

NBER WORKING PAPER SERIES

PRIVATE MONEY PRODUCTION WITHOUT BANKS

Gary B. Gorton

Working Paper 26663

<http://www.nber.org/papers/w26663>

NATIONAL BUREAU OF ECONOMIC RESEARCH

1050 Massachusetts Avenue

Cambridge, MA 02138

January 2020

This paper has benefitted enormously from the comments and suggestions of Olivier Accominotti and Stefano Ugolini. Also, thanks to Will Goetzmann, Charles Goodhart, Kate Hurst, Paul Schmelzing, Guillaume Vuilleme, Paolo Zannoni, Arwin Zeissler and participants in the Yale Economic History Lunch Group for comments and suggestions. Thanks to Jorge Colmenares-Miralles, Arwin Zeissler and Nicole Gorton for research assistance. Thanks to Kate Hurst for archival research on identifying the names of drawers, drawees, and indorsers. For archival work on the bills, and help with archives, thanks to Andrew Lewis, Umut Kav, Val Wilson, Nathaniel Stevenson, Jessica Minshull, Karen Young, James Darby, Lyn Crawford, Karen Sampson, Alison Mussell, Caroline Picco, Keri Nicholson, Sally Cholewa, and Sophie Volker. Thanks to John Nann, Stacia Stein, and Teresa Miguel-Stearns for help with legal cases. Also, thanks for help from Gregory Clark. The views expressed herein are those of the author and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2020 by Gary B. Gorton. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Private Money Production without Banks
Gary B. Gorton
NBER Working Paper No. 26663
January 2020
JEL No. E02,G21

ABSTRACT

I test the Dang, Gorton, and Holmström (2018) (DGH) theory that the optimal design of private money is debt backed by debt. I do this in the context of English inland bills of exchange (where all parties to the bill were in England), which were used as a medium of exchange during the Industrial Revolution in the north of England in the eighteenth and first half of the nineteenth centuries. These bills circulated via indorsements, committing each indorser's personal wealth to back the bill. A sample of bills from the period 1762-1850 is studied to determine how frequently they changed hands (liquidity/velocity) and to determine how their credibility was established. Some bills were backed by banks and others by the joint liability of indorsers only. I test the DGH theory by asking: Were bank-backed bills more liquid than the joint liability-backed bills?

Gary B. Gorton
Yale School of Management
135 Prospect Street
P.O. Box 208200
New Haven, CT 06520-8200
and NBER
Gary.Gorton@yale.edu

. . . *neither gold coin, Bank of England notes, nor country bank notes is virtually our standard: but that bills of exchange alone form our standard.* (Burgess (1826), p. 73).

1. Introduction

How is private money created such that it is accepted at par and widely used? That is, private money (whether in the form, e.g., of bank notes or checks) is best if there are no disputes over its value. Historically, it has been very difficult to create such money. One very important step in the development of private money was when it began being produced by banks. To understand this step and to test for the effect of banks on private money production, in this paper I study English inland bills of exchange.

Inland bills of exchange (where all parties to the bill were in England) were a unique form of private money that predominantly circulated in the industrial north of England in the eighteenth and first half of the nineteenth centuries. While debt, such bills were not produced by banks (though banks sometimes backed such bills) and differed from bank debt, such as bank notes or deposits, in fundamental ways. Bills of exchange circulated via indorsement, putting each indorsers' wealth at risk if the borrower failed.¹ In this paper I ask how bills of exchange could be acceptable as a means of payment? Who used them? And, finally, I ask whether bank-backed bills were more liquid than those backed by the wealth of indorsers. To try to answer these questions, I study a sample of almost 500 inland bills from 1750-1840 found in several English archives.

In every other case, privately produced money is the short-term debt of banks.² Such debt takes different forms: private bank notes, demand deposits, sale and repurchase agreements (repo), money market mutual funds, and financial commercial paper. In all these cases "banks" back their short-term debt with longer-term debt (maturity transformation). For example, demand deposits are backed by loans and repo is backed by specific bonds. Gorton and Pennacchi (1990) argue that for efficient transaction purposes and for safely storing value for short periods of time the short-term debt should be *information-insensitive* that is it should be such that no one can profitably produce private information about the underlying payoffs on the backing collateral and everyone knows this. There is no adverse selection and so such money is accepted at par without questions. Dang, Gorton, and Holmström (2018) (DGH) argue that the optimal way to achieve maximal information-insensitivity is debt backed by debt ("debt-on-debt"), short-term debt backed by long-term debt.

