured the shares for Fleming.

would secure the credit he needed. While admitting bewilderment at the dynamics of financial markets, Fleming believed that the process would be worth it in the end.[64]

Depositing liquid stock or securities to secure credit became increasingly important in the disparate and diverse early American commercial sector. On December 24, 1789, William Constable reminded Robert Morris that the securities "I sent…to you to deposit as Security for Money Borrowed" made two profit streams possible. The first came as the asset appreciated and the second by securing competitive financing for a profitable commercial venture. Needing financing for a joint-voyage to South America, Morris liquidated similar securities to fund his share of the capital. Constable insisted that Morris not do the same on his behalf, but that he rather post the securities as collateral and leverage the asset while still retaining ownership of them.[65] Constable's leveraging of financial assets became a common practice amongst American merchants by the mid-1790s as the credit system became progressively sophisticated.

As exporters increasingly used financial assets to secure long-term credit, importers began demanding US government bonds as security for wholesale commercial debts as well as long-term credit. The ledgers of *Nicholas Brown & Company* and *Brown and Ives* for 1794-1795 demonstrate a constant flow of US securities. The Browns required that clients deposit US securities or other liquid assets with them for a percentage of retail credit values.[66] Not only did *Brown & Ives* deposit a substantial quantity of US three percent securities "as security for debt due from B&B to AD," but they channeled the quarterly interest payments from the securities

[64] William Constable to Robert Morris, December 24, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[65] Sampson Fleming to Thomas Fitzsimons, February 17, 1785, Sampson Fleming Letter Book, 1782-1790, pg. 12-13, New York Public Library.
[66] While certainty is difficult because of several missing ledger pages, it seems that the Browns took their financial specialization even farther then requiring US securities as collateral for commercial credit. Documents seem to suggest, that the Browns would require the deposit of US securities as collateral and then would offer to manage the interest payments of that collateral for the clients who have deposited them. The documents are unclear as to whether the Browns charged a separate fee for this service or whether it was included in the client's general account.

toward the principal of the credit.[67] This transition from relationship-based book credit to less personal, collateral-based lending made commercial credit both more secure and increasingly flexible in a time of dramatic commercial expansion.

While correspondence does not specifically explain the origins of this practice, one can assume that the difficulty of collecting wholesale debts during the mid-1780s influenced the policy. As the Depression of the 1780s rippled through the American economy, the Browns faced an increasing number of delinquent or defaulting creditors. In letter after letter, *Brown and Benson* decried "the train of disappointments we have experienced from other Quarters."[68] By January 1785, the Browns began refusing goods to individual merchants like Jacob White and firms like *Crary, Fry, & Co.* on credit, due to their inability to make payments.[69] Archibald Crary of the afore mentioned firm repeatedly begged Nicholas Brown for extensions, even offering to pay their account in rum. However, with the price of rum collapsing due to over-supply and deficient demand, the already struggling *Brown and Benson* refused to negotiate. "We once more trouble you with our account Balance in our favor being £23.10.10, which we again request you to send us by first conveyance," Brown wrote to Crary. "More than 2 Mo.s has Elapsed since the Delivery of the Goods at Which time no Credit was expected. [We] have no occasion of any Rum," Brown concluded, "or anything but the Cash Which we expected before this period."[70] The Browns themselves were already delinquent on many of their debts to British creditors, several of which had threatened legal action. As the Depression worsened, *Brown and*

[67] Loose Ledger Sheets, Miscellaneous Letters, April 1795, Brown Family Business Records, Box 24, Folder 6, the John Carter Brown Library at Brown University.
[68] Brown and Benson to Dorrance & Pierce, November 22, 1784, Box 366, Folder 4, Brown Family Business Records, The John Carter Brown Library at Brown University.
[69] Brown and Benson to Jacob White, January 1, 1785, Box 366, Folder 6, Brown Family Business Records, The John Carter Brown Library at Brown University.
[70] Brown and Benson to Crary, Fry, & Co., January 22, 1785, Box 366, Folder 7, Brown Family Business Records, The John Carter Brown Library at Brown University.

Benson began urging its creditors "to make us payment as FAST as POSSIBLE [emphasis in original]."[71] After numerous attempts to compel payment, and with British creditors applying a new round of pressure, *Brown and Benson* sued *Crary, Fry, & Co.* and shut down Crary's wholesale account.[72] While *Brown and Benson* only collected a fraction of the original debt, Benson later admitted that legally compelling payments was the only way the firm "avoided failure."[73]

As growth resumed in the early 1790s, the Browns, and many merchants like them, sought to expand their mercantile business while avoiding the delinquencies they experienced during the Depression. Demanding securities as collateral became the obvious choice—the securities were liquid, retained their value, and had become widely available across the new nation. Thus, re-financed Revolutionary War debt not only helped satisfy the new United States' chronic monetary scarcity, it also opened and stabilized teetering credit markets. While many day-to-day credits retained their pre-Revolutionary book credit character, the posting of liquid collateral for wholesale accounts and long-term capital loans became common practice by the mid-1790s.

Significant advances in American business finance took place outside of credit and debt markets as well. To help stabilize volatile commodity markets—particularly with high-volume agricultural goods like grains—and circumvent scarce money and credit, merchants began using commodity delivery contracts in the late-1780s and 1790s. Merchants contracted massive shipments of goods deliverable on a set date, six, nine, or even twelve months in the future. By

[71] Brown and Benson to Joseph Martin, May 27, 1785, Box 366, Folder 9, Brown Family Business Records, The John Carter Brown Library at Brown University.
[72] Brown and Benson to Crary, Fry, & Co., May 20, 1785, Box 366, Folder 8, Brown Family Business Records, The John Carter Brown Library at Brown University.
[73] Brown and Benson to Crary, Fry, & Co., February 1, 1785, Box 366, Folder 7, Brown Family Business Records, The John Carter Brown Library at Brown University; George Benson to Nicholas Brown, March 16, 1785, Box 44, Folder 10, Brown Family Business Records, The John Carter Brown Library at Brown University.

paying as little as 5 percent down, merchants locked in the terms of a future sale at a fixed price and date of delivery. For example, on November 30, 1789, William Constable wrote, "I believe for our own part that Wheat will be in demand and [I] would gladly contract for 50,000 Bushls deliverable on the 1 March at 8/ currency."[74] Flour merchants like Levi Hollingsworth welcomed these "forward contracts" as they smoothed demand cycles and took the ambiguity out of dispatching their product. While these contracts did reduce profits if prices fell later on, they also put a floor under losses if prices rose. The addition of certainty to firms' revenue and production forecasts allowed better strategic planning and increased investment.[75]

The true innovation in mercantile finance arose as forward contracts became increasingly standardized and tradable. Evidence suggests that some forward contracts began resembling modern futures contracts, which merchants could buy and sell like any other financial asset.[76] William Constable and Robert Hazlehurst referred to "trading in flour contracts" and Constable's ledgers show a flow of "contracts" with large-scale commodity producers as the regular counter-parties.[77] At precisely this time, British financiers were training Robert Morris and other American merchants in the use of futures and options contracts, and the more sophisticated "wager stock," in financial markets.[78] Within years, these contracts had become so common in American financial circles that they played an important role in the financial panics of 1791 and

