

THE HIDDEN ECONOMY OF SLAVERY: COMMERCIAL AND INDUSTRIAL HIRING IN PENNSYLVANIA, NEW JERSEY AND DELAWARE, 1728-1800

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ABSTRACT

Industrial and commercial businesses in the Mid-Atlantic region depended on a controllable workforce of slaves during the eighteenth century. A significant percentage of these slaves were hired from private citizens who regularly profited from the exchange. Because of the almost continuous movement of slaves across township, county and colony borders due to hiring-out practices, slaves in tax and census lists were routinely under-reported. The use of business accounts listing hires and labor done by slaves reveals the extent and importance of slave hiring and additional numbers of slaves owned in the region that were otherwise invisible.

In 1767, Pennsylvania's Charming Forge hired one of blacksmith John Herr's slaves to work as a hammerman at the company finery for the term of one year. Since the slave was unnamed, it is unclear if this was the same slave Herr hired out nearly every year until 1775. It is only known that the forge had the use of a slave hired from Herr annually.¹ In 1773, Tom May, manager of Pine Forge, hired James Whitehead's slave Wetheridge as a woodcutter on a monthly basis. Wetheridge worked at least three months, and Whitehead was paid at the end of the year for his slave's services.² Union Forge hired farmer William Wood's slave Bob to work in the chafery and to cut wood on an annual basis between 1785 and 1789.³ The fact that masters hired out slaves is not a revelation, and historians have written on various aspects of this topic for nearly half a century.⁴ What is unusual about these three cases is that Herr, Whitehead and Wood were not slaveholders—at least not according to contemporary tax lists and censuses.⁵

The purposes of this paper are twofold. First, to show that the hiring of slaves in Pennsylvania, New Jersey and Delaware was much more common than previously acknowledged, particularly in commercial and industrial work; and second to propose that slavery itself was more extensive in these three colonies-cum-states in the eighteenth century than scholarship has previously determined.

The first is the easier task, as evidence of hiring abounds in the extant records of eighteenth century commercial and industrial operations. The second is more problematic, because I have no absolute statement to make, such as "there were twice as many slaves in the region than we believed," or "rather than four percent of the area's population, fifteen percent were slaves!" My observations question the validity of some sources, particularly tax lists and censuses, which previously have been the basic determinants of

slave populations in the mid-Atlantic region. When other sources are brought in for comparison, it appears that slave populations were routinely undercounted, though to what extent is still to be determined.

The use of slave labor in commercial industry in the mid-Atlantic region was extensive.⁶ The tax lists from 1765 to 1787 reveal that 30 percent of the proprietors of commercial industries (iron furnaces and forges, rolling, slitting and stamping mills, oil and fulling mills, tanneries, distilleries, breweries, saw mills and commercial grist mills) owned slaves.⁷ Extant accounts also indicate that more than 30 percent of slaves not owned by commercial industries were hired by businesses to supplement their bound or free workforces. In other words, nearly two-thirds of the region's slaves were employed at some time in some capacity by commercial operations. The direct evidence comes from the eighteenth-century accounts of 80 commercial operations in Pennsylvania, New Jersey and Delaware.⁸

Of the 80 accounts studied, 52 of the businesses, 65 percent of the total, owned slaves. Sixty-seven (84 percent) of the companies hired slaves. Only 10 of the 80 operations (13 percent) neither owned nor hired slaves.⁹ The availability of slave labor, particularly slaves for hire, was vital to the continuance of most commercial businesses in the region during the eighteenth century.

The use of hired slaves was part of a widespread business methodology that weighed the need for labor against its availability, and weighed investment capital against the profitability of anticipated production. All commercial operations needed to maintain a core of full-time workers in order to keep production moving. Most full-time workers possessed a certain level of skill—founders, finers, chafers, and colliers in iron manufacture; tanners and curriers at tanneries; millers and coopers in grain, flour, oil companies; brewers, distillers and coopers in the beverage trade, and so on. Other workers, particularly the unskilled, while necessary at times in the production process, could be hired on a part-time basis. Woodcutters, ore-pounders, stackers and carters could be part-time workers in iron, for example. Other jobs that could fall into the part-time category are those that were either periodic or seasonal in nature. Potters, those who cast specific types of iron goods such as pots, pans, kettles and stove plates, usually only worked at an operation for a few days a month. Miners in the Mid-Atlantic region were limited to the period between late March and early November because of ground freezes, and work could also be delayed or foreshortened by heavy rains early or late in the season.

