

Journal of Social and Administrative Sciences

econsciences.com

Volume 12

September 2025

Issue 3

Economic thought in Eighteenth Century America prior to independence

By James S. CICARELLI †

Abstract. This paper examines the state of economic thought in the United States during the time period 1700 to 1775, an era that marks the end of the colonial age for the new nation. This essay starts with an over view of economic conditions during the final phase of colonialism in America. This is followed by a discussion of American economic thinking, divided into three distinct yet overlapping perspectives: (1) mainstream economic thought, which represents the dominant point of view about economics in America prior to the end of colonial status; (2) other voices, or economic perspectives focused on particular economic issues of the time and not the general state of economic thought; and (3) a crosscurrent or contrary view to mainstream economics, a way of viewing economics and economic thinking that takes exception to the popular economic paradigm of the time.

Keywords. Slavery, Compulsion, Libertarianism.

JEL. K29.

1. Introduction

Discussing the state of American economic thinking in the eighteenth century might seem a bit pretentious given that the century witnessed the publication of *The Wealth of Nations*, arguably the most notable event in the history of Western economic thought. Compared to the active, organized, and sometimes competing schools of European thought—mercantilism, physiocracy, laissez faire, invisible-hand market capitalism—the state of American economics from 1700 to 1775 was truly primitive. Yet, as the 1978 Nobel Laureate in Economics Herbert A. Simon once observed “Advances in human knowledge even more than other events, cast very long shadows before them” (Katz, 1989:264). This cogent insight certainly applies to American economic thinking prior to the American revolution, and provides a revealing preview of what the country’s economics would look like after independence. Before discussing pre-revolutionary economic thought per se, this paper begins with an overview of economic conditions as a way of giving historical context to the development of American economics during the colonial period prior to independence.

2. Economic Conditions, 1700-1775

The first 75 years of the eighteenth century were a period of consistent, sustained economic growth in America, thanks in large measure to a steadily increasing colonial population that grew at a rate slightly in excess of three percent per year (McCusker & Menard, 185:9). Overall human head count in America—colonial plus aboriginal—was probably less in 1700 than it was in

† Roosevelt University, Department of Economics, 430 S. Michigan Ave. Chicago, IL, USA.

1600 because of the dramatic drop in the indigenous populations due mainly to the adverse effects of the human and zoonotic diseases associated with European immigrants and their live stocks (Menard, 1996:254-55; Jennings, 2000:21). By 1700 the decimation of native peoples had been so precipitous that the growth of colonial populations—domestic and immigrant—more than offset subsequent declines in the number of aboriginals. From about 250,000 at the beginning of the eighteenth century, the colonial population of America increased tenfold on the eve of independence to about 2.6 million, the composition of which was “1.95 million whites, 520,000 blacks, and 100,000 or fewer Native Americans” (Perkins, 1980:2). The colonial population was also becoming more diverse as the proportion of immigrants from England steadily decreased to about 60 per cent in 1770, with the other forty percent coming from a variety of European countries and Africa (Kammen, 1970:203). By about mid-century the impact of immigration on the size of America’s population had waned and the domestic birth rate became responsible for about 95 percent of population growth (Perkins, 1980:2).

The American workforce prior to independence was not only getting larger, it was also getting better. The broad implementation of compulsory education for a variety of religious and secular reasons (Jernegan, 1930:84-91) produced an appreciable deepening of the human capital embodied in the colonial population. This was particularly evident in relatively densely populated coastal areas such as those around Boston and Philadelphia, which could sustain a large and growing number of private and public grammar and secondary schools (Seybolt). While not as high as along the sea coast, the incidence of schooling rose steadily during this time period for children living in the comparatively less populated interior (Seavoy, 2006:28). The overall growth in education had a dramatic impact on the literacy rate as evident in development of the newspaper industry in America. The first continuous publication of an American newspaper began in Boston in 1704. Fifteen years later Boston got its second newspaper and Philadelphia got its first. Thereafter in rapid succession, newspapers appeared in other coastal urban centers: New York, 1725; Maryland, 1727; Charleston, 1732; and Virginia, 1736 (Copeland, 2000:14; Mott, 1945:12). Printing and widespread literacy took longer to arrive at interior settlements; the first newspaper in Vermont began publishing in 1781 (Thomas, 1970:586).

Notwithstanding the large commercial plantations in Maryland, Virginia, and South Carolina that were exporting tobacco, rice, and sugar to England and its other New World possessions, eighty to ninety percent of the colonial population depended on the activities of small-scale agriculture for their livelihood (Seavoy, 1997:1). These farms were generally self-sustaining but not necessarily self-sufficient as there were extensive networks of farmers’ markets and barter arrangements for farm-to-farm trade. Most of these exchanges did not occur in formal markets so measures of national output or its dual, national income, are rough approximations. Nevertheless, rigorous and reasonable analysis of available data has yielded credible estimates for national income statistics for 1700-1775 (Jones). For the timeframe in question, per capita income in colonial America grew at rates ranging from .3-to-.5 percent per annum (Jones, 1980:78). Given the rate of population growth, this implies that gross domestic product was increasing at a minimum of about 3 percent a year for the 75-year period, which translates into a doubling every 20-25 years without interruption. A favorable tail wind gave additional momentum to this

J. Cicarelli, JSAS, 12(3), 2025, pp.47-63

seamless expansion: “No major famines, epidemics, or extended wars intervened to reverse or even slow down appreciably the tide of vigorous economic expansion” (Perkins, 1980:ix). This period of growth transformed the American colonies into a developing nation from an undeveloped one.

From 1700 to 1774, ...aggregate output multiplied almost twelvefold. At the start of the eighteenth century, the size of the colonial economy was a mere 4 percent of the mother country's; yet on the eve of independence the percentage had risen to over one-third, and the colonies were gaining steadily. (Perkins, 1980:ix)

Despite being one of the longest period of uninterrupted growth in American economic history, the years from 1700 to 1775 were not without problems, two of the more prominent ones being the quantity of money and the supply of labor. With respect to money, the long held conventional view was that glitches with the American money supply were a by-product of British mercantilism (Kammen, 1980:48; Bailyn 1955:182-83).