[74] William Constable to Robert Morris, November 26, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library; William Constable to John Richard Jr., November 30, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.
[75] Levi Hollingsworth to Dorsey Pentacost, August 27, 1791, Levi Hollingsworth Letterbook, 1791-1798, pp. 32-33, Hollingsworth Family Papers, The Historical Society of Pennsylvania;
[76] For more definitional details on forward and futures contacts, see Dick Bryan and Michael Rafferty, *Capitalism with Derivatives: A Political Economy of Financial Derivatives, Capital, and Class* (New York: Palgrave Macmillan, 2006), 40-43.
[77] William Constable to Robert Morris, November 26, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library; William Constable to Gouverneur Morris, December 9, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library; William and James Constable Ledger, Aug. 1, 1791-Dec. 15, 1802, Constable-Pierrepont Papers, New York Public Library.
[78] Joseph Stancliffe Davis, *Essays in the Earlier History of American Corporations*, Vol. 1 (Cambridge, MA: Harvard University Press, 1917), 196-197.

1792.[79] While this subject demands further research, this confluence of evidence suggests that commodity merchants had begun using sophisticated financial contracts to hedge their demand-side risk and smooth volatility.

As American financial markets became more sophisticated, merchants inevitably drifted into more dubious territory. New financial contracts such as flour futures and wager stock became increasingly common, but new financing methods based on borrowing and selling securities also emerged in the post-Revolutionary years. "Short selling" remained rare and largely only arose in times of a financial crisis.[80] However, the practice of borrowing securities for a fixed term and then selling them or posting them as collateral before returning them to their owner became widespread in the credit-starved 1780s and 1790s. After failing to raise funds for several voyages to the Far East in the summer of 1789, William Constable and Robert Morris borrowed vast quantities of state debt between September and November of that year. After amassing a large position in these securities, Constable wrote to Gouverneur Morris in France and asked him to sell the borrowed securities. While Constable assured Morris that he could be "trust[ed] to replace them" before they came to term, Constable's high-risk financing strategy relied on his ability to purchase securities for the same or a lower price before the contract came due.[81] Constable worried about the volatility of security prices, especially as rumors of

[79] Scott C. Miller, ""Never Did I See So Universal a Frenzy": The Panic of 1791 and the Republicanization of Philadelphia," *The Pennsylvania Magazine of History and Biography* 142, no. 1 (Jan., 2018), 22-23.
[80] Short selling allows an investor to bet on a market downturn. The investor borrows a security and sells it at what he believes is a high price. He then repurchases an identical asset on the open market after the price has declined, returns it to the owner, and pockets the difference. There are two critical elements to a successful short sale. First, the investor must and someone to loan him the assets he wants to short. This transaction often includes a fee and a contract stipulating the date on which the asset(s) must be returned. Secondly, the price of that asset must go down—or, at worst, stay the same—after the sale. If the price goes up, the borrower must repurchase the asset at the higher market price, return it to the loaner, and pay the difference out of his pocket. Sometimes, short sellers foresee a market downturn and profit from their prescience. All too often, however, short sellers actively spread rumors, gossip, and false information to drive prices lower.
[81] William Constable to Gouverneur Morris, December 9, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

Hamilton's debt assumption and funding plan threatened to push state debt prices higher. In a December 17 letter to Robert Morris, Constable fretted the incredible risk involved, but insisted that they had no choice. "I know the hazard that attends such an operation but I think it might be required," Constable wrote.[82] In the end, his gamble paid off. While securities prices rose approximately 15 percent, the profits from his Far East voyages more than covered the higher repurchasing costs.

The nexus of financial innovation and commercial specialization also profited those who loaned out securities to men like Constable, Morris, and Hazlehurst. Previous chapters have detailed the Brown family's transition from regional import-export merchants to substantial players in the expanded, post-Revolutionary domestic market.[83] However, in addition to expanding and diversifying its mercantile business, the Browns branched into new American financial markets. While the pre-Revolutionary ledgers of Obadiah Brown and Nicholas Brown show scarce record of financial instrument transactions, the 1790s and early-1800s accounts of *Brown and Ives* reveal extensive trading in what they called "bonds," "notes," "stock," and "certificates."[84] Between December 1793 and May 1794, *Brown and Ives* executed financial instruments trades with at least 62 different counterparties, totaling several thousand pounds.[85] The Browns' financial asset business coincided with the financialization of the American mercantile community as a whole. Records from prominent commercial players such as Jeremiah

[82] William Constable to Robert Morris, December 17, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library
[83] See Chapter 3, pp. 126-128.
[84] Obadiah Brown & Company, Ledger B, 1758-1764, B1220, Brown Family Business Records, The John Carter Brown Library at Brown University; Nicholas Brown & Company, Ledger, 1765-1769, B1090, F6, Brown Family Business Records, The John Carter Brown Library at Brown University.
[85] Brown and Ives, Ledger A, 1793-1801, B1341, pp. 40-41, Brown Family Business Records, The John Carter Brown Library at Brown University.

Wadsworth, Levi Hollingsworth, *Barrell & Company*, Clement Biddle, and Robert Morris demonstrate a movement toward significant engagement in financial markets.[86]

Much more than investing in proliferating financial assets, the Browns became a source for potential asset borrowers like Constable and Morris. A series of ledger pages kept by *Brown and Benson* indicate a thriving business of purchasing and lending out US government securities and stock in various banks. In May of 1792 alone, *Brown and Benson* loaned out approximately $5,880 in US securities, most of them on contracts that required they be returned in six months. While the ledgers do not state the terms of these contracts, the Browns expected approximately $176, or approximately three percent, in fees from these transactions. On top of the three percent commission, borrowers had to cover the government-issued interest on the securities as well. Altogether, loaning US securities provided a return of approximately seven percent. While not a remarkable return on investment, seven percent certainly represents respectable compensation for such a safe asset. *Brown and Benson* charged much higher fees for loaning out more valuable equities like Bank of the United States stock, though it did so less often.[87] In sum, in addition to their commercial diversification and expansion, large post-Revolutionary commercial firms like *Brown and Ives* became critical players in financial markets, often facilitating high-risk, high-reward commercial strategies in the midst of stringent American credit markets.

[86] Jeremiah Wadsworth Account Books, "Jeremiah Wadsworth Papers," Box 30, Folders 1 and 3-5, MS Wadsworth Correspondence, Connecticut Historical Society; Ledger C, Feb. 1777-Mar. 1779, Vol. 13, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger D, Mar. 1779-Mar. 1780, Vol. 14, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger T, 1804-1806, Vol. 29, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Barrell & Company Account Books, 1770-1803, Vol.s 1, 2, & 7, Barrell & Company Business Papers, Baker Library at Harvard Business School; Clement Biddle Letterbooks, 1769-1770 and 1789-1792, vol. 1-2, Clement Biddle Letterbooks (Collection Am.9180), Historical Society of Pennsylvania; Robert Morris Correspondence, 1774-1776 and 1792-1800, Box 2-3, Robert Morris Papers, New York Public Library.
[87] Loose Ledger Sheets, Miscellaneous Letters, May 1792-February 1794, Brown Family Business Records, Box 24, Folder 6, the John Carter Brown Library at Brown University.