In a region where seasonality limited the productive use of labor for part of the year in most industries, a heavy investment in slave ownership was a poor business decision. In the mid-eighteenth century, the price of a mature male slave in good health was approximately L35, and maintenance can be estimated at six pence a day. Most companies, even large operations such as iron furnaces that could employ as many as 50 full-time workers and 200 part-timers in a year, simply could not afford the upfront capital investment in more than a handful of slaves. Companies that owned slaves only retained as many as were effectively employed year round. Tanneries typically owned only two or three slaves in a workforce of eight to ten in peak periods. The company-owned slaves

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worked at the chemical vats or the drying rooms, while hired workers treated new skins, loaded wagons, or carted goods. During slack periods, part-time hires would be let go, and the company slaves would make necessary repairs, or handle limited duties around the operation. Iron companies might own anywhere from four or five slaves to more than a dozen, depending on the size of the works—furnaces with fully equipped forges would need more full-time workers. Company slaves with skills could be employed as keepers in the furnace room or hammermen and finers at the forge. Unskilled slaves might form the nucleus of woodcutting crews. Other workers could be hired based on current need. In all, only about 35 percent of laborers in eighteenth-century commercial industries worked full-time, and 65 percent were part-timers.

While most part-time employees at Mid-Atlantic companies were free wage laborers, culled mainly from nearby farm families whose members were looking to earn extra cash or credit at company stores during slack periods in agriculture, these employees were often less dependable than bound labor. A few days or weeks labor for extra income might be deemed sufficient for a rural worker just when the company needed him the most. Part-time free workers were also more likely to take a day off if they felt like it. Bound labor from any source was more controllable and reliable. A company manager could estimate the amount of labor needed and the time necessary to perform a task, and hire a slave by the day, the month, or the year. Slaves could run away from a manager who hired them just as easily as they could run from their own masters, but most did not run and performed their duties as ordered.

Slaves were usually set to specific tasks when hired. Although 32 percent of the recorded hires were identified as only engaged in “work,” the rest were listed as doing a particular job. Notations in account books, ledgers and journals were sometimes entered on a daily basis, such as “Mordecai Lincoln’s Negro Penney and Negro Jack cutting cords.” Other entries were periodic, such as “Henry Staller’s Negro Chubb—one month’s work at the mine.” Both, however, reveal the nature and duration of the individual slaves’ tasks.¹⁰ The most common task for hired slaves was woodcutting. Thirty-one percent of the hires cut timber for sawmills, cordwood needed by furnaces and forges, wood for brick-house oven fires, lime kilns, and glass manufactories, wood for tannery vat fires, or simply firewood for cooking and heating. Twenty-seven percent of hired slaves worked at skilled jobs, such as forge work (including blacksmithing and finery), carpentry, colliery and cooperage. Two percent worked as carters or wagon drivers. Five percent, almost all hired by larger iron companies, were put to farm work on company lands, usually day work at harvest or at haymaking. Finally, three percent were hired for housework. These were the only females hired by companies, and were set to cooking, washing, and general cleaning chores, usually for male slaves or servants and the handful of resident free workers on company property. Slaves hired by commercial industries in the Mid-Atlantic region appear to be almost exclusively male—97 percent. Given the rate of hiring generally, it would not be unreasonable to believe that nearly all male slaves, excluding urban house slaves, in Pennsylvania, New Jersey and Delaware worked at some time for a commercial business.¹¹

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Companies usually paid daily, monthly and annual rates for hired bound workers that matched wages for free workers. In the mid-eighteenth century, a daily wage for an unskilled worker was approximately 2 shillings 6 pence, and a monthly rate was L3 5 shillings. Wages for hired slaves averaged 2s a day and L2 5 shillings a month. Since most hired slaves were also provided daily rations by the company at a cost of four to six pence a day, the wages were almost identical.¹²

The availability of slaves for hire not only worked out well for companies in need of part-time labor, but also for the slaveholders who hired them out. An eighteenth-century commercial entrepreneur needed a substantial amount of start-up capital to build and equip a mill or an ironworks, so much so that most businesses were partnerships of up to a dozen owners. Labor costs had to be met over time and tied to the profits of production, rather than expended as an up-front investment. While a business could not afford to invest several hundred or several thousand Pounds to purchase a full-time slave workforce and expect to recoup that investment even in a decade, a farmer who needed an extra laborer and could gather the purchase price for one slave could easily make back the purchase price of the slave by hiring him to local businesses. Figuring 300 work days in a year (even slaves got Sundays and holidays off), a farmer in the Mid-Atlantic, a region with between 150 and 180 agricultural growing days annually, could effectively use a slave for 200 days. If the farmer leased out the slave to a local business for three months during the year at a rate of L2 5 shillings per month, his return would be L6 15 shillings. In less than six years, the cost of the slave would be recovered, and in nine years, even the cost of his slaves' daily maintenance while on the farm would have been recouped. If the slave had a marketable skill, the recovery would be that much faster, as the owners of skilled slaves, like John Herr, could command as much as L4 per month.¹³