The colonies—as a debtor region—were confronted with a continuous adverse balance of payments, and their available specie was repeatedly drawn away to creditors in Europe. The scarcity of specie in America gave birth to a widespread belief that prices of colonial products were ruinously low because money was wanting. Commercial rates of exchange were unfavorable to the debtors; and, when the prices of their products fell in response to European commercial conditions, they were hard pressed to find the means of paying their debts (Nettels, 1964:8).

A more contemporary stance is that the colonial supply of money was just about right to sustain the robust rate of growth the American economy experienced over the 1770-1775 period. If this was not the case, that is, if the conventional view were correct, the colonies would have experienced a general and persistent decline in the price level; that did not happen although regional liquidity problems often occurred and were sometimes acute (Perkins, 1980:102). For some modern scholars, the underlying issues about the supply of colonial money were more a matter of political control than economics (Perkins, 1980:116). Whether real or imagined or something in between, issues surrounding the institution of money and its many facets were frequent topics of the few Americans writing about economics in the eighteenth century.

The second major economic concern in eighteenth century colonial America was the persistent shortage of labor due in large measure to the “unfettered access to abundant land” (Matson, 2006:28). Most immigrants came to America to become farmers; even transplanted merchants regularly gave up their craft to enter agriculture once they had acquired enough wealth to purchase a farm and with it, the sense of security that accompanied land ownership (Nash, 1986:344-45). To cope with the labor shortage which was particularly acute in the seventeenth century and the early portion of the eighteenth century before population growth eased the situation somewhat, the colonies developed an elaborate system of servants, i.e., contract workers who bound themselves to a single employer for a fixed period of time in return for free transportation to America.

There were three main classes of servants. One who entered into such a contract with an agent, often the shipmaster, was called an indentured servant. The shipmaster reimbursed himself, on arrival in America, by selling the time of the servant to the highest bidder. The second class included the “redemptioners,” or “free-willers.” They signed no contract beforehand, but were given transportation by the shipmaster with the understanding that on arrival they were to have a few days to indenture

themselves to someone to pay for their passage. Failing this, the shipmaster could sell them himself. The free-willer then was at a great disadvantage. He had to bargain in competition with many others, and was so much at the mercy of the buyer or the shipmaster that laws were passed by several colonies limiting his time of service and defining his rights. (Jernegan, 1931:47).

All told, “roughly half the Europeans arriving before 1776 owed a term of servitude in exchange for their ocean passage” (Rockman, 2006:335). A third category of servants included those forced into servitude such as prisoners and convicted criminals. This was the smallest class of servants amounting to no more than ten percent of the roughly 500,000 servants who came to America prior to independence (Tomlins, 2006:150). The shipping of felons to the America was relatively short lived as several colonial governments were successful in persuading the British to discontinue the practice (Jernegan, 1931:48-49).

The twin magnets of high wages and cheap land continued to attract immigrants to America as the eighteenth century progressed but in reduced numbers, diminishing the effectiveness of servitude as a means of dealing with the labor shortage (Bailyn, 1986:60-1). That plus the frequent turn-over of servants working on fixed-length contracts led colonists, particularly plantation owners in the West Indies and America’s southern colonies, to seek an alternative supply of labor (Koo, 2008:82-3). Slavery began in the British West Indies in the 1620s, and about fifty years later in colonial America. More slaves were imported into the West Indies than America (Dunn, 1984:165), but the rate of population growth among American slaves exceeded that among the slaves in the West Indies. As a result, at the time American independence was declared, there were about 350,000 slaves in the West Indies compared to 500,000 in the mainland colonies. Of the total American slave population, about ninety percent lived in the southern colonies while the rest were scattered in the Mid-Atlantic and New England regions (Dunn, 1984: 165), where a combination of social forces and economics discouraged the practice of slavery. Ultimately, the institutions of slavery and issues surrounding the supply of money played prominent roles in the American story; the control of the money supply was a contributing factor to the seminal event in eighteenth century America, the War of Independence, while the moral, political, and economic ramifications of slavery were instrumental causes of the watershed event in nineteenth century American history, the Civil War.

3. Eighteenth Century American Economics

Any examination of American economic thought in the eighteenth century must include a discussion of Benjamin Franklin (1706-1790), arguably one of the most fascinating people on the planet during that century, and certainly the “one commanding name in [the] American economic discussion” of pre-revolutionary literature (Seligman, 1967:126). Born in Boston into a family of limited means, Franklin was the fifteenth of seventeen children Josiah Franklin fathered in two marriages. Though essentially self-educated, Franklin was sent to the Boston Latin School at age eight as preparation for a life in the clergy but family finances, or rather the lack thereof, forced an end to his formal schooling after two years. He worked for his father, a maker of candles and soap, until age 12 at which time he was indentured to his older brother James, a printer. The quid pro quo for this arrangement was that James would

teach his younger brother the trade and in return, Franklin pledged nine years of service, this at a time when white servitude, though still popular, was declining as black slavery was increasingly becoming the predominant form of bound labor in colonial America (Dunn; Galenson). After five years of almost continuous friction between himself and his brother James, Franklin absconded from his apprenticeship, fleeing to Philadelphia in 1723 to begin a new and what would prove to be a remarkable life.

Franklin arrived in Philadelphia an “unkempt urchin,” with few possessions save for “a Dutch dollar and a change of stockings in his pants” (Conner, 1965:10). Being a skilled printer, he eventually found work in what he personally considered his life’s primary occupation as evident in his last will and testament which begins “I, Benjamin Franklin, Printer...” (Seeger, 1973:4). In 1729 after several years working for others, he bought and published the *Pennsylvania Gazette*, and turned what was a regional publication into the largest circulating newspaper in colonial America. The paper ultimately became the forerunner of *The Saturday Evening Post*, which is still in publication. In 1733, Franklin created *Poor Richard’s Almanack*, an annual publication which appeared continually until 1758. The *Almanack* had a peak circulation of about 10,000 (Van Doren, 1938:109), equivalent to about two percent of the literate population in the American colonies, making it, in relative terms, comparable to the 2.7 million circulation of *The Saturday Evening Post* in its heyday (Brucoli, 1996:14). By 1750 he left the publishing industry, but not before arranging sales of his literary properties in a way that provided Franklin and his family a comfortable standard of living for the rest of their days.