Specialization, the Firm, and America's Business Revolution

Post-Revolutionary specialization continued to grow on the production side of the American economy as well. The growing implementation of specialized technology, especially in the realm of commodity processing, boosted the productivity of American commodity output. Large-scale merchants like Levi Hollingsworth advocated for, and implemented, the newest technology from engineers like James Rumsey and Oliver Evans, who created fully mechanized flour mills that dramatically reduced wastage and increased labor efficiency.[88] For example, Levi Hollingsworth's partner and brother, Samuel Hollingsworth, organized fellow flour merchants Joseph Tatnall, Thomas Lea, Thomas Shallcross, and Cyrus Newlin to publish an endorsement of Oliver Evans's work, declaring it "a great saving of waste, labor, and expense." "We therefore," the writers proclaimed, "recommend them as well worthy of the attention of those concerned in the manufacturing of grain into flour."[89] Levi Hollingsworth personally urged Rumsey to "confine your Genius to the perfecting of" new milling technology, suggesting "that object [will] be the one most productive in all the world." While not an engineer himself, Hollingsworth offered detailed feedback on Rumsey's prototypes, writing, "Barthers mill you are safe in but your Piston Mill will lose much of its power by the velocity with which the Piston moves up and down[,] and the gears to bring your power to the millstones will occasion some significant friction."[90] While Americans had never dismissed the promise of new technology, the prospect

[88] Historian Brooke Hunter provides an excellent survey of the technical developments in the flour-milling industry, including a good summary of the life and work of Oliver Evans. See Brooke Hunter, "Rage for Grain: Flour Milling in the Mid-Atlantic, 1750-1815" (Ph.D Dissertation, University of Delaware, 2001), 214-219; For more detailed examinations of Evans and his work, see Greville and Dorothy Bathe, *Oliver Evans: A Chronicle of Early American Engineering* (Philadelphia: Historical Society of Pennsylvania, 1935) and Eugene S. Ferguson, *Oliver Evans: Inventive Genius of the American Industrial Revolution* (Wilmington, DE: Hagley Museum and Library, 1980).
[89] Hunter, "Rage for Grain," 228-229.
[90] Levi Hollingsworth to James Rumsey, April 22, 1790, Levi Hollingsworth Letterbook, 1786-1791, pp. 483-484, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

of new markets at home and abroad, combined with expensive labor and capital, led post-Revolutionary merchants to press even harder for productivity-enhancing technology.[91]

Hollingsworth enthusiastically implemented and tested new technology in mills in his network. "Mr. Few's Mills and machines have all the required motion and continue to perform beyond our most sanguine expectations," Hollingsworth reported to Rumsey in January of 1789. The new designs "have not cost six pence repair or had a nail added or diminished since they were first set in motion and are beyond all doubt the most complete power ever gained by waterworks," Hollingsworth happily relayed. Hollingsworth believed that the new designs produced "near three times the power of the best overshot wheel" and at least doubled the power of the best waterwheels currently on the market. Hollingsworth became so enamored with the new technology that he became "convinced that in ten years all water works in this part of America will be worked on these principles."[92] Adamant that he be a first mover in new milling technology,[93] Hollingsworth wrote that he had arranged the construction of "three [new mills] for Manufacturing Wheat Flour…and one saw Mill" on Rumsey's "improved plans" and intended to build more in the Spring.[94]

Despite his interest in new water power technologies, Hollingsworth viewed the application of steam power to milling and other labor-intensive industries as vital to American

[91] Colonial milling, like all colonial manufacturing, required extensive human labor to power the mill. Historian Brooke Hunter notes that automatic mills like those pioneered by Oliver Evans "did not change how flour was produced, but rather how the grain was moved from one process to the next inside the mill by the introduction of a series of new machines." Whereas human hands, backs, and arms hoisted, carted, poured, and raked the grain and flour in the colonial era, by 1791 Evans's machines performed the same tasks through an automated and water-powered process. For an excellent description of this process, see Hunter, "Rage for Grain," 217-220.
[92] Levi Hollingsworth to James Rumsey, January 22, 1789, Levi Hollingsworth Letterbook, 1786-1791, pp. 448-449, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[93] The term "first mover" refers to an individual or firm that gains a competitive advantage by being the first to introduce a new product, process, or technology into the market. By being a "first mover," a merchant or firm achieve considerable productive benefit as well as earning considerable name recognition. In many cases, the first mover retains an advantage in the market place so long as a competitor does not introduce a new process or product.
[94] Levi Hollingsworth to James Rumsey, January 4, 1789, Levi Hollingsworth Letterbook, 1786-1791, pp. 442-443, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

commercial progression.[95] In addition to his general interest in applying steam power to everything from manufacturing cloth to "watering lands for Rice meadows," Hollingsworth viewed the employment of steam power in milling as a potential game changer. Hollingsworth long advocated for more-efficient water power systems, but he understood that water flows could vary with weather and entail extensive legal battles. Water power also required extensive capital investment and local engineering talent to build dams, construct channels, and divert streams. Thus, while pressing forward with better water-power technology in the short term, Hollingsworth emphasized that steam technology "appears so simple and cheap in [its] construction" that it could alleviate the capital and labor constraints on American production.[96]

Others also recognized the disruptive power of capital and labor-saving technology. In November 1789 William Constable dispensed a clerk to see prototypes of steam-powered flour mills. While not a flour producer, Constable and other merchants understood that more efficient production translated into cheaper products of higher quality. Deficient in labor and capital, America's comparative advantage in agricultural production faced considerable obstacles in moving up the value chain.[97] New technology offered a way around capital and labor scarcity, allowing producers and merchants to capture increasing levels of value-added. Constable looked for value anywhere he could find it and when his aide reported back on the immense potential of steam-powered milling, Constable began exploring how to get into the flour industry.[98]

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[95] Important to note that LH never articulated an "industrial" vision, but rather saw steam and productivity-enhancing innovation as part of the business/commercial process.

[96] Levi Hollingsworth to Richard Spaight, June 18, 1788, Levi Hollingsworth Letterbook, 1786-1791, pp. 264-265, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

[97] The "value chain" refers to the pyramid of value-added by which businesses or industries move raw material to finished, marketed goods. The American comparative advantage in raw material production meant that it stood relatively low on the value chain, while industrial nations like Great British held advantages in higher value-added goods higher on the value chain.

[98] William Constable to Gouverneur Morris, November 14, 1789, William Constable Letter book, 1782-1790, Constable-Pierrepont Papers, New York Public Library.