Historically, not all short-term bank debt has been information-insensitive. For example, private bank notes issued prior to the U.S. Civil War were information-sensitive. These notes did not trade at par some distance from the issuing bank, but at discounts that varied over time, requiring their use to involve consulting newspapers called bank note reporters to determine the current discount. See Gorton (1996, 1998). While the secondary market for such bank notes was efficient in the Fama sense (relevant risk factors were priced), they were not economically efficient because there were constant disputes and

¹ I follow the English spelling: indorse rather than endorse, etc.

² Firms that issue short-term debt are "banks" whether recognized by the government as such or not.

transactions costs associated with using them.³ It was some time before private bank money became information-insensitive. See Gorton (2017). As discussed below, inland bills of exchange did not involve risk discounts when used as a transactions medium; no risk was priced. The margin that adjusted was their liquidity.

I study two central questions. First, how were inland bills made information-insensitive (aside from the identity of the bill profferer), especially those bills that did not involve banks? Second, I test the DGH theory that debt backed by debt is the optimal design for private money. I do this by comparing the velocity (number of indorsements) of bank-backed bills to non-bank-backed bills.

There are three parties to a bill of exchange, the drawer is the person who makes the bill and the person to whom the bill is addressed is called the drawee. The drawee accepts the bill by signing the front of the bill, becoming the acceptor, and is then obligated to pay a specified person (the payee) or to order at a specified date. Once the bill is accepted it can be used as money by indorsing it over to a third party. The new holder of the bill can similarly use it by endorsing it to still another party. Here's one example of how bills worked as money. A shopkeeper, needing to pay a supplier, draws a bill on himself for £10 maturing in one month. The shopkeeper accepts the bill by endorsing it, thereby providing evidence of his indebtedness, and pays the supplier with it. The supplier may then use it to pay another shopkeeper or, needing cash, discount it with a merchant acting as a bill broker. See Willan (1970). Often the bill would be honored by the shopkeeper's London broker, where he had an account. Further, in some cases the acceptor, the party obligated to pay, was in fact a bank.

Ashton (1939, p. 104) gives an example of how bills worked. When Mr. Peter Stubs, a file maker, had payments to make he might instruct his creditor, Mr. Green, to draw a bill on him, as follows:⁴

<p>£10 Ten days after Sight pay Mr. Tho^s Green or order ten pounds Ster^l value in Acco^t which place to Acco^t without further advice. To Mr. Peter Stubs Warrington</p>	<p>Belfast 29th Octo: 1794 from Thos. Lyle Accepted P. Stub Nov. 6th</p>
--	--

In this example, Thomas Lyle was the drawer (lender), Peter Stubs the drawee (borrower) and Thomas Green the payee.⁵ After Stubs had written his name on the face of the bill, he became the acceptor, legally liable for payment. On the back of the bill is Green's signature. If Green then sent the bill to pay a debt, that receiver could also indorse it to pay his own debt, and so on. The important point about the example is that it was Stubs who initiated the bill, in order to make payment to a creditor.⁶ Also, the layout of the

³ Xu and Yang (2018) show the efficiency gains in the U.S. when national bank notes replaced private bank notes. The national bank notes were backed by U.S. Treasuries and traded at par.

⁴ This bill bore the imprint of a stamp duty of three pence (about which more below).

⁵ The sample of bills used here, discussed below, contains a bill drawn by Peter Stubbs of Warrington.

⁶ Olivier Accominotti and Stefano Ugolini have pointed out to me that there are other interpretations of the example. For example, it could have been that Stubs owed money to Lyle and Lyle owed money to Green. In this case, Lyle

names specifies the role of each party, like a modern check: the drawee\borrower is in the lower left corner; the drawer\lender is in the lower right corner.