Franklin was a printer by necessity; he was a polymath by choice. A voracious reader from an early age, he amasses a personal library of over 4,000 volumes covering a variety of topics and subjects including science, literature, and politics (Seeger, 1973:7). More than just a consumer of knowledge, he also created it. In the 1740s he performed many ingenious experiments in physics and electricity, the results of which he often shared via correspondences with like-minded thinkers in colonial America and other parts of the world as was the practice among scholars at that time (Brands, 2000:193). His efforts produced a number of important inventions such as the Franklin stove and the lighting rod, technological breakthroughs that diminished appreciably the incidence of household fires, the scourge of eighteenth-century urban areas. Eschewing patents, he readily made his inventions available to society as a whole, a gesture that reflected his personal but unarticulated belief in knowledge as a public good (Labaree, 1964:192). The 1751 publication of *Experiments and Observations on Electricity* cemented his international reputation and helped make him “the only American whose name was widely known outside America before 1776...” (Forde, 2003:80). It was no fluke that in 1747 when the Royal Swedish Academy of Sciences sent the agricultural economist Peter Kalm, a protégé of Carl Linnaeus, to North America in search of seeds and plants that could be commercially transplanted, literally the first person Kalm contacted upon reaching colonial America was Benjamin Franklin (Benson, 1937:17- 625).

Given his eclectic interests it was inevitable that Franklin would at some point in time train his reasoning powers on economic issues; he did so at the age of 22 when he examined one of the most stubborn problems of life in colonial America, money.

Journal of Social and Administrative Sciences

In the pre-revolutionary period there were only a few economic topics that attracted attention. These were agriculture, trade, taxation and currency, of which the most important, as well as the most contentious, was the last (Seligman, 1967:122).

On April 3, 1729, Franklin published the small pamphlet *A Modest Enquiry into the Nature and Necessity of a Paper Currency* (Franklin, 1911:335-58), which first appeared as an essay in the *Maryland Gazette* on December 17, 1728 (Carey, 1928:7). The purpose of the piece was to endorse the use of paper currency as a way to deal “with the perennial insufficiency” of a circulating medium of exchange in the American colonies. The later situation arose because international traders in the colonies were obliged to ship gold and silver overseas to settle accounts, leaving an inadequate supply of money available to support the growing volume of internal trade in America, which at the time lacked an indigenous supply of precious metals (McCusker, 1978:117).

To cope with the persistent shortage of a circulating medium of exchange, trade in the American colonies relied on a combination of barter, commodity monies such as sugar and tobacco, overvalued gold and silver coins, and paper currency (McCusker, 1978:117-121). The last method—paper money—was clearly a superior option compared to the other solutions of the problem, each of which lacked convenience especially when comparing the value of one commodity to another. Franklin wrote: “To remedy such Inconveniences and facilitate Exchange, men have invented MONEY, properly called a *Medium of Exchange*, because through or by its Means Labour is exchanged for Labour, or one Commodity for another” (Franklin, 1911:345). Thus, Franklin introduced his labor theory of value, a concept he borrowed from William Petty’s (1623-1687) *A Treatise of Taxes and Contributions*, published in 1662. As Petty reasoned and Franklin eloquently explained, the amount of labor (time) embedded in the production of a commodity determines its comparative value vis-à-vis other commodities; the medium of exchange “whether Gold, Silver, Copper, or Tobacco” merely measures worth and facilitates trade but does not create value per se (Franklin, 1911:345). A side-by-side comparison of relevant passages from the works of Petty and Franklin reveals just how much the latter lifted from the former (Wetzel, 1895:30-31). Using contemporary norms one could argue that Franklin plagiarized Petty, but given the literary milieu of the early eighteenth century, such a conclusion would be hasty and inappropriate.

The term plagiarism “had no currency in English before the late sixteenth century” and was then an issue involved more with the production of literary material than its appropriation by other writers (Lowenstein, 2002:87). England’s first copyright law—the Statute of Anne—was adopted in 1710; it was less about defending the intellectual property of authors and more about protecting the commercial interests of stationers (a catch-all term for publishers, printers, and booksellers) from those who would pirate their imprints (Lowenstein, 2002:13-14). For authors “plagiarism didn’t become a truly sore point...until they thought of writing as their trade” (Mallon, 1989:3-4). In England, that did not occur until the middle of the eighteenth century (Pitcher), when a variety of factors combined to make writing a viable career choice (Pitcher, 2000:1).

Increases in literacy, the growth of cities, falling paper prices, the influx of international capital, the end of pre-publication censorship, and above all, the newfound willingness of authors to make their work public

transformed British literary culture from a courtly coterie into a thriving marketplace (Greene, 2005:1).

A comparable transformation of writing from an avocation to a viable livelihood did not occur in America until the nineteenth century. “Franklin was not an original economist and would never become one “(Brands, 2000:133), so he did what any self-respecting intellectual of his era would do when writing in a field outside his areas of expertise: he grafted the best economics then available and adopted it for his purposes. Petty may have been the first to advance a labor theory of value, however opaquely, but Franklin’s explanation of the theory was more accessible to the general reader, which is probably why Karl Marx regarded both as originators of the concept (Marx, 1906:59).

While William Petty was the major source of Franklin’s economics (Spiegel, 1991:124-131), Franklin drew his inspiration for the essay on money from his personal experience and observations. Growing up in Massachusetts the first American colony that began using paper money as early as 1690, Franklin was exposed to a lively and continuous debate on the topic as reflected in the approximately 30 pamphlets printed in the colony and distributed in Boston from 1682 until his departure for Philadelphia in 1723 (Carey, 1928:1). About half of these leaflets were published during Franklin’s apprenticeship as a printer; indeed, two of the pamphlets were printed in James Franklin’s shop (Carey, 1928:1; Davis, 1910:414-42). The positions expressed in the essays circulating in Boston represented the spectrum of viewpoints, from those in manufacturing and commerce who generally supported paper currency as a way to boost business, to those opposed to the idea such as lenders and others fearful of the possibility of devaluation. These competing perspectives tampered Franklin’s enthusiasm for paper money and made him mindful of the need to create a prudent supply of currency subject to an orderly rate of growth to accommodate an expanding economy (Franklin, 1911:342-45). There is no indication in his writing that he fully appreciated the potential of runaway inflation or the economic harm that it could produce (Hutchinson, 1988:140). For Franklin, the benefits of paper currency far outweighed the risks, a position reinforced in 1723 when Philadelphia began its own experiment with paper money accompanied by a noticeable uptick in the overall level of economic activity in the city, a boom he directly attributed to the increase of money in circulation (Cary, 1928:5).