While the widespread adoption of new milling technology did not happen overnight, the investments put in by merchants like Hollingsworth resulted in a vastly improved milling sector by the early 1800s. Larger and more efficient water-power systems allowed merchant millers to dramatically expand production by adding more and larger millstones to their production lines. By the late 1790s, large-scale millers ran four to five pairs of seven-foot millstones capable of producing over 150 barrels of flour every day. By contrast, large colonial mills produced a mere 25 barrels a day.[99] The prospect of steam power only increased the productive capacity of new mills by reducing off days due to adverse water flows. Writing of new steam-powered mills in early nineteenth-century Baltimore, Brooke Hunter claims that the new mills "had a grinding capacity of one-hundred-fifty-thousand bushels of wheat annually, and together could potentially produce more flour than" twelve of the largest water-powered mills in America.[100]

While technological specialization certainly became a part of American mercantile firms, commercial specialization played an equally important role in the growth and development of American trade. The employment of specialized residential agents in foreign ports became a critical element of long-distance American commerce. In the colonial era, most American merchants relied on local consignment agents and ship captains to provide information on goods and markets. Historian Stuart Bruchey argues that this indirect process of communication added considerable time and cost to the transaction process, thus making American goods less profitable, and in an open market, less competitive. Bruchey argues that direct correspondence between a residential agent and a firm owner could have reduced communication times by nearly

[99] Hunter, "Rage for Grain," 235.
[100] Colleen F. Raffterty, "To Establish an Intercourse Between Our Respective Houses: Economic Networks in the Mid-Atlantic, 1735-1815" (Ph.D Dissertation, University of Delaware, 2012), 206; Brooke Hunter, "Wheat, War, and the American Economy during the Age of Revolution," *The William and Mary Quarterly* 62, no. 3 (Jul., 2005): 516.

50 percent.[101] As post-Revolutionary merchants became increasingly concerned with market integration and speed of information, large firms began posting residential agents in ports from the West Indies to northern Europe and the Far East. Baltimore merchant Robert Oliver placed residential agents in several West Indian ports directly after the Revolution, as did Robert Morris and *J. and J. Amory* of Boston. While calculating a rate of savings remains difficult, the increasing deployment of dedicated residential agents throughout the world indicates their usefulness to firm owners.

Similar local representation took place as American firms began to integrate port cities across the new United States. As discussed in Chapter 3, American merchants like Robert Morris and Nicholas Brown expanded their operations to multiple American markets after the Revolution.[102] With independent but fully integrated firms operating in tandem in New York, Philadelphia, Baltimore, and Charleston, the Morris network employed the advantages of residential agents in the vast American domestic market. In a March 17, 1790 letter to the Dutch merchant house *Van Straphorst & Hubbard*, Gouverneur Morris, a partner of Robert Morris, extolled the integration effects of local agents acting on behalf of Van Straphorst in America. "I believe you have every reason to be satisfied with your present Correspondents in America," Morris wrote to Van Straphorst. We "will [demonstrate] that the productions of the southern parts of America can be shipped to equal, if not greater, advantage by our Houses in New York or Philadelphia…[than any other] in the country. This arises from the easier disposition of bills and the greater mercantile performance of every kind[,] added to the knowledge of local circumstances which, varying with every season, arises from the nature of things to be unknown

[101] Stuart Bruchey, "Success and Failure Factors: American Merchants in Foreign Trade in the Eighteenth and Early Nineteenth Centuries," *The Business History Review* 32, no. 3 (Autumn, 1958): 283-284.
[102] See Chapter 3, pp. 155-161.

to houses in Europe."[103] Here, Morris elaborates how his dispersed network of integrated firms combined the benefits of local agents and big city merchant houses. The local expertise of their Charleston house would procure the best "southern" goods at the best prices while their northern operations would secure financing on better terms than Hazlehurst in South Carolina. Just as American firms had dispatched specialized agents to foreign ports, Morris argued that he and his partners could combine regional specialties to supply Van Straphorst with superior products at a better price.

As American merchants tested and instituted new procurement strategies, they also experimented with new business structures. While joint stock companies became increasingly common for chartered firms requiring massive amounts of capital, the colonial-style partnership remained the foundational unit of American mercantile firms well into the nineteenth century. However, the way in which these firms organized themselves, dealt with suppliers, and grew over time varied greatly. As they raced to capitalize on new opportunities at home and abroad, American firms experimented with vertical integration, horizontal integration, and an amalgamation of the two to reduce transaction costs and increase market share. The post-Revolutionary era witnessed a massive experiment in corporate structuring in which merchants like Nicholas Brown, Levi Hollingsworth, and Robert Morris all tried different ways to arrange their commercial operations and grow their businesses.

In several elements of their business, the Browns employed vertical integration to restore their competitive position in the wake of Revolutionary disruptions.[104] Wartime embargos and

[103] Gouverneur Morris to Van Straphorst & Hubbard, March 17, 1790, Box 1, 1788-June 1789, Constable-Pierrepont Papers, New York Public Library.

[104] Vertical integration refers to the process in which a company expands its business to cover multiple stages in the production process. In many cases this strategy includes merging production and distribution, but it can also include everything from the procurement of raw materials, financing of production, the processing of a good, product marketing, and distribution. The goal of their vertical integration is to eliminate transportation costs, improve efficiencies and reduce turnaround time by employing economies of scale and information symmetry.

occupations, combined with the closing of British ports in the West Indies, devastated the New England fishing industry. The dispersion of whalers and fishermen in Nantucket and Newport with whom Nicholas Brown contracted during the late-colonial era left *Nicholas Brown & Company* and then *Brown and Benson* with few reliable suppliers upon independence in 1783.[105] While postwar embargos made large-scale dried fish exports to the West Indies difficult immediately after the Revolution, the Browns expected a market rebound when relations with Britain improved. Faced with few external sources with which to partner, the Browns attempted to bring the dried fish part of their business in-house. Nicholas Brown decided to directly employ several fishermen including Marton Watson of Marblehead, with the intension of processing and drying the fish internally as well. Brown capitalized the venture by buying fishing vessels and paying the fishermen directly.[106] Faced with insufficient headmatter for his Spermaceti candle works and iron ore for his Hope Furnace, Brown pursued a similar strategy of bringing raw material procurement under the same roof as production.[107] As a result, Brown controlled the production process from fishing to processing to distribution, allowing him to structure procurement and avoid the vagaries of buying dried fish on the open market.

Faced with similar postwar disruptions, Levi Hollingsworth pursued a completely different firm structure than the Browns. Whereas Nicholas Brown tried to bring most production elements of his dried fish business under vertical lines of command, Levi Hollingsworth created a horizontal network of farmers, millers, and flour producers. Hollingsworth exploited space in the flour market, and strong demand for its product, to build a vast network of farmers, millers,

[105] James B. Hedges, *The Browns of Providence Plantations: The Colonial Years* (Providence, RI: Brown University Press, 1968), 309-310.
[106] Marton Watson to Brown and Benson, January 17, 1784, Box 365, Folder 5, Brown Family Business Records, The John Carter Brown Library at Brown University
[107] Hedges, *The Browns of Providence Plantations,* 312-313.

laborers, rivermen, coopers, and export merchants. Hollingsworth became "the link between country producers and transatlantic markets," expanding his business network by nearly half to include "fifty merchant millers and over eighty clients serviced by dozens of suppliers and shallopmen" between 1785 and 1791.[108]

Rather than finance, build, operate, and distribute all the flour-making capacity needed to accommodate expanding demand, Hollingsworth acted as a conduit between independent producers, financiers, and market makers. Hollingsworth owned several mills close to his home bases of Philadelphia, Head of Elk, Maryland, and Baltimore at which he tested new technologies and built market clout. However, Hollingsworth viewed horizontal expansion as vital to commanding "the Disposal of a great Proportion of the Flour coming to this Market."[109] Hollingsworth understood that vertically integrating the vast post-Revolutionary flour industry would require far more fixed capital than he could afford. Rather, he sought enough influence over the means of production and distribution that he could derive the benefits of ownership without the massive capital outlay. In other words, Hollingsworth built his network to *control*, rather than *own*, "a great proportion" of the flour capacity in the mid-Atlantic.