Since general inflation rates for commodities and wages were very low in the British colonies during the eighteenth century (both rose only about 50 percent across 100 years), the recovery of all costs of owning a slave could certainly be managed in nine years. Only during the Seven Years War and the War for American Independence did British America experience high rates of inflation. In those periods, however, labor costs also rose, allowing slaveowners to continue recouping costs.¹⁴

An example of continuing profits from slave hires comes from the War for American Independence. George Janeway, a merchant who operated shops in New York City and Elizabeth and New Brunswick, New Jersey from the 1760s through 1799 hired out five of his slaves regularly in the 1770s and 1780s to a variety of businesses, including tanneries, mills and merchant ships' captains. During the War for Independence, Janeway hired out his slave Sharp to Captain Daniel Shaw for work aboard a privateer bound for the West Indies. In 1779, Scipio and Jeame were hired out to the Continental Army, based in Northern New Jersey, at a rate of seven dollars a day each. At the time, a continental dollar was worth about 7d, equating to a daily rate of 4s 1p. Although they were not enlisted in the Continental Navy or Army, these slaves worked as support labor: hauling, digging, and general maintenance work. Even in a period of inflation, owners could find various ways to profit on the hired work of their slaves.¹⁵

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The majority of slave hires, nearly 70 percent, were on a monthly basis.¹⁶ This reflected most closely the needs of businesses that were trying to acquire reliable labor at a relatively low cost during peak seasons of production. Daily hires could be more costly and less reliable and yearly hires, unless for specific skilled jobs, might result in payment for too many non-productive days because of weather. By carefully balancing out the production needs of the business, the estimated profits on a yearly, quarterly or monthly basis, and the cost and reliability of various sources of labor, three-quarters of Mid-Atlantic businesses chose to routinely engage in hiring slaves.

Cost consciousness was a definite factor in eighteenth-century business decisions. Profit margins were low, usually less than ten percent over annual capital investment, and most companies were vulnerable to market fluctuations and the vagaries of weather. Any way that could be discovered to gain or hold onto money was an advantage. As today, discerning ways to save on taxes could keep profits in one's pocket. Real property, personal property and assessment taxes were a way of life for British colonials, despite their well-known aversion for them. Unfortunately, the cry "No taxation without representation" during the years leading to the War for American Independence could well have been "No taxation without, no taxation with, or no taxation in spite of, representation." Just as there is nothing for certain in this world but death and taxes, it would be naïve to believe that tax avoidance was not just as certain.

One property item that was routinely taxed as a means to raise revenue was slaves. The tax assessment varied over time, but between 1765 and 1787, slaveowners were annually taxed 3 to 4 shillings per slave. Business owners typically claimed only the slaves that they owned. Hires were not counted. Other slave owners could claim the slaves visible on their property at the time of assessment and avoid claiming and paying the tax on slaves whom they had hired out and were not in residence. The evidence that the "hiding" of slaves for tax purposes was a regular, if not routine, occurrence can be found by comparing contemporary tax and census lists with business accounts containing the records of slaves employed around an operation.

Hundreds of examples of discrepancies exist, but for the sake of brevity, I will only offer a few. In 1766, Warwick Furnace in Chester County, Pennsylvania, employed 23 slaves. The company's manager, Lynford Lardner, owned nine of these slaves, and they were the only slaves claimed on the annual county tax list. The rest of the slaves were hires. James Hockley, a mill owner in East Nantmill Township, where the furnace was located hired out two of his slaves to the company. Borich Becholt, a landowner in the same township, hired out three of his slaves to Warwick. Henry Ditlow of nearby Vincent Township hired out one of his slaves to the company as well. For the tax assessment, Hockley and Becholt claimed only one slave each, and Ditlow claimed none. At least four of the fourteen slaves hired by the furnace, nearly 30 percent, are not to be found in the tax lists.¹⁷