After *A Modest Enquiry* appeared in print, Franklin did not revisit the field of economics in any meaningful way until 1751 when he published *Observations concerning the Increase of Mankind and the Peopling of Countries*, an essay “in which he emphasized the tendency for population to increase when subsistence was available, but with none of the menace proclaimed nearly half a century later in Malthus’ first essay” (Hutchison, 1988:245). Contrary to Malthus’ fatalism, Franklin noted that colonial population and American prosperity seemed directly related, with the former doubling every 25 years for an annual rate of growth of about 2.5 percent. “By 1775 the population of the 13 colonies had reached 2.5 million, compared with only 250,000 in 1700, a tenfold increase” (Lemon, 2001:119-21). During that time period, the population in America grew from one-tenth to about one-third of that of Britain (Lemon) due primarily to a high domestic birth rate and immigration, both voluntary and forced (slavery). That the colonial population would soon exceed England’s (which it did by 1820) was obvious to

all, so much so that colonists were prone to tell anyone who would listen “that in thirty or forty years...the North American colonies would form an independent country” (Olsson, 1970:13). For Franklin, believing as he did that population growth drives economic expansion; an independent America would be both more populous and more prosperous than Great Britain (Carey, 1928:2-6).

Over the next three decades Franklin published several works that touched on economics or economic issues including: *The Interest of Great Britain Considered with Regard to her Colonies and the Acquisition of Canada and Guadeloupe* (1760), in which he makes use of the principle of the division of labor; *On the Price of Corn and Management of the Poor* (1767), where he excoriates export taxes; and *Reflections on the Augmentation of Wages which will be occasioned in Europe by the American Revolution* (1788), an annunciation of his version of a theory of the high wage economy (Seligman, 1967:127). In 1876 an assessment of these works and other economic writings of Franklin led one historian of American economics to conclude: “Of Franklin then it must be said, that he not only did not advance the growth of economic science, but that he seems not even to have mastered it as it was already developed,” a criticism softened somewhat with the rationalization that “little more can be said for any of our public men or writers during the period of Franklin’s activity” (Dunbar, 1904:7).

The reality was that the state of American economic thinking throughout much of the eighteenth century was embryonic compared to what was going on in other parts of the world. At about the time Franklin was publishing *A Modest Inquiry*, several universities in Prussia and Sweden were establishing academic chairs in political economy (Stapelbroek&Marjanen, 2011:19). None of America’s universities taught economics as a standalone course, and if economic matters such as fair price or usury were discussed at all, it was usually in the context of a class on moral philosophy (Conkin, 1980:ix). If positive economics is the economics of what is or can be, and normative economics is what ought or should be, than policy economics is about program or plans to narrow the gap between the two. The habit of making policy recommendations that promote the welfare of the whole was the thrust of Franklin’s economics (Kammen, 1970:127), or rather his political economy as the expression was commonly used in the eighteenth century.

The word *political* in *political economy* did not refer to the policy implications of economic theory or to the interaction of economic analysis and governmental action. Rather, *political* designated a universe of discourse. Political economy included those universal principles applicable to a national economy, to a single sovereign entity. It set off the public scope of political from the more limited field of domestic economy, and thus from those principles applicable only to a single household or firm. (Conkin, 1980:ix)

Since his purpose was promoting societal welfare, be it of Philadelphia or that of the entire nation, Franklin was way too practical to let consistency interfere with his economic thinking. “His inconsistencies were many, but they were the inevitable accompaniments of his diverse loyalties and journalistic habits” (Dorfman, 1946:178). As a young man he argued against Mercantilism and its system of tariffs but later in life he saw the virtue of protectionism as a way to insulate the commerce of an emerging nation from the rigors of competing with merchants in well-established countries. This

Journal of Social and Administrative Sciences

apparent contradiction was Franklin's eighteenth century version of "import substitution" (Mott & Zinke, 1987:114). The first economist he read was William Petty from whom he borrowed a labor theory of value, but in the 1760s, trips to Paris and meetings with leading physiocrats convinced a mature Franklin that agriculture was the ultimate source of wealth (Hutchinson, 1988:246). In the short essay *Positions to be Examined* published in 1769, he wrote:

Finally, there seem to be but three ways for a nation to acquire wealth. The first is by war, as the Romans did, in plundering their conquered neighbors. This is robbery.—The second by commerce, which is, generally, cheating.—The third by agriculture, the only honest way; wherein man receives a real increase of the seed thrown into the ground, in a kind of continual miracle wrought by the hand God in his favor, as a reward for his innocent life, and his virtuous industry. (Franklin, 1769)

For a mellowed Franklin, the value and dignity of an agriculture-based economy trumped that of a manufacturing-based system regardless of amount of back-breaking effort involved or the diminished level of prosperity attained (Carey, 1928:168-69). As he had done with other economic thinkers, Franklin mimicked the ideas of the physiocrats, but he did so creatively.

While European in his general philosophy, Franklin was American in his economic views, and simply adopted those parts of French philosophy which were fitted to the conditions of his country. His general economic ideas were of the laissez-faire type in the sense in which they were held by his French friends, but he was a pioneer of American economic thought, bringing optimism into the discussion of population and the wages problem, and basing his opinions on the peculiar features of the American economy of vast spaces. (Normano, 1943:37)

Always pragmatic, "Franklin's political economy was motivated throughout by a vision of the good society to which sound economic policy should lead" (Mott & Zinke, 1987:116). For him, this meant a strong middle class and a "society without extremes of conduct and of wealth or poverty" (Mott & Zinke, 1987). This "Happy Mediocrity" as Franklin called it, smacks of the modern concept of 'optimal,' the idea singularly responsible for contemporary economics being dubbed the "Goldilocks" science.

Given the sum total of his economics, whether derived from Franklin's standalone pamphlets or passing remarks embedded in his other writings, a legitimate question can be posed: Was Benjamin Franklin America's first economist? Some scholars respond with an enthusiastic yes: "Franklin, then, deserves a place in the history of early economic literature, and especially in the history of American economics. He is the first American who deserves to be dignified by the title Economist" (Wetzel, 1985:56). Other writers describe his economic contributions with more muted admiration (Dorfman, 1946:78-195). The point is debatable but the significance of Franklin to economics in particular and American life in general is not.