Hollingsworth achieved his prominence in the mid-Atlantic flour market by avoiding the risks of direct ownership while serving as the input and output connection for scores of independent producers. Hollingsworth constantly surveyed new mill sites and scouted active mills for sale from central New York to Southwest Virginia and Eastern Kentucky.[110] However, rather than buying and operating the mills himself, Hollingsworth served as a financial conduit

[108] Hunter, "Rage for Grain," 147.
[109] Levi Hollingsworth to Hankinson & Barrow, March 17, 1787, Levi Hollingsworth Letterbook, 1786-1791, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[110] Levi Hollingsworth to Jasqesse Voohese, November 1, 1791, Levi Hollingsworth Letterbook, 1791-1798, pg. 50, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

between interested "locals" and credit sources in Philadelphia. In so doing, Hollingsworth built credit, information, and technology channels through which he gained considerable influence. Hollingsworth then played a similar role on the output end—his agents distributed processed flour to markets in Philadelphia, Baltimore, and foreign ports. Hollingsworth also maintained strict quality standards from his producers while procuring new equipment and information for members of his network. In turn, those producers could expect a higher sale price from having Hollingsworth's seal of approval.[111] In sum, Hollingsworth built a horizontal conglomerate based on debt and market access. In so doing, he exploited economies of scale to reduce costs, control product quality, and command prices at the top of the market.

While Hollingsworth certainly provided value to clients and associates, his market reach allowed him to cudgel those that stood in his way. On several occasions, Hollingsworth and his agent Solomon Maxwell used their market power to drive out potential competition. In late 1786, a "Mr. Potts," serving as an agent for *Willing, Morris, and Swanwick*, began trying to acquire flour in the area surrounding Wilmington, Delaware. Hollingsworth viewed this as threat to his market supremacy in the region, and by mid-December, Maxwell contracted much of the area's excess capacity in an attempt to make Potts—and thus *Willing, Morris, and Swanwick*—come to him. However, the plan failed when Potts found two millers—Caleb Emblen and Thomas Canby—to sell him 500 barrels of flour. While Emblen and Canby likely did not know of Maxwell's attempt to corner the flour supply, Maxwell retaliated against the two millers and then froze Potts out of the market. Maxwell used Hollingsworth's levers of credit and distribution to persuade distributors not to deal with Emblen and Canby, while preventing locals from accepting

[111] Hunter, "Rage for Grain," 148-150.

their flour onto Delaware River sloops for shipment.[112] Maxwell's strong-arm tactics, relayed to Hollingsworth in several letters, made clear that Hollingsworth would punish anyone who attempted to change his commercial superiority in the region.

Hollingsworth's market power made crossing him a serious risk and one most farmers and millers generally refused to take. "Being frozen out of Hollingsworth's network," historian Pierre Gervais writes, "meant losing access to a range of services, to easy credit, and potentially losing money by having to use a less savvy agent…[Furthermore,] breaking with [Hollingsworth] could lead to a tarnished local reputation and loss of standing. Overall, it would have been both financially and socially irrational to cross a powerful and influential figure such as Hollingsworth."[113] In a market as deep and disparate as that for early American flour, only a horizontal business structure could have provided Hollingsworth such market power.

Whereas Levi Hollingsworth created a loosely connected network of flour producers through which he commanded a significant share of market capacity, Robert Morris built a deeply integrated network of independent yet inter-reliant firms. In many ways, the Morris network exemplifies the modern definition of horizontal integration. All firms in the Morris network operated in the mercantile sphere, and thus at the same stage of production. Morris did not aim to control every step of the production process, but rather he cut costs by streamlining information flows and increasing commercial efficiency. Unlike Hollingsworth, Morris owned considerable shares in each subsidiary firm—*Constable, Rucker, & Company* in New York, *Willing, Morris, & Swanwick* in Philadelphia, *Tench Tilghman & Company* in Baltimore, and

[112] Solomon Maxwell to Levi Hollingsworth, December 27, 1786, Box 32, Folder 4, Hollingsworth Family Papers, The Historical Society of Pennsylvania; Ledger K, Feb. 1785-1786, Vol. 20, Hollingsworth Family Papers, The Historical Society of Pennsylvania.
[113] Pierre Gervais, "Market Manipulation, the 1780s Way: What a Letter to a Flour Dealer Tells Us About the Early Modern Political Economy," *Common-place.org* 16, no. 2 (Winter 2016), http://common-place.org/book/market-manipulation-the-1780s-way-what-a-letter-to-a-flour-dealer-tells-us-about-the-early-modern-political-economy.

Robert Hazlehurst & Company in Charleston—and many of his partners owned shares in each other's firms. As a result, the integration of Morris-aligned firms took on a more formalized interlocking partnership structure, rather than the network-based, influence-centered functionality favored by Hollingsworth. Whereas Hollingsworth used the passive forces of debt and market access to link flour producers, Morris created legal and structural linkages between his firms. As discussed in Chapter 3, Morris recognized the vast potential of the integrated American domestic market and built an interlocking set of specialized firms to eliminate inefficiencies that emanated from over a century of market isolation.

In a sense, Morris created an entirely new product for his clients. Morris offered specialized expertise in numerous American markets, and thus numerous commercial sectors. While American cities did not obtain full-scale industry specialization until well into the nineteenth century, cities did begin gaining comparative advantages in the goods produced in their region by the early-1790s.[114] For example, Philadelphia and Baltimore held a comparative advantage in flour, while Charleston specialized in rice. Morris centralized information flows, telling *Henry Rucker & Company* of Amsterdam that subsidiary firms exchanged information on an almost daily basis.[115] Thus, by corresponding with Morris or one of the subsidiary firms, a client had access to up-to-date information on markets and products in at least four of the five major mercantile centers of the United States. Streamlined information flows not only eliminated

[114] While Eric E. Lampard, "The Evolving System of Cities in the United States: Urbanization and Economic Development," in Harvey S. Perloff and Lowdon Windo Jr., eds., *Issues in Urban Economics* (Baltimore: The John Hopkins University Press, 1968), 81-126, argues that American cities did not achieve absolute sectoral specialization until the mid-nineteenth century, many of America's primary seaports gained a specialization in the products of their region by the early to mid 1790s. For example, Boston and Philadelphia specialized in shipbuilding, Philadelphia and Baltimore in flour production and export, New York in securities trading, and Charleston in rice and indigo production and export.