In 1771, 29 slaves worked at Peter Grubb's Cornwall Furnace in Warwick Township, Lancaster County, Pennsylvania. In the tax list, Grubb claimed two slaves. In the company records, it appears that only thirteen slaves were hired. Whether the remaining fourteen slaves belonged to Grubb is unclear. They may have been hired, but not re-

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corded as such in the accounts. In any case, Sam was hired from Frederick Williams of Lebanon Township, Caesar was hired from Nathaniel Giles of Philadelphia County, Emmanuel and Bacchus were hired from George Eby of Warwick Township, and Bobb, Cupid, and Nero were hired from Martin Gross, also of Warwick. Williams, Giles, and Eby were not assessed as possessing any slaves, and Gross claimed only one. Based on these accounts, at least 46 percent of the slaves recorded as hires at the Cornwall Furnace were not counted in the tax records.¹⁸

Arthur Lefferson owned an operated a tannery and currier and shoemaker's shop in Northampton Township, Pennsylvania from about 1760 to 1804. From 1775 to 1789, Lefferson owned two slaves and hired four to five slaves a year, along with eight free laborers at his operation. On the Bucks County tax assessments, Lefferson claimed two slaves in 1779, none between 1780 and 1783, and one in 1784 and 1785. John Holmes and Michael Mount claimed no slaves, while hiring out two and one respectively to Lefferson almost every year.¹⁹

Between 1779 and 1785, Greenwich Forge in Hunterdon County, New Jersey, employed from sixteen and nineteen slaves per year. Three of these slaves were owned by the company and employed full time refining iron. The rest were a mix of yearly, monthly and daily hires. In the Hunterdon County assessment lists for 1779 and 1781, the company claimed three slaves. Three slaves were hired in 1779 from James Morgan of Bucks County, Pennsylvania—directly across the Delaware River. Morgan claimed one slave in Bucks County 1779 assessment. John Dunlap, also of Bucks County, hired out his slave Andrew to Greenwich to drive a wagon. According to the 1779 assessment, Dunlap had no slaves. Hugh Hughes, who owned the Greenwich Forge property, but leased it to Richard Backhouse and Samuel Williams, hired out nine of his slaves to the ironworks and did not claim them in the county assessment. At best, one of the thirteen slaves hired by Greenwich made it into the tax lists.²⁰

Pennsylvania became the first state to begin the process of eliminating slavery in 1780, with the passage of the Gradual Abolition Act. This act required that slaveholders register all slaves in the state. The law did not free any slaves immediately, and it guaranteed slaveholders the labor of the children of current slaves until they were 28 years of age—including those born *after* 1780. In other words, this very conservative law only automatically freed the grandchildren of those held in bondage in 1780. The framework of this groundbreaking piece of legislation is, in itself, reflective of the contemporary importance of slavery in Pennsylvania. Despite the efforts of anti-slavery advocates to end the institution immediately, a gradual approach was taken which served the interests of slaveholders, particularly those with industrial and commercial investments. There was no reason for slaveholders to take the unenviable role of arguing against emancipation as long as they could influence the wording of the act to their own immediate advantage. The Gradual Abolition Act of 1780, while creating the appearance of support to the ideals of liberty and justice for all, guaranteed business interests the availability of enslaved labor for three more decades. Given this hedge, business owners began to slowly adjust their workforces to coincide with the gradual loss of slave labor only in the late 1790s.²¹

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In order to ensure that even future generations would be freed, the Pennsylvania Legislature wanted an accurate record of the slaves currently in the state. Slave owners who did not comply with the law and meet the registration requirements could have their slaves taken from them and automatically freed. Faced with this possibility, most slaveholders probably complied. This compliance, however, reveals some interesting discrepancies. A comparison of the Chester County tax list of 1780 with the registry of slaves may provide evidence of the frequency and extent of the non-reporting of slaves to avoid tax assessments.²²

There were 140 slaveholders in Chester County that supplied registration information on 332 slaves. On the 1780 rate list, only 79 taxpayers claimed to have slaves. This is a 43 percent avoidance rate. Also, of the 79 who did report slaves on the tax assessment, 37 claimed to own fewer than they later registered. In all, 212 slaves in the county were not listed in the 1780 tax rates, an underreporting of 63 percent.