...Benjamin Franklin personified the transformation of Britain's mainland colonies into the first modern society. Most of the major transformations that occurred in America between 1680 and 1770 unfolded before him—the colonies' massive population growth, the maturation of colonial politics, the creation of a slaveholding culture even outside the southern colonies, immense domestic and international expansion, the growth of a rich secular life and material culture, the evolution of diverse, sometimes baffling modern religious pluralism. The aphorisms of Franklin's *Poor Richard Almanac* made sense of that

Journal of Social and Administrative Sciences

transformation. In Franklin's hands...life became something to be shaped, reshaped, then reshaped again—"Lost Time is never found again"—"God helps them that helps themselves"....These aphorisms tamed and disciplined an expanding, aggressive, and calculating society. They did not guarantee amoral society or even a good society. But they channeled behavior that might drift toward pure greed, asserted the virtue of labor over status, and bypassed traditional European emphasis on family inheritance, political deference, and vengeful religious dogmatism. In *Poor Richard's Almanac*, many Americans could see what they were becoming and what they wanted to be. (Butler, 247)

That Benjamin Franklin still commands our attention validates his importance; American economics is fortunate to be able to trace its roots to him.

4. Other Voices

Benjamin Franklin was probably the most significant political economist in colonial America from 1700 to 1775 but he was not alone. There was a small but vocal cadre of political economists during this time period galvanized into action by the debates swirling around paper currency and the institution of land banking. Through self-published pamphlets and the modern equivalent of letters-to-the-editor, many writers, most anonymous, argued the pros and cons of land banks and paper money, especially in New England where a tradition of conventional banking and an allegiance to hard (specie) money were particularly strong (Newell, 1998:143). Boston, where paper money was a source of contention since first being introduced in 1690, was the epicenter of this debate (Bailyn 1955:185-89).

Like nature, economic activity abhors a vacuum, and in the absence of a domestic supply of gold and silver, American colonists sought a solution to the shortage of money in the one thing they had in great abundance, land. Usually organized and operated by various colonial governmental units, land banks created loans in the form of provincial paper currency lent to borrowers who used their land, farms, homes, and other types of real estate as collateral (Thayer, 1953:145). Along with a limited quantity of specie money, the land-backed paper currency circulated as a medium of exchange and fueled economic growth, especially in the middle colonies where "a moderate volume of money issues on the security of good land in a region whose agriculture was highly profitable gave value and stability to the currency" (Thayer, 1953:146). This was not the case in New England, especially in the Boston area where a combination of poor quality land and an oversupply of currency generated inflation, which proved to be bothersome for traditional bankers, merchants involved in international commerce, and similar creditors who despite their preference for hard money were often obliged to accept depreciated paper currency in the settlement of debts (Michener, 2011:8).

Many Massachusetts residents contributed to the literary debate over the efficacy of land banks and paper money including William Douglass and Hugh Vance, two pamphleteers who together "created the most comprehensive body of analysis in the entire paper money debate" (Newell, 1998:219). Of the two, Douglass was clearly the more well known in the New England colonies then and to history now. Born about 1691 in Gifford, Scotland to a family of some means, he studied in the Netherlands and France, and eventually earned a medical degree from the University of Edinburgh, "at the time the best

medical school in Great Britain” (Lemay, 2006:98). Douglass immigrated to England’s New World colonies in 1716, settling in Boston in 1718 where he stayed until his death in 1752. At a time when most American ‘physicians’ were trained via apprenticeships, Douglass claimed he was the only professionally educated doctor in Boston, a fact that was probably true and something he never let his associates forget (Bullock, 1897:266). A self-proclaimed rationalist, he rejected the blind acceptance of doctrine in favor of empirical-based reasoning. As was the case among educated individuals of this era, his intellectual interests were many, including history. His book *A Summary, Historical and Political, of the First Planting, Progressive Improvements, and Present State of the British Settlements in North America* was cited three times in *The Wealth of Nations* (Smith, 1937:972). His many accomplishments and generous philanthropy led to the naming of the small village Douglass, Massachusetts, about 15 miles south of Wooster, in his honor.

By contrast, Hugh Vance’s biography is not nearly as well documented as that of Douglass. Vance (1699-1763) was born in Boston to a well-respected Huguenot family. His educational background is something of a mystery, although he did spend some time in Stockholm as a young man. In adulthood, he became a stalwart within the Boston merchant community, serving on a number of citizen committees in the 1730s and ‘40s and was elected to public office, all of which “indicates that he enjoyed the respect and confidence of his fellow citizens” (Wilhite, 1958:148). Unlike Douglass who amassed a sizeable fortune during his life, Vance the merchant had limited success despite his extensive involvement in civic affairs; “in his old age, after a career of activities on his own and in town affairs, he was adjudged a bankrupt” in 1758 (Davis, 1910:20). While his business acumen may have been wanting, Vance’s economic thinking as evident in his 1740 pamphlet *An Inquiry into the Nature and Uses of Money; More especially of the Bills of Publick Credit* was rich in prescient observations. An ardent enthusiast of paper currency, he began his essay supporting soft money with a fledgling theory of value that would resonate with a modern economist.

All things in use in the world, whether they have real or accidental Value, or Price in the Market, from the same causes, viz. either from the *Plenty* or the *Scarcity* of the Commodity to be sold, or from the greater or smaller number of *Buyers*; but more fully and clearly expressed by means of any change in the *Proportion* between the *Quantity* to be sold and the *Demand* for that *Quantity*. By the *Quantity to be sold*, we must understand the present *Quantity* of goods that the *Sellers* are inclined or forced to part with; and by the *Demand*, the present quantity of goods, which the *Buyers* are under obligations at the same time to purchase...(Vance, 1911:374)

In this passage, Vance exhibits an instinctive appreciation of price determination via the interaction of demand and supply; applying his insight proved more difficult than expressing it. Further along in his essay Vance reasons that the price level and the amount of money in circulation are not necessarily related (Vance, 1911:379), a proposition that becomes the linchpin of his measured and reasoned “defense of paper currency against the charge of inflation” (Newell, 1998:219).