Bills functioned as a medium of exchange via indorsement. The key feature of a bill was that *all* parties to a bill were liable (including all indorsers). Tournay (1851), p. 40-41: “The Indorsee or holder of a bill transferable by indorsement, is entitled to look to the acceptor for payment, and in case of non-payment by him when presented, then to the drawer and the last and all intermediate indorsers, or parties whose names are on the bill; the last indorser or any intermediate indorser, after payment as holder, is entitled to look to the acceptor and drawer, and all his preceding indorsers, to refund him; the drawer being entitled to look to the acceptor for payment. In the case of a note, the maker stands, as has been already observed, in the position of the acceptor.”⁷

This joint liability rule meant that the receiver of a bill in payment needed to know the identity of the party indorsing the bill and believe that this person was substantive. As well, knowledge of the identities of those other indorsers in the chain would further make the bill credible. So, as Ashton (1945) observed: “. . . since each successive holder indorsed it, the more it circulated the greater the number of guarantors of its ultimate payment into cash . . . What is remarkable is the high velocity (attested to by the large number of indorsements) which its circulation attained. And what is more remarkable is the extent to which it was used in small transactions” (p. 26).⁸

So, an inland bill of exchange was very different from short-term debt issued by a bank (e.g., a bank note or check). Unlike all other forms of private money, bills of exchange depended on the two transacting parties knowing each other in order to be information-insensitive, i.e., no more information needed to be produced other than the identity of the indorser.⁹ Personal knowledge of the counterparty, essential for a bill to be used as money, meant that there was likely a prior relationship. According to DGH the identities of the individual indorsers should be less relevant when the bill is backed by a bank. And if the bank is credible, as with individual indorsers, that is sufficient information. In that case, no party produces private information about the bank and the bill is accepted without questions. Thus, DGH argues that this bank debt-backed money is more liquid (here in the sense of more indorsements). This proposition is tested below.

Inland bills were widespread in the industrial north of England. They circulated in “. . . all of Lancashire, of the West Riding, of Yorkshire, and a large portion of the other great manufacturing districts in the heart of England” (Fullarton (1845, p. 39)). The “other great manufacturing districts” include, in particular, Suffolk and Staffordshire, the counties that were homes to the production of iron and steel (see, e.g., Ashton (1924) and Birch (1967)). Cotton was produced in Lancashire, where new machinery and

draws a bill on Stubbs which he can sell via indorsement in order to repay Green. And there are other interpretations of the events as well.

⁷ Williams v. Field (1694), 3 Salk. 68 established the right of the last indorser to sue any of the previous indorsers and also the issuer.

⁸ Wicksell (1936): “While every expansion of simple credit is necessarily bound up with increasing risk, the security of a bill as a commercial instrument increases with the number of indorsements it carries and consequently with the number of money payments that it has provided the means of obviating” (p. 63).

⁹ Though, note that with a check both the identity of the bank and check writer are relevant.

centralized production were first used (see Baines (1835), Chapman (1904), and Wadsworth and Mann (1968)). Cotton was the first major industry to use power-driven machinery on a factory scale. Even in the mid-18th century, the word “factory” meant a cotton-spinning plant (Cottrell (1980)). Bills were used in these counties. Burgess (1826):

In the manufacturing districts of Yorkshire and Lancashire, no man, generally speaking, thinks of paying for any commodity above the value of ten pounds, otherwise than in a bill after date. This practice is now very general throughout the northern and midland counties, and is increasing in other parts A bill for £100 payable after date, which to-day is paid at Folkingham for wool, to-morrow at Melton for horned cattle, the next at Leicester for sheep, and the succeeding day at Oundle for bark, is as much a part of the circulating medium, representing the transfer of commodities from hand to hand, as a bank-note for £100.” (p. 19-20).¹⁰

This economic growth in England’s north did not involve banks and the medium of exchange was not bank notes or checks. An Act of Parliament in 1708 restricted banks to be limited to no more than six partners. So, country banks were small.¹¹ Not only small, they frequently failed, and generally were not viewed as credibly safe. Instead, inland bills of exchange were used. Thornton (1802) writes “Liverpool and Manchester effect the whole of their larger mercantile payments not by country bank notes, of which none are issued by the banks, but by bills at one or two months due” (p. 44-45, footnote). And, in a renowned article T.S. Ashton (1945) wrote that: “It is well known that in the late eighteenth and early nineteenth centuries bills of exchange of small denomination were commonly used in the north of England, and especially in Lancashire, for purposes which, in other parts of the country, were served by coin or the notes of local banks” (p. 15).¹²