One reason that slaveholders were able to avoid taxes by underreporting is the frequency of hiring itself. Slaves moved around so frequently, and not simply within townships, but throughout counties, and across county and even colonial and state borders. If a slaveholder chose not to report a slave, it was unlikely that he would be caught. This also reveals another reason for the inaccuracies—taxpayers usually reported property themselves, with only infrequent checks by government officials, particularly in the colonial period. One had to be somewhat careful, as in the case of well-known slaveholders, but underreporting was common. A farmer with one slave who was frequently hired out could very easily get away with claiming none. Mark Bird, ironmaster at Hopewell Furnace in Berks County, Pennsylvania, could not claim to have no slaves, but he could get away with claiming only 16 of 23 in 1779.²³ A third factor relates to the responsibility for collecting and attesting to the accuracy of the tax reports. The county commissioners were often slaveholders themselves, as was the case in the 1780 Chester County tax. Two of the three commissioners were slaveholders, and they not only claimed no slaves themselves, but also allowed other family members to forego claiming their slaves. If commissioners themselves were underreporting, they were more likely to let their fellows slide.²⁴

An example of the inconsistencies in reporting can be found in the York County, Pennsylvania tax lists from 1779 to 1783. In 1779, 297 slaves were claimed in the county. In 1780, 365 were reported. By 1782, only 240 were claimed. This could possibly reflect manumissions in the face of the 1780 gradual emancipation act, out-of-county sales of slaves, and out-migrations of slaveowners to different counties or states. In 1783, however, 584 slaves were counted in the county—an increase of 143 percent! Or, was it not an increase, but rather gross underreporting the previous year? The 1783 York list was a more complete census for tax purposes than had been previously taken and showed a diligence by the county commissioners that was rare in earlier assessments. The York accounting was also one of the few reports that clearly differentiated between servants and slaves. In a region that contained a high proportion of evangelistic Christian sects that were supposed to favor servants and be anti-slavery advocates, slaves outnumbered servants by twelve to one.²⁵ The relatively heavy concentration of slaves in the county was

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reflective of the number of ironworks (4) and mills (34) that employed bound labor either through ownership or hire.²⁶

In the 1970s, the United States Bureau of Statistics compiled estimates of colonial populations from 1630 to 1780. Drawn from numerous sources, including township, county and colony tax and census lists, these statistics differentiate between white and non-white populations. The percentages of slaves in the populations of the three colonies examined remained relatively stable between 1750 and 1780 at a combined four percent. Where discrepancies in the counting can be determined, slaves were underreported by approximately 45 percent. This does not mean that there were 45 percent more slaves in the region than previously believed, because the accounts, business, census and tax records are far from complete, and often are not comparable from year to year. Where they are comparable, however, there are problems. The records must be handled with care, and more comparisons of extant records must be done in order to get a clearer picture of Mid-Atlantic slavery in the colonial and early national periods.²⁷

What can be determined is that the hiring of slaves in the Mid-Atlantic region was more important, particularly for commercial industry, than has been recognized, and that there was probably a relatively larger number of slaves in the area than is given credit, maybe as many as one-third more. Additional research needs to be done in these records, and the records of other colonies. When dealing with slaves in regard to their status as property and their taxability, nothing should be taken for granted.

Appendix 1

Pennsylvania, New Jersey, and Delaware Commercial Records, 1725-1800

Pennsylvania

- Berkshire Furnace Accounts, 1767-1793, Historical Society of Pennsylvania (HSP)
- Berkshire Saw Mill Accounts, 1758-1774 (HSP)
- Mark Bird Saw Mill Ledger, 1763-1765 (HSP)
- Colebrook Furnace Ledger, 1791-1800 (HSP)
- Colebrookdale Furnace Ledgers, 1735-1766 (HSP)
- Cornwall Furnace Ledgers, 1764-1800 (HSP)
- Coventry Ironworks Ledgers, 1726-1796 (HSP); 1787-1799, Eleutherian Mills Hagley Library (EMHL); 1789-1791 Chester County Historical Society (CCHS)
- Durham Ironworks Ledgers, 1727-1789 (BCHS); 1744-1749 (HSP)
- Elizabeth Furnace Ledgers, 1767-1802 (HSP)
- Peter & Curtis Grubb Saw Mill Ledger, 1745-1750 (HSP)
- Peter Grubb Grist Mill Ledger, 1768-1786 (HSP)
- Hartshorne's Grist and Oil Mill Accounts, 1772-1781 (EMHL)
- Hopewell Forge Ledgers, 1765-1786 (HSP)
- Joanna Furnace Accounts, 1791-1799 (HSP)
- Arthur Lefferson Tannery, Currier and Shoemaker Accounts, 1775-1788, New Jersey Historical Society (NJHS)
- Mannheim Glassworks Accounts, 1763-1774 (HSP)
- Mary Ann Furnace Ledgers, 1762-1779 (HSP)
- Mount Hope Furnace Accounts, 1784-1802 (HSP)