Long a champion of hard money, William Douglass in his 1740 pamphlet *A Discourse concerning the Currencies of the British Plantations in America: More Particularly to the Province of Massachusetts Bay in New England* launched a rebuttal to Vance’s position. Save for an appreciation of Gresham’s

J. Cicarelli, JSAS, 12(3), 2025, pp.47-63

Law (Wilhite, 1958:143), Douglass, a man long on opinions but short on logic, relied on polemics to discredit his adversary, a tactic he had employed in 1721 when arguing against inoculations as an effective treatment for smallpox during a potential epidemic in eastern Massachusetts (Dorfman, 1955). Despite his medical credentials, local Boston politicians went ahead with an inoculation program, disregarding Douglass' tradition-bound professional judgment in favor of experimental pragmatism (Carr, 2008:306-7). Never publically admitting that his initial opinion was wrong, Douglass reluctantly accepted the effectiveness of inoculations (Copeland, 2000:13-24). Given his propensity to consider himself the smartest person in the room, any room, Douglass used the same heavy-handedness to discredit Vance's argument while promoting his fundamental belief in hard currency even though "he had no basic or complete theory of money" and otherwise "contributed nothing of importance to any other phase of economic theory" (Wilhite, 1958:144).

Considered *in toto*, the Douglas/Vance debate illustrated the adage "where one stands depends on where one sits." The haughty Douglass reflected the point of view of British-oriented "foreign" merchants, namely importers and exporters who dealt in international commerce where specie money was the preferred medium of exchange, while Vance, a "native" merchant spoke for those engaged in trade within the colonies where paper currency worked just fine (Dorfman, 1946:158). The difference between the two positions was more about Douglass' style and station than Vance's substance and insight. In part because they wanted to believe that Douglass and those of his ilk represented the popular view, the British enacted the Currency Act of 1752, restricting future emissions of paper currency in the New England colonies. In 1764 the British extended the Currency Act to all colonies in North America, a move that backfired as it made currency autonomy a contributing factor of the American Revolution. Some historians have argued that a 1773 amendment to the Currency Act mitigated the restrictions on the issuing of paper currencies in the American colonies, thereby diminishing the significance of currency sovereignty as a cause of the War of Independence. The amendment, however, was most likely too little too late; by 1773 the arrow had already left the bow.

5. A Crosscurrent

Through the first 75 years of the eighteenth century, there was no uniquely American body of economic thought per se. American economics of the time was a stew of Old World thought seasoned with aboriginal practices and "dyed by the geography, physical aspects, and environment of the New World, as well as by its lack of history and traditions of its own" (Normano, 1943:28). Yet during this unprecedented period of continuous prosperity, there was a call for reforming American economic practices if not thought, a plea that would become a persistent echo in the evolution of American economic thinking, recurring in varying degrees of intensity and duration from the eighteenth century to the present. The point of tension that pits a crosscurrent against the main stream often involves the quintessential problem of democracy: the frictions between libertarian views and a communitarian outlook; balancing the rights and responsibilities of the individual with the needs and aspirations of the community (Normano, 1943:30-31). Pinpointing the origins of this constant and contentious struggle is debatable, but certainly a leading

candidate for this contrariness as evident in American economic thought can be found in the writings of John Woolman (1720-1772).

Woolman was born into a pioneering Quaker family who had established a homestead in western New Jersey not far from Philadelphia (Whitney, 1943:18-20). Well educated considering the norms of the time, Woolman performed many tasks for his community as an adult—schoolteacher, surveyor, willwriter, estate executor, peripatetic preacher—but his primary vocation was as a tailor, “a useful occupation...[that] would provide him a ‘plain’ living...but not great wealth and luxury,” the temptations that “lead men astray from the path of righteousness” (Dorfman, 1946:196). Early in his life, Woolman experienced a crisis of conscience when he had to write a bill of sale for his employer who was selling a slave (Shore, 1913:45). The obvious contradiction of Quaker philosophy and slavery struck Woolman as insidious and ultimately inspired him to publish in 1754 the abolitionist tract *Some Observations on the Keeping of Negroes*, a pamphlet printed by his friend Benjamin Franklin (Shore, 1913:69-70). The abolition of slavery was one of the two main aims of his life; the other was “the readjustment of human relations for the relief of the laboring classes” (Gummere, 1922:v). In the mid-1750s, Woolman began to keep a journal, a common practice among many of his literate contemporaries. His journal was part diary, part philosophy, and part travelogue as it provided detailed descriptions of his many travels in colonial America and abroad. Woolman was certainly no economist, but when passages from his journals (Woolman) are combined with those from his other publications such as *A Plea for the Poor*, written in the mid-1760s but not formally published until some thirty years later (Gummere, 1922:401) one can infer his “radical Christian view of economics” (Sazama, 2003:190).

Although neither man followed a career path in agriculture, Woolman like Franklin was a firm believer in and a strong supporter of an agrarian-oriented economics system (Rosenblatt, 1969:89-94). Ever the practical humanist, Franklin was fundamentally but not exclusively an agrarian; Woolman, the idealistic spiritualist, saw husbandry as the only true purpose of human labor;

I know of no employ in life, more innocent in its nature, more healthy, and more acceptable in common to the minds of honest men, than husbandry...Labouring to raise the necessaries of life, is in itself an honest labour, and the more men there are employed in honest employment, the better. (Woolman, 1772:464)

As the eighteenth century unfolded, sustenance farming was increasingly giving way to commercial agriculture where economies of scale and ever-increasing farm size created a consolidation of economic power and, invariably political clout. Woolman saw the consequences of this tectonic economic shift as devastating to the human spirit.

Wealth desired for its own sake Obstructs the increase of Virtue, and large possessions in the hands of selfish men have a bad tendency, for by their means too small a number of people are employed in things usefull, and therefore some of them are necessitated to labour too hard, while others would want business to earn their Bread, were not employments invented, which having no real use, serve to please the vain mind...The money which the wealthy receive from the poor, who do more than a proper share of business in raising it, is frequently paid to other poor people for doing business which is foreign to the true use of things...To be busied in that which is but vanity, & serves only to please the unstable mind, tends to an alliance with those who promote that

Journal of Social and Administrative Sciences

vanity, and is a snare in which many poor tradesmen are entangled. To be employed in things connected with Virtue, is most agreeable with the Character and inclination of an honest man. While industrious frugal people are borne down with poverty, and oppressed with too much labour in useful things, the way to apply money, without promoting pride and Vanity, remains open to such who are truly Sympathize with them in their various Difficulties (Woolman, 1763:402-403).