There are several related papers on bills of exchange.¹³ Cuadras-Morató and Rosés (1998) consider the use of bills as a medium of exchange during the industrialization of Catalonia, based on the archival records of three different textile firms that cover the period 1859-1860. The bills in Catalonia transferred via endorsement as in England. Their focus is on the determining the characteristics that made a bill acceptable in a transaction, for example the characteristics of the counterparty. Maixé-Altés and Iglesias (2009) study the system of inland bills of exchange in Spain, 1775-1885. Inland bills were used because the banking system was underdeveloped. They study the integration of the inland bill market by studying the bill exchange rates between Barcelona and five other Spanish cities. These rates reflected the relative supply and demand at the different locations relative to Barcelona. The bills were not used as money as in England. Santarosa (2015) studies individual bills over the period, 1780-1790, from the archives of a

¹⁰ According to Google maps, Folkingham to Melton is 46 km (28.5 miles), Melton to Leicester is 27 km (16.8 miles), Leicester to Oundle is 57 km (35 miles). So, the total distance is 130 km (81 miles).

¹¹ Joint stock banks were allowed in 1826. The legislation allowed banks with more than six partners, freely transferable shares, but were required to be outside a fifty-mile radius of London. And limited liability did not come into place until acts in 1855 with the Liability Act followed by the Joint Stock Companies Act of 1856.

¹² As evidence Ashton cites Thornton (1802), Fullarton (1845), Mill (1920), Wicksell (1936) and Von Mises (1934). Also see Heywood (1812, p. 22). I discuss this further below.

¹³ For the older literature see, e.g., Ashton (1945), Rogers (1995), King (2016), and Pressnell (1956).

French merchant house. These bills were used in international trade and were issued for large amounts. The focus is on the legal underpinnings that made bills useful in trade. She shows, among other results, that the likelihood of a bill being protested (the borrower does not pay) is decreasing in the number of indorsers. Here I study inland bills of smaller amounts that circulated as money, as opposed to credit instruments which traded at a discount.

Other papers study the use of English bills of exchange as credit instruments internationally include Xu (2019) and Accominotti, Piquero, and Ugolini (2019). Xu (2019) uses bills from the Bank of England's archives to study the long-run effects of English bank failures during the Panic of 1866 on international trade. Accominotti, Piquero, and Ugolini (2019) study the use of bills of exchange during the first globalization, relying on individual bills rediscounted at the Bank of England in 1906. Their focus is on constructing and analyzing the international linkages based on these bills.

There is a literature on testing implications of DGH, but none of those papers provide direct tests, as I do here. See Dang, Gorton, and Holmström (2019) for a survey.

Section 2 briefly provides some further necessary background on inland bills of exchange. Section 3 introduces the sample of bills to be studied. Section 4 looks at the identities and occupations of indorsers. In Section 5 I analyze what characteristics of bills were associated with a higher velocity, i.e., more indorsements. In particular, I compare bills where the borrower and payee were a large, well-known, London bank to bills backed solely by the wealth of the indorsers. Section 6 concludes.

2. Background

In this section I cover the minimum background necessary to understand inland bills generally.

A. Legal Standing

The bill of exchange was the first instrument to be recognized as negotiable by a court of Common Law in *Martin v. Bourne* (1602) (2 Croke, 6.). See Richards (1927), Kerridge (1988) and Rogers (1995). The court in *Hodges v. Steward* (1691), 3 Salk. 68 said: "When the bill is payable to J. S. [Steward], or order, there an express power is given to the party to assign, and the indorsee may maintain an action"; also see *Nicholson v. Sedgwick* (1698), 3 Salk. 67. The case of *William v. Field* (1694) established in a common law court that the last indorsee could sue any of the previous indorsers, as well as the issuer. Rogers (1995, p. 126): "The conception of the obligations of parties to bills that developed in the seventeenth century was of particular significance given that bills were frequently transferred from person to person by indorsement. The older view that the obligations in exchange contracts were based on delivery of money in exchange transactions would have been ill-suited to the bill circulation practices . . . "

In *Miller v. Race* (1758) (1 Burr. 452) Judge Mansfield wrote:

[Bills] are not goods, not securities nor documents for debts, nor are so esteemed; but are treated as money, as cash, in the ordinary course and transaction of business, by the general consent of mankind; which gives them the credit and currency of money, to all

intents and purposes. They are as much money, as guineas themselves are; or any other current coin, that is used in common payments, as money or cash.