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- Mount Joy (Valley Forge) Ledgers, 1757-1772 (HSP)
Mount Joy Saw and Grist Mill Accounts, 1757-1768 (HSP)
Mount Pleasant Ironworks Ledgers, 1737-1796 (HSP); 1782-1784, Berks County Historical Society
(Berks)
New Pine Forge Ledgers, 1744-1763 (HSP)
Oley Forge Ledger, 1796 (EMHL)
Parry's Grist Mill Accounts, 1770-1784 (BCHS)
Philadelphia Forge Accounts, 1749-1775 (HSP)
Pine Saw Mill Ledgers, 1733-1757 (HSP)
Pine Forge Ledgers, 1730-1800 (HSP); 1769-1777 (EMHL)
Pool Forge Ledgers, 1725-1790 (Berks); 1749-1759 (HSP)
Potts Brewery Accounts, 1758-1773 (HSP)
Joseph & Samuel Potts Saw Mill and Distillery Ledger, 1777-1780 (EMHL)
Thomas Potts Saw and Grist Mill Ledger, 1764-1773 (HSP)
Pottsgrove Furnace Ledgers, 1755-1795 (HSP)
Reading Furnace #3 Ledger, 1792-1801 (HSP)
Ross Grist and Saw Mill Ledger, 1770-1773 (EMHL)
Roxborough Furnace Ledgers, 1755-1765 (HSP)
Sarum Forge and Grist Mill Ledger, 1767-1771 (HSP)
Speedwell Forge Ledger, 1784-1800 (HSP)
Spring Forge #2 Ledgers, 1763-1765 (Berks); 1765-1800 (HSP)
Spring Forge #3 Ledger, 1772-1773 (EMHL)
Union Forge Ledgers, 1783-1795 (HSP); 1785-1789 (Berks)
Warwick Furnace Ledgers, 1747-1773 (HSP); 1788-1792 (CCHS)

New Jersey

- Andover Furnace Ledgers, 1783-1788, Alexander Library, Rutgers University (ALR)
Bloomsbury Forge Accounts, 1780-1784, Bucks County Historical Society (BCHS)
Brooklyn Forge Ledger, 1788-1791 (NJHS)
John Bryan Cider Mill Ledger, 1793-1798 (ALR)
Caleb Camp Grist Mill Ledgers, 1752-1797 (NJHS)
David Camp Saw Mill Ledgers, 1762-1787 (NJHS)
Changewater Forge Accounts, 1779-1789 (BCHS)
Chelsea Forge Accounts, 1779-1780 (BCHS)
Cooper's Grist Mill Accounts, 1793-1800 (NJHS)
Dumont's Grist and Saw Mill Accounts, 1768-1779 (ALR)
Grant Gibbon Grist and Saw Mill Accounts, 1764-1778 (ALR)
Greenwich Forge Accounts, 1778-1784 (BCHS)
Hanover Furnace Accounts, 1793-1803 (HSP)
Harrison's Saw and Fulling Mill Accounts, 1725-1766 (NJHS)
Holmes Grist Mill Ledgers, 1737-1760 (ALR)
Hopewell Ironworks Ledgers, 1741-1778 (HSP)
George Janeway Accounts, 1775-1787 (ALR)
Jacob Janeway Grist and Cider Mill Accounts, 1735-1747 (ALR)
Mehelm & Berry Grist and Oil Mills and Potash Works, 1772-1774 (NJHS)
Parkhurst Saw and Oil Mill Accounts, 1784-1800 (NJHS)
Thomas Potts Tannery and Currier Accounts, 1726-1744 (NJHS)
John Ralston Mill Accounts, 1782-1800 (NJHS)
Edward Randolph Grist and Saw Mill and Brick House Accounts, 1789-1804 (ALR)
Ringwood Ironworks Ledger, 1760-1764 (NJHS)
Amos & Eleazer Roberts Mill Accounts, 1788-1800 (NJHS)
Rockaway Forge Accounts, 1783-1784 (Berks)