In Woolman's implicit labor theory of value some scholars see the thinking of a latent socialist (Ripley, 1931:87), but that conclusion is a stretch. Woolman never wrote for the abolition of private property or "government restrictions to limit wealth" (Rosenblatt, 1969:84). His message was saintly, his tone non-threatening, his economics "moderate, self-regulating, and benevolent capitalism" (Rosenblatt). His position in the history of American economic thinking is secured not because of his economics, but rather for his opposition to the prevailing economic paradigm of his time. He was a harbinger of what would become a recurring phenomenon in the subsequent story of American economic thought.

References

- Bailyn, B. (1955). *The New England Merchants in the Seventeenth Century*. Harvard University Press.
- Bailyn, B. (1986). *The Peopling of British North America*. Alfred A. Knopf.
- Benson, A. B. (Ed.). (1937). *Peter Kalm's Travels in North America, The English Version of 1770*. Dover.
- Brands, H. W. (2000). *The First American: The Life and Times of Benjamin Franklin*. Doubleday.
- Brucoli, M. J. (1996). The Man of Letters as Professional. In M. J. Brucoli & J. S. Baughman (Eds.), *F. Scott Fitzgerald on Authorship* (pp. 11–22). University of South Carolina Press.
- Bullock, C. J. (1897). Introduction: The Life and Writings of William Douglass. *Economic Studies*, 2(5), 265–290. (American Economic Association).
- Carey, L. J. (1928). *Franklin's Economic Views*. Doubleday, Doran & Company.
- Carr, J. R. (2008). *Seeds of Discontent: The Deep Roots of the American Revolution, 1650-1750*. Walker & Company.
- Conkin, P. K. (1980). *Prophets of Prosperity: America's First Political Economist*. Indiana University Press.
- Connor, P. W. (1965). *Poor Richard's Politicks*. Oxford University Press.
- Copeland, D. A. (1997). *Colonial American Newspapers: Character and Content*. University of Delaware Press.
- Copeland, D. A. (2000). *Debating the Issues in Colonial Newspapers: Primary Documents on Events of the Period*. Greenwood Press.
- Davis, A. M. (1910). *Two Forgotten Pamphleteers in the Massachusetts Currency Controversy, 1720-1740*. Massachusetts Historical Society.
- Davis, A. M. (Ed.). (1911). *Colonial Currency Reprints, 1682-1751*. Burt Franklin.
- Dorfman, J. (1946). *The Economic Mind in American Civilization, 1606-1865* (Vol. I). August M. Kelley.
- Dunbar, C. (1904). Economic Science in America, 1776-1876. In O. M. W. Sprague (Ed.), *Economic Essays by Charles Franklin Dunbar* (pp. 1–30). Macmillan. (Original work published in *North American Review*).
- Dunn, R. S. (1984). Servants and Slaves: The Recruitment and Employment of Labor. In J. P. Greene & J. R. Pole (Eds.), *Colonial British America: Essays in the New History of the Early Modern Era* (pp. 157–194). The Johns Hopkins University Press.

Journal of Social and Administrative Sciences

- Economidou, C., & Bahmani-Oskooee, M. (2005). How stable is the demand for money in Greece? *International Economic Journal*, 19(3), 461–472. DOI: <https://doi.org/10.1080/10168730500199558>
- Forde, S. (2003). Benjamin Franklin: A Model American and an American Model. In B. P. Frost & J. Sikkenga (Eds.), *History of American Political Thought* (pp. 80–92). Lexington Books.
- Franklin, B. (1911). A Modest Enquiry into the Nature and Necessity of a Paper Currency. In A. M. Davis (Ed.), *Colonial Currency Reprints, 1682-1751* (pp. 335–358). Burt Franklin. (Original work published 1728).
- Franklin, B. (1859). Positions to be Examined. In J. R. McCulloch (Ed.), *A Select Collection of Scarc and Valuable Economical Tracts* (pp. 202–205). Lord Overstone. (Original work published 1769).
- Galenson, D. W. (1981). *White Servitude in Colonial America*. Cambridge University Press.
- Greene, J. P., & Jellison, R. M. (1961). The Currency Act of 1764 in Imperial-Colonial Relations, 1764–1776. *The William and Mary Quarterly*, 18(4), 485–518. DOI: <https://doi.org/10.2307/1918458>
- Greene, J. (2005). *The Trouble with Ownership: Literary Property and Authorial Liability in England, 1660-1730*. University of Pennsylvania Press.
- Gummere, A. M. (1922). Preface. In *The Journal and Essays of John Woolman* (pp. v–vii). Macmillan.
- Hutchison, T. (1988). *Before Adam Smith: The Emergence of Political Economy, 1662-1776*. Basil Blackwell.
- Jennings, F. (2000). *The Creation of America*. Cambridge University Press.
- Jernegan, M. W. (1931). *Laboring and Dependent Classes in Colonial America, 1607-1783*. University of Chicago Press.
- Jones, A. H. (1980). *Wealth of a Nation to Be*. Columbia University Press.
- Kammen, M. (1970). *Empire and Interest: The American Colonies and the Politics of Mercantilism*. J. B. Lippincott.
- Kammen, M. (1980). *People of Paradox*. Cornell University Press. (Original work published 1972).
- Katz, B. S. (1989). Nobel Laureates in Economic Science, *A Biographical Dictionary* (pp. 264–276). Garland.
- Koo, K. S. (2008). Slave Life in Colonial America. In J. A. Grigg & P. C. Mancall (Eds.), *British Colonial America: People and Perspectives* (pp. 81–97). ABC-CLIO.
- Labaree, L. W., Ketcham, R. L., Boatfield, H. C., & Fineman, H. H. (1964). *The Autobiography of Benjamin Franklin*. Yale University Press.
- Lemay, J. A. L. (2006). *The Life of Benjamin Franklin: Volume 1. Journalist, 1706-1730*. University of Pennsylvania Press.
- Lemon, J. T. (2001). Colonial America in the Eighteenth Century. In T. F. McIlwraith & E. K. Muller (Eds.), *North America: The Historical Geography of a Changing Continent* (2nd ed., pp. 119–139). Rowman & Littlefield.
- Loewenstein, J. (2002). *The Author's Due: Printing and the Prehistory of Copyright*. University of Chicago Press.
- Mallon, T. (1989). *Stolen Words: Forays into the Origins and Ravages of Plagiarism*. Ticknor & Fields.
- Maravic, J., & Palic, M. (2005). *Econometric analysis of money demand in Serbia*. National Bank of Serbia.
- Marx, K. (1906). *Capital, A Critique of Political Economy*. Modern Library. (Original work published 1867).
- Matson, C. (2006). A House of Many Mansions: Some Thoughts on the Field of Economic History. In C. Matson (Ed.), *The Economy of Early America: Historical Perspectives & New Directions* (pp. 1–70). Pennsylvania State University Press.
- McCusker, J. J. (1978). *Money and Exchange in Europe and America, 1600-1775: A Handbook*. University of North Carolina Press.