[115] Robert Morris to Henry Rucker & Sons, December 6, 1785, Box 1, Folder "1785," Constable-Pierrepont Papers, New York Public Library.

information asymmetries, but also reduced the time that clients spent evaluating perspective destinations for their products.

The benefits of this horizontal integration went even beyond those of residential agents in foreign ports. More than simply providing unified information to distant clients, Morris centralized mercantile fees. When dealing with the Morris network, the client paid a flat 2 percent commission no matter how many subsidiary firms became involved with their transaction. More specifically, a European client would ordinarily pay a separate commission for planks procured in Philadelphia, flour purchased in Baltimore, and rice acquired in Charleston. However, when dealing with Morris the client only paid a uniform 2 percent commission on all goods included in a particular order. Perhaps even more appealing when selling goods in the United States, the 2 percent fee "guarantee the debt arising on the sale of Consignments made by" subsidiary firms.[116] Morris's integration of geographically dispersed mercantile firms also allowed clients to take advantage of differing prices in different cities. If a client needed 1,000 barrels of flour, Morris would not simply inform them of the lowest price, he would procure the flour and combine it with goods procured in other cities. Since each firm carried the ability to finance its own operations, clients received the benefits of unified information while taking advantage of amplified financing power and local procurement contacts.

Morris's horizontal integration strategy provided unique value to clients on several levels. First, it provided a vast array of market and product information. Even compared to firms with residential agents in numerous cities, the rate of information flow between Morris's firms provided current information unlike any other firm of its day. Second, Morris lowered clients' transaction costs. Not only would dealing with Morris's centralized structure reduce the need for

[116] Ibid.

correspondence with every American market, but it reduced the commissions and fees paid to local agents. Due to the scale of Morris's operations, associated firms could negotiate lower prices for goods and local services. While some of the margin would indeed profit the firm, a significant proportion of the savings would be passed on to clients. Finally, the constant movement of goods and information between subsidiary firms would significantly reduce transportation costs. Again, economies of scale allowed Morris-aligned firms to combine shipments from various clients and negotiate lower freight costs. Despite the reach and commercial power of Morris's network, their object remained cost reduction and not market control. While Morris-aligned firms undoubtedly benefited from economies of scale, the American import-export market remained too disparate and fractured for Morris to establish any kind of monopoly.

In evaluating the three experiments in firm structure represented by Nicholas Brown, Levi Hollingsworth, and Robert Morris, the evidence suggests that Morris's horizontal integration strategy best fit the post-Revolutionary American economy. The disparate structure of the American market, combined with the primary and secondary nature of American products, meant that much more value could be found in streamlining information flows and lowering long-distance transportation costs. Because the United States would not begin producing complex industrial goods in large volumes for nearly half a century, the cost reductions provided by vertical integration simply could not cover the necessary capital outlays.[117] As a result, the Browns abandoned their in-house dried fish production and significantly reduced their candle making and iron operations by the late-1790s. Levi Hollingsworth's networking of independent

[117] Vertical integration works best when you can bring many different processes under one roof and thus reduce production inefficiencies. In the early Republic, however, production processes remained relatively simple and thus there were not enough layers of inefficiency available to justify the cost of vertical integration.

flour producers, while maintaining ownership sufficient to control a substantial part of the market, served him well. However, it is unlikely that Hollingsworth's strategy would succeed in a sector with a lower volume than flour. The high demand for American flour, combined with Hollingsworth's existing influence, allowed him to sustained profitability even as new competitors came into the market. In the end, Robert Morris's horizontal integration strategy proved the most innovative and most successful. While speculation in land eventually drove Morris into bankruptcy, his mercantile operations, especially those in the domestic market, remained strong throughout the 1790s and early-1800s.[118] Morris's construction of an interlocking network of firms that reduced the costs inherent in the growing domestic market proved a remarkable accomplishment.

Conclusion

The two decades after the American Revolution witnessed a dynamic transformation of American business practices. Rather than a progressive "revolution," the early Republican period embodied a laboratory in which thousands of merchants experimented with different solutions to the opportunities and problems posed by independence. Anticipation of new markets across the globe, as well as an increasingly integrated domestic economy, spurred American merchants to overhaul many of their methods of business. In some cases, Americans felt the increased demand for their foodstuffs and expanded their businesses to meet that demand. Yet in many others, American merchants like William Constable and Levi Hollingsworth preempted exogenous demand shocks and began building their business to meet the foreseen but non-specific opportunities of independence. In other words, most American merchants did not fully

[118] Richard J. Purcell, *Thomas Fitzsimons: Framer of the American Constitution* (Dublin, Ireland, 1938); Ellis Paxton Oberholtzer, *Robert Morris: Patriot and Financier* (London: The Macmillan Company, 1903), 151-179 & 338-357.

understand the opportunities of independence. They simply surmised that opportunities would indeed arise and aimed to be ready when the demand for American trade arose. Yet the opportunities of independence also came with inherent disadvantages. Old world merchants had access to deeper capital pools, long-standing commercial relationships, and centuries of experience in global trade. Americans suffered from systemic instability, both overseas and at home. The Depression of the 1780s, politico-economic uncertainty and interstate trade barriers, foreign embargos of vital ports, and monetary and credit scarcity all threatened to dissolve the opportunities of independence before they materialized.

Thus, facing both great potential and great uncertainty, the American commercial laboratory produced a remarkable array of solutions. While not universal, several trends became widespread amongst the American mercantile community. Firstly, Americans took more risk. "Productive risk-taking was the rightful activity of a free man," Jonathan Levy writes, and post-Revolutionary Americans saw themselves as the freest men in all the world.[119] They sailed earlier in the season, speculated on commercial and political and economic volatility, created new and complex financial instruments, and experimented with innumerable business structures. Far from a self-laudatory national mythos, Europeans like James Phyn widely recognized American's appetite for risk.

Yet in addition to taking these risks, the American risk mitigation industry boomed. American merchants began intentionally diversifying their portfolios by purchasing real estate and financial assets. As safe and stable financial assets like US securities became widely accessible, merchants like the Browns of Providence developed collateral systems to offset the risk of failed remittance and creditor default. Even more importantly, specialized insurance and

[119] Jonathan Levy, *Freaks of Fortune: The Emerging World of Capitalism and Risk in America* (Cambridge, Mass.: Harvard University Press, 2012), 16.

commercial consulting companies helped American merchants understand, isolate, and hedge their risk. Increasingly specialized risk mitigation allowed merchants to identify the risks posed by a specific venture and, thereby, better evaluate if they wanted to take them at all. In short, America's post-Revolutionary risk-mitigation industry did not arise to prevent losses, but rather to allow merchants to better understand the level of risk they could take.

In addition to taking and mitigating more risk in the post-Revolutionary era, American business experienced a rapid specialization in finance, commercial systems, and business practices. The ranks of "middlemen" such as merchants, grocers, and brokers proliferated in American cities, and insurers like John Delafield began specializing in and specific regions and even specific insurance products. As firms expanded their business to other cities in other regions of the world, they employed increasingly specialized mercantile experts to multiply the effects of their scarce capital and resources. Firms specialized even as they diversified, as improved information channels and investment mechanisms allowed them to expand their operations while increasing productivity.