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David Ross Saw Mill Accounts, 1756-1794 (NJHS)
George Ross Saw Mill Accounts, 1770-1773 (HSP)
Union Ironworks and Saw Mill Ledger, 1773-1774 (EMHL)
Van Neste & Van Lieuw Grist, Saw, and Oil Mill Accounts, 1772-1776 (ALR)

Delaware

Brandywine Mill Day Book, 1788-1789, Historical Society of Delaware (HSD)
Elk Forge Accounts, 1771-1800 (HSP)
Hamburg Mill Daybook, 1769-1783 (HSD)
Hockessin Oil Mill Accounts, 1772-1774 (HSD)
Lea Saw and Grist Mill Ledgers, 1773-1788 (EMHL)
Morton and Tatnall Grist Mill Ledger, 1774-1777 (HSD)
Patterson's Grist Mill Ledger, 1760-1773 (EMHL)
Pine Forge, Saw Mill and Distillery, 1777-1790 (EMHL)
Red Clay Creek Flour Mill Daybook, 1771-1775 (HSD)

Notes

1. Charming Forge Ledgers, 1763-1778, Historical Society of Pennsylvania (hereafter HSP).
2. Pine Forge Ledger, 1770-1773, HSP.
3. Union Forge Ledger, 1785-1789, HSP.
4. A listing of all the references to slave hiring would be endless. The best examination of hired slave labor in eighteenth and early nineteenth-century industry is Ronald L. Lewis, *Coal, Iron, and Slaves: Industrial Slavery in Maryland and Virginia, 1715-1865* (Westport, CT: Greenwood Press, 1979), 81-109. Robert William Fogel and Stanley L. Engerman detail the profitability of slave-hiring in the South in *Time On The Cross: The Economics of American Negro Slavery* (New York: WW Norton & Co., 1989), 52-58. Other worthwhile treatments of slave hiring include Richard B. Morris, "The Measure of Bondage in the Slave States," *Mississippi Valley Historical Review* 41 (1954): 227-253; Samuel Sidney Bradford, "The Negro Ironworker in Ante Bellum Virginia," *Journal of Southern History* 25 (1959): 201-214; Clement Eaton, "Slave-Hiring in the Upper South," *Mississippi Valley Historical Review* 46 (1960): 660-679; Robert S. Starobin, *Industrial Slavery in the Old South* (New York: Oxford University Press, 1970), 84; and most recently Charles B. Dew, *Bond of Iron* (New York: WW Norton & Co., 1994). It is obvious that the majority of the studies on slave hiring examine occurrences in the South. In the mid-Atlantic region, the most useful study of hired labor has been Paul G.E. Clemens and Lucy Simler, "Rural Labor and the Farm Household in Chester County, Pennsylvania, 1750-1820," in *Work and Labor in Early America*, ed. Stephen Innes (Chapel Hill, NC: Institute of Early American History and Culture by the University of North Carolina Press, 1988), 106-143. Clemens and Simler examine only free hired labor in the area, and do not include the extensive hiring of slaves during the same time period.
5. Chester County Rates, 1753-1760; Chester County Provincial Assessments, 1765-1767, Chester County Archives; Pennsylvania Archives v. 10-22, including county tax lists 1765-1787; Bucks County Tax Lists (fragments) 1737-1749, B.F. Fackenthal Collection, folio 44, Bucks County Historical Society; Northampton County Tax Lists 1762, 1764, Northampton County Papers, Historical Society of Pennsylvania. Hereafter, aggregate data from tax and census lists will be noted as *Tax and Census Data*.
6. Commercial industry is defined as those businesses engaged in the production or extraction of commodities intended for commercial sale. These include all iron companies, both forges and furnaces and iron mills, tanneries, distilleries and breweries (although not single stills, which mainly were for family usage), oil mills, saw mills, fulling mills, approximately 30 percent of extant grist mills that sold commercial quantities of both milled grain and flour, glass manufactories, stone quarries, iron and copper mines, brick-houses, and potash works.
7. They also owned them in the same proportion as other slave owners, holding 30 percent of the slaves in the region.
8. The business accounts examined are listed in Appendix 1. When referenced in relation to aggregate data, they will be hereafter referred to as *Mid-Atlantic Business Accounts*.

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9. A majority of the companies (61 percent) both owned and hired slaves. The information contained in the business accounts immediately reveals a possible discrepancy in the tax records. It would be odd if twice as many business owners who owned slaves had their accounts preserved than those who did not.

10. Coventry Ironworks Ledger 1727-1729; Colebrookdale Furnace Ledger 1752.

11. *Mid-Atlantic Business Accounts; Tax and Census Data*.