Journal of Social and Administrative Sciences

- McCusker, J. J., & Menard, R. R. (1985). *The Economy of British America, 1607-1789*. University of North Carolina.
- Menard, R. R. (1996). Economic and Social Development of the South. In S. L. Engerman & R. E. Gallman (Eds.), *The Cambridge Economic History of the United States, Vol. I, The Colonial Era* (pp. 249–295). Cambridge University Press.
- Michener, R. (2011). *Money in the American Colonies*. EH. Net Encyclopedia: Economic History Association.
- Mott, F. L. (1945). *American Journalism: A History of Newspapers in the United States through 250 Years, 1690-1940*. Macmillan.
- Mott, T., & Zinke, G. W. (1987). Benjamin Franklin's Economic Thought: A Twentieth Century Appraisal. In M. H. Buxbaum (Ed.), *Critical Essays on Benjamin Franklin* (pp. 111–127). G. K. Hall.
- Nash, G. B. (1986). The Early Merchants of Philadelphia: The Formation and Disintegration of a Founding Elite. In R. S. Dunn & M. M. Dunn (Eds.), *The World of William Penn* (pp. 337–362). University of Pennsylvania Press.
- Nettels, C. P. (1964). *The Money Supply of the American Colonies before 1720*. Augustus M. Kelley. (Original work published 1934).
- Newell, M. E. (1998). *From Dependency to Independence: Economic Revolution in Colonial New England*. Cornell University Press.
- Normano, J. F. (1943). *The Spirit of American Economics*. John Day.
- Olsson, N. W. (1970). *Pehr Kalm and the Image of North America*. James Ford Bell Library.
- Perkins, E. J. (1980). *The Economy of Colonial America*. Columbia University Press.
- Pitcher, E. W. R. (2000). *An Anatomy of Reprintings and Plagiarisms: Finding Keys to Editorial Practices and Magazine History, 1730-1820*. Edwin Mellen Press.
- Ripley, W. Z. (1931). Philosophers and Divines, 1720-1789. In W. P. Trent et al. (Eds.), *The Cambridge History of American Literature, Book I* (pp. 72–89). Macmillan. (Original work published 1917).
- Rockman, S. (2006). The Unfree Origins of American Capitalism. In C. Matson (Ed.), *The Economy of Early America: Historical Perspectives & New Directions* (pp. 335–361). Pennsylvania State University Press.
- Rosenblatt, P. (1969). *John Woolman*. Twayne Publishers.
- Sazama, G. W. (2003). On Woolman's "Conversations," Ethics, and Economics. In M. Heller (Ed.), *The Tendering Presence, Essays on John Woolman* (pp. 190–206). Pendle Hill Publications.
- Seavoy, R. E. (2006). *An Economic History of the United States from 1607 to the Present*. Routledge.
- Seeger, R. J. (1973). *Benjamin Franklin: New World Physicist*. Pergamon Press.
- Seligman, E. R. A. (1967). *Essays in Economics*. August M. Kelley. (Original work published 1925).
- Seybolt, R. F. (1935). *The Public Schools of Colonial Boston, 1635-1775*. Harvard University Press.
- Seybolt, R. F. (1970). *The Private Schools of Colonial Boston*. Greenwood Press. (Original work published 1935).
- Shore, W. T. (1913). *John Woolman, His Life and Our Times*. Macmillan.
- Smith, A. (1937). *The Wealth of Nations*. Modern Library. (Original work published 1776).
- Spiegel, H. W. (1991). *The Growth of Economics Thought* (3rd ed.). Duke University Press.
- Stapelbroek, K., & Marjanen, J. (2012). Political Economy, Patriotism and the Rise of Societies. In K. Stapelbroek & J. Marjanen (Eds.), *The Rise of Economic Societies in the Eighteenth Century* (pp. 1–25). Palgrave Macmillan.
- Thayer, T. (1953). The Land-Bank System in the American Colonies. *The Journal of Economic History*, 13(2), 145–159. DOI: <https://doi.org/10.1017/S0022050700070339>
- Thomas, I. (1970). *The History of Printing in America*. Weatherlane Books. (Original work published 1810).

Journal of Social and Administrative Sciences

- Tomlins, C. (2006). Indentured Servitude in Perspective: European Migration into North America and the Composition of the Early American Labor Force, 1600-1775. In C. Matson (Ed.), *The Economy of Early America: Historical Perspectives & New Directions* (pp. 146-182). Pennsylvania State University Press.
- Vance, H. (1911). An Inquiry into the Nature and Uses of Money; More especially of the Bills Of Credit. In A. M. Davis (Ed.), *Colonial Currency Reprints* (Vol. III, pp. 365-474). The Prince Society. (Original work published 1740).
- Van Doren, C. (1938). *Benjamin Franklin*. Viking Press.
- Wetzel, W. A. (1895). *Benjamin Franklin as an Economist*. Johns Hopkins Press.
- Whitney, J. (1943). *John Woolman Quaker*. Harrap & Co. LTD.
- Willhite, V. G. (1958). *Founders of American Economic Thought and Policy*. Bookman Associates.
- Woolman, J. (1922). *The Journal and Essays of John Woolman* (A. M. Gummere, Ed.). Macmillan.
- Woolman, J. (1922). A Plea for the Poor. In A. M. Gummere (Ed.), *The Journal and Essays of John Woolman* (pp. 402-437). Macmillan. (Original work published 1763).
- Woolman, J. (1922). Conversations of the True Harmony of Mankind and How it May be Promoted. In A. M. Gummere (Ed.), *The Journal and Essays of John Woolman* (pp. 460-473). Macmillan. (Original work published 1772).



Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit: <http://creativecommons.org/licenses/by-nc-nd/4.0/>