In many cases, reformations of firm structure prepared the ground for the expansion of American businesses. Revolutionary disruptions and the promise of new markets incentivized investments in new technologies, but it also incentivized the firms themselves to change. Firms like *Brown and Benson* tried to vertically integrate all elements of important, prewar businesses. The Browns' structural reorganization failed to sustain the capital outlay or reduce costs enough to make such reforms a sustainable model. Levi Hollingsworth and Robert Morris built networks of horizontally integrated businesses, which better complemented the disparate American commercial sector. In contrast with the Browns, Morris and Hollingsworth reduced their transaction cost significantly by streamlining information flows and leveraging economies of

scale. These reformations of firm structure increased productivity and made them more competitive in global markets.

In understanding the importance of early American business development, one must focus on the processes of innovation in times of uncertainty rather than the final outcomes. The post-Revolutionary business community acquired common attributes, including an increased appetite for risk and a knack for integrating the benefits of specialization. However, American merchants' willingness to experiment defined them as a group far more than any unifying practices. It is true, post-Revolutionary economic growth would likely have remained low for an extended period without the increased demand stemming from European conflict. However, Americans' experimentation with productivity-enhancing firm structures and speculations allowed them to take advantage of the demand boom. Opportunities do not guarantee outcomes, and despite constant failures American businesses adapted to the uncertain post-Revolutionary world enough to solidify its place as an important commercial player.

Conclusion

Neither Predestined, Nor Accidental

The embargo of 1807–1808 encapsulated the commercial volatility of the early Republic. President Thomas Jefferson and his Secretary of State James Madison originally conceived of the embargo to combat seizures of American ships by the British and French navies. The Embargo Act of 1807 combined with the non-importation acts of 1806 and 1808 prohibited American exports and place strict limits on imports. Jefferson and Madison hoped to starve Britain and France of natural resources. In return for the restoration of commerce with America, the offending power would need to ensure the safety of American sailors and vessels. However, as with almost everything Jefferson did, the Embargo had an ideological element. The Sage of Monticello hoped to prove that nations could resolve their disagreements without war, even if coercion became necessary. Jefferson and Madison hoped to show the world that enlightened reason and Republican virtue could overcome the Royal Navy and French fleet.[1]

The two Virginians could not have been more wrong. Not only did the Embargo collapse barely a year after its adoption, but the commercial ban imposed massive penalties on American citizens. The federal government required hefty bonds for all ships engaging in coastwise trade and instituted an onerous licensing scheme for internal commerce. When Americans circumvented the regulations by trading across the Canadian border at Lake Champlain and northern Maine, Jefferson declared the areas in insurrection. To quell the supposed unrest, Jefferson dispatched Army regulars to the border to clamp down on unauthorized trade. Meanwhile, Congress employed the necessary and proper clause to "grant the President extra

[1] Dumas Malone, *Jefferson the President: Second Term, 1805-1808* (Boston: Little, Brown, & Company, 1974), 488-490.

ordinary powers to capture and punish any violators, including powers that were certainly contrary to the search and seizure provisions of the fourth amendment." In no uncertain terms, historian Gordon S. Wood writes, "the United States government was virtually at war with its own people."[2]

The Embargo decimated the American import-export industry. The value of total exports collapsed from $108,343,000 in 1807 to just $22,431,000 in 1808, a more than 80 percent decline. While illicit exports provided marginal remuneration, Jefferson's clampdown of the United States's commercial engagement with the world decimated the American foreign sector. Imports also declined by nearly 60 percent.[3] Entire industries, many of which emanated from New England, including shipbuilding, insurance, and commercial voyage outfitting collapsed.[4] Yet despite all odds, the American economy grew in 1808. As shown in Figures 1.7 and 1.8, the domestic sector that shouldered economic growth throughout the 1790s and early 1800s drove the American economy forward in 1808, despite the collapse of the export and invisible earnings sectors. In more ways than one, the Embargo solidified the domestic economy's role as the driver of American economic growth in the early Republic.

Despite Jefferson's breathtaking policy miscalculation, merchant-entrepreneurs successfully adapted to the volatility and crisis arising from the Embargo. In a remarkable April 27, 1808 letter to Morgan Gony, Levi Hollingsworth encapsulated merchants' ability to adapt to their commercial environment. First, Hollingsworth described the onerous regulations imposed by the Jefferson administration. Hollingsworth reported that he did not dispatch a shipload of

[2] Gordon S. Wood, *Empire of Liberty: A History of the Early Republic, 1789-1815* (Oxford: Oxford University Press, 2009), 655-656.
[3] Douglass C. North, "The United States Balance of Payments, 1790-1860," in NBER, *Trends in the American Economy in the Nineteenth Century* (Princeton, N.J.: Princeton University Press, 1960), 588-594.
[4] Wood, *Empire of Liberty*, 655.

lumber for export, noting, "in consequence of the Embargo every description is unsalable." However, Hollingsworth subsequently showed the ways that American merchants had already begun reshaping their businesses to compete in the new commercial landscape. "The Effects of the Embargo is severly [sic] felt; but the distress [brought on] by it is not yet great among the trading people [of Philadelphia]," Hollingsworth wrote. Merchants had already begun looking toward American consumers, Hollingsworth reported, by moving away from export goods such as flour and lumber and toward the "molasses, sugar, [and] coffee" desired by domestic markets. Hollingsworth also described a plan to convert the unsellable lumber into shingles for domestic homebuilding before describing the riparian avenues through which he would distribute the shingles throughout the mid-Atlantic region.[5] Of course, Hollingsworth's strategy did not help the New England export industry. Hollingsworth's plan would also need to change later in the year when the Jefferson administration imposed even more strident import restrictions. Nonetheless, Hollingsworth's letter provides a glimpse into how American merchant entrepreneurs adapted to yet another instance of commercial volatility. In so doing, those merchants propelled the American economy to significant economic growth in spite of the complete collapse of the export industry.

Hollingsworth's plan to withstand the Embargo relied on several major changes to American economic institutions, market structures, commercial networks, and business practices that took place over the previous three decades. The American economy experienced a systemic reformation between 1775 and 1807 that changed the structure of the economy and how merchants operated within it. In response to the Depression of the 1780s and Panics of the 1790s, interstate trade barriers came down, financial markets grew deeper and more stable, and legal

[5] Levi Hollingsworth to Morgan Gony, April 27, 1808, Levi Hollingsworth Letter Book, May 1806-July 1811, Hollingsworth Family Papers, The Historical Society of Pennsylvania.

structures arose to encourage entrepreneurial behavior. At the same time, government policy, combined with the ambition of traders and merchants, connected American cities and their rural hinterlands in an increasingly integrated national market. Denser commercial networks spread much-needed investment and expertise around the expanding United States, while firms and individuals changed their operations to specialize and become more productive. In so doing, American merchants built businesses at took advantage of better information and expertise to hedge risk, allocate capital, and capitalize on the opportunities that came with commercial volatility. While significant continuities existed between 1760 and 1807, the fundamental structure of many businesses, and the American economy as a whole, had changed dramatically.