12. *Mid-Atlantic Business Accounts*.

13. *Mid-Atlantic Business Accounts*; Charming Forge Ledgers 1763-1778.

14. *Mid-Atlantic Business Accounts*; Anne Bezanson, et al, *Prices and Inflation During the American Revolution* (Philadelphia: University of Pennsylvania Press, 1951), 24-57. Seventy-two of the 80 commercial businesses studied operated their own stores, and the accounts of market exchanges and prices can be determined from 1727 to 1800 through these records. While there were periodic fluctuations in the prices of both commodities and labor, the overall inflation was between 45 percent and 55 percent. The greatest fluctuations occurred between 1755 and 1761 and again between 1773 and 1782. Company stores, however, continued to keep accounts in terms of British Pounds, some through the first decade of the nineteenth century, and used "hard" money equivalents rather than Continental Dollars as their base, even during the American Revolution. Most free workers and slaveholders paid for hired slave labor contracted to be paid in "hard" money, so the accounts are not convoluted by roller-coaster inflation rates of Revolution-era dollars. The cost of labor in terms of "real" money rose approximately 60 percent during the American Revolution, but returned to pre-war rates by 1784.

15. George Janeway Accounts, 1775-1787, Alexander Library, Rutgers University; Bezanson, *Prices*, 41-45; Leslie V. Brock, "Colonial Currency, Prices, and Exchange Rates," *Essays in History* 34 (1992). While most business accounts were kept in terms of British Pounds, the Continental Congress paid for goods and services with Continental Dollars.

16. Approximately 69 percent were hired by the month, 19 percent by the day, and 12 percent by the year. Almost all yearly hires were skilled ironworkers. *Mid-Atlantic Business Accounts*.

17. Warwick Furnace Ledger 1763-1767, HSP; *Pennsylvania Archives* v. 11, Chester County Tax Rates, 1766.

18. Cornwall Furnace Ledger 1770-1772, HSP; *Pennsylvania Archives* v. 17, Lancaster County Proprietary Tax List, 1771.

19. Arthur Lefferson Tannery, Currier and Shoemaker Accounts, 1775-1788, New Jersey Historical Society.

20. Greenwich Forge Accounts, 1778-1785, Bucks County Historical Society; Hunterdon County, New Jersey Assessment Lists, 1779 and 1781; *Pennsylvania Archives* v. 13, Bucks County Tax Lists, 1779-1787.

21. An Act for the Gradual Emancipation of Slavery (1780), Avalon Project at the Yale Law School, <http://www.yale.edu/lawweb/avalon/chrono.htm#18>; Berkshire Furnace Accounts, 1791-1793; Colebrook Furnace Ledger, 1791-1800; Cornwall Furnace Ledger 1796-1800; Elizabeth Furnace Ledger 1799-1802; Hanover Furnace Accounts, 1793-1803; Joanna Furnace Accounts, 1791-1799; Mount Hope Furnace Ledger 1799-1802; Pine Forge Ledger, 1799-1800; Reading Furnace #3 Ledger, 1792-1801; Speedwell Forge Ledger, 1784-1800, all Historical Society of Pennsylvania; John Bryan Cider Mill Ledger, 1793-1798; Edward Randolph Ledger, 1798-1804, Alexander Library, Rutgers University; Cooper's Grist Mill Accounts, 1793-1800, New Jersey Historical Society; Coventry Ironworks Ledgers 1787-1799, Eleutherian Mills Hagley Library.

22. An Act for the Gradual Emancipation of Slavery; *Pennsylvania Archives* v. 12, Chester County Rates, 1780.

23. Hopewell Furnace Ledger 1778-1779, HSP; *Pennsylvania Archives* v. 18, Berks County Register of Property, 1779.

24. *Pennsylvania Archives* v. 12, Chester County Rates, 1780. Of the Chester County commissioners, Andrew Boyd was a slaveowner, but did not claim any himself. His brothers, sister and sons collectively owned 7 slaves, none of whom were reported. David Cloyd's brother John owned 2 slaves, but only reported one. Benjamin Brennan does not appear to have owned slaves.

25. *Pennsylvania Archives* v. 21, York County Returns, 1779-1783.

26. Mary Ann and Cordorus Furnaces and Spring Forge all owned and hired slaves. Of the 69 commercial mills in the county, 49 percent owned slaves. Unfortunately, there are no records of the incidence of slave hiring at York mills in this period.

27. *Tax and Census Data*.