In the end, the development of the American economy relied on a complex mixture of contingent forces. The new United States possessed an immense natural bounty, where seemingly limitless forests, waterways, and farmland reduced the potential costs of energy, transportation, and commodity production. Nonetheless, United States sorely lacked the labor, human capital, and financial capital to develop its natural resources into economic growth. In terms of labor, the United States imported millions of human beings to work and its fields and factories. In a purely economic sense, these enslaved people represented mere inflows of labor and capital, but this fact can never erase the moral travesty that played such a critical role in America's economic development. Yet even amidst this human trafficking, American labor remained expensive. Capital remained even more scarce. Just as the United States possessed natural advantages it also had significant deficits. If the new Republic would fulfill its economic potential, entrepreneurs and business men had to overcome these disadvantages.

Just as natural resources did not guarantee American economic primacy, its cohort of masterful policymakers did not assure commercial ascent. While the United States possessed a

remarkable cohort of political and economic leaders, it was the new nation's vibrant private sector to turn their visions into real economic development. Thomas K. McCraw rightly argues that "For the first two generations of U.S. history, [Hamilton and Gallatin] and others like them influenced national financial policies more powerfully than did [anyone else]."[6] However, without merchants like Levi Hollingsworth, William Constable, Nicholas Brown, Jeremiah Wadsworth, and Robert Morris to connect their policy frameworks to real-life goods, capital, and markets, the brilliant ideas of Hamilton and Gallatin would have drifted into obscurity.

Despite their importance, America's cohort of merchant entrepreneurs routinely failed much more than they succeeded. Bankruptcy, insolvency, and general economic malaise permeated the early Republic. While great entrepreneurs, Robert Morris, William Constable, Thomas Fitzsimmons, John Pintard, John Nicholson, Jeremiah Wadsworth, William Duer, Alexander Macomb, and John Chaloner all died in bankruptcy or significant financial distress. Nicholas Brown and Levi Hollingsworth avoided such massive setbacks at the end of their life, but both experienced numerous personal financial calamities as they built their empires. In many cases, America's great merchant-entrepreneurs failed to create the personal success that they as a group brought to the nation at large.

Thus, if not abundant natural resources, brilliant policy, or genius entrepreneurs, what produced America's rapid economic ascent from the ashes of Revolution and depression? As always, the answer is complicated. Nonetheless, this study has shown that, in the words of Thomas M. Doerflinger, a true "entrepreneurial efflorescence" gripped the United States after its Revolution. Independence from Great Britain stirred a hive of entrepreneurial activity, a constant commercial buzzing in which merchants felt a distinct ability to try new ideas in new places.

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[6] Thomas K. McCraw, *The Founders and Finance: How Hamilton, Gallatin, and Other Immigrants Forged a New Economy* (Cambridge: Harvard University Press, 2012), 7.

Less artfully put, the merchants of the early United States came up with and tried to implement new ideas over and over and over again. Many of their attempts failed and failed miserably. However, over time a Darwinian process filtered out the destructive ideas and the good concepts slowly became part of a broader business ecosystem. Despite their individual trials, this cohort of early American merchant-entrepreneurs built a vibrant commercial laboratory during the 1780s and 1790s. In this laboratory, the necessity and opportunity of crisis, combined with America's resource base and developing business culture set the stage for America's industrial revolution. While America's eventual commercial power was not predestined, neither was it an accident. The human agents that created America's Merchant's Republic made their economic future, and in so doing shaped ours as well.

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Appendix I

SUMMARY OUTPUT--Relationship between # of Nodes and Graph Density

Regression Statistics	
Multiple R	0.5847944
R Square	0.34198449
Adjusted R S	0.28216489
Standard Err	97.1023447
Observations	13

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	53904.1736	53904.1736	5.71693111	0.03579736
Residual	11	103717.519	9428.86534		
Total	12	157621.692			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	212.033775	43.0120469	4.92963692	0.00044992	117.364897	306.702652	117.364897	306.702652
0.005	-2903.73	1214.43633	-2.3910105	0.03579736	-5576.6863	-230.77365	-5576.6863	-230.77365

SUMMARY OUTPUT----Relationship between Network Density and Average Connection Value

Regression Statistics	
Multiple R	0.78991633
R Square	0.62396782
Adjusted R S	0.58978307
Standard Err	0.01478329
Observations	13

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.00398907	0.00398907	18.2528152	0.00131552
Residual	11	0.002404	0.00021855		
Total	12	0.00639308			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0996875	0.03007782	-3.3143184	0.00690047	-0.1658883	-0.0334866	-0.1658883	-0.0334866
5.80775907	0.01625711	0.00380521	4.27233135	0.00131552	0.0078819	0.02463232	0.0078819	0.02463232

In the regression analysis shown above, the number of nodes in each year refers to the number of independent commercial actors with at least one connection. Independent commercial actor can refer to an individual, a firm, a vessel, a national government, or a governmental agency or department. In many cases, a commercial actor possesses more than one connection in

each year, and sometimes multiple transactions with a single connection. Nonetheless, “node” simply refers to the number of independent actors in a given network. An “edge” is the direct connection between two nodes. In the case of the graphs depicted in this paper, the edge connecting each node is the average of all connections between the two nodes in a given time.

Graph density refers to the connectedness of a given network. Put simply, network density is the number of actual connections in a network divided by the number of potential connections in that same network. In mathematical terms,

$$\text{Network Density} = \text{Actual Connections (AC)} / \text{Potential Connections (PC)}$$

Potential connections are calculated with the following simple equation, with n equaling the number of total nodes in the network:

$$PC = n([n-1])/2$$

In a perfectly connected network graph, every node would connect to every other node with a direct edge. This perfect network would carry a value of 1. Likewise, a network in which no node connected with any other node would hold a density value of zero. In most cases, highly connected networks lead to greater efficiency as commercial connections, ideas and information, capital, or physical materials pass through fewer steps to get from an origin to a destination.

Transaction value (in Regression 2) refers to the average monetary value of each transaction in a network in a given year. Transaction value does not correspond to a particular analytic variable, but is rather a basic measurement of the monetary value of each commercial connection in a given network.

Regression 1 plots the relationship between the number of nodes in a given year and the density of that year's graph. Using the natural log (LN) of average transaction value and network density for each year, Regression 1 shows that William Constable's network did indeed show a consistent relationship between the contraction of his network and the density of it. Despite a small amount a variation, as Constable's network contracted the nodes that remained became increasingly connected with each other. In other words, the contraction process did not simply leave previously connected nodes, but rather the remaining nodes increased their connectivity with other remaining nodes as time went on.

Regression 2 shows that as the number of nodes in Constable's network fell, the average transaction value increased. As in Regression 1, the contraction of Constable's network did not simply "weed out" low value nodes, thereby increasing the average value by attrition. Rather, as the number of Constable's network companions fell, the network companions that remained, many of which did not have a long-standing place in the network, increased their relative transaction value year-on-year. More simply, the network fundamentally changed its form—the contraction of the network itself facilitated a change to that type and value of transactions taking place within it.