Joint liability was established based on conceptually thinking of each indorsement as the issuance of a new bill. Chief Justice Holt put it (in *Anon. Skin. 343*), “the indorsement is a quasi-new bill, and a warranty by the indorser, that the bill shall be paid; and the party may bring his action against any of the indorsers, if the bill be not paid by the acceptor’ “. ¹⁴

Bills of exchange did *not* represent a security interest in any specific goods as collateral. Thornton (1802): “In order to justify the supposition that a real bill (as it is called) represents actual property, there ought to be some power in the bill-holder to prevent the property which the bill represents, from being turned to other purposes than that of paying the bill in question. No such power exists; neither the man who holds the bill, nor the man who discounts it, has any property in the specific goods for which it was given: he as much trusts to the general ability to pay of the giver of the bill, as the holder of an fictitious bill does” (p. 31-32).¹⁵ Thus bills were not backed by specific goods, making the wealth of the indorser the primary source of the backing.

B. The Widespread Use of Bills

The use of bills of exchange required that each indorser be recognized, so bills were used in densely populated areas, i.e., industrial and manufacturing areas and not agricultural areas. Hodges (1947):

One of the outstanding features of the Industrial Revolution in Great Britain was the rapid increase in the population during the nineteenth century which doubled from 9 million in 1850 to 18 millions in 1901 . . . another outstanding feature was the attractive power of industry, which drew the population from the countryside and concentrated it on the coal-fields. This process changed the whole face of the countryside, and new densely populated regions came into being in Lancashire, Yorkshire, the Scottish Lowlands, the Midlands, and parts of South Wales which before had been distinctly rural in character. (p. 62).

Inland bills of exchange circulated in the industrial north, the home of the iron and steel industry (Shropshire and Staffordshire) and the cotton industry (in Lancashire and Yorkshire), the cradle of the industrial revolution. This area is the belt of counties through the middle of England. Inland bills circulated in counties that were the heart of the industrial revolution. See Figure 1 below. Bills were not much used in the sparsely populated agricultural areas. Anderson (1970): “Most of the smaller local payments were made with paper drawn by one trader upon another. In these ways the inland bill facilitated the growth

¹⁴ For more background see Tournay (1851), Bayley (1826), Russell and MacLachlan (1859), Byles (1874), Jenks (1893), Beutel (1938), Rogers (1995), Dylag (2010) and Geva (2011).

¹⁵ Thus, the “real bills doctrine”, which said bills represented “real” transactions, was essentially a norm rather than a law. “Accommodation bills” were bills that were more explicitly not “backed”; See Rogers (1995), p. 223 ff.

of an active internal trade in the 'coal-salt triangle' of the Mersey estuary and its hinterland, and in the textile manufacture of Manchester and its satellites in East Lancashire" (p. 93).¹⁶

Contemporaries uniformly observed the widespread use of inland bills, e.g. Forbes (1860, p. 14), Gordon (1836, p. 11); the court in *Giles v. Perkins* 103 E.R. 441 (1807) noted that: ". . . the circulation of the town of Lancaster and the county was conducted in a great measure by bills . . . paid in, and afterwards paid away by the bankers . . .". Newmarch (1851): "The comparatively small bills of exchange for sums ranging from 10£ to 30£, and higher sums, which were so numerous in Lancashire and Yorkshire during the early part of the present century, had nothing in common with their somewhat discreditable predecessors. These bills were in great favour among the small manufacturers, and among dealers in wool, cattle, and corn. They were proverbial for their dirty appearance, the profusion of their indorsements, and for the much more valuable quality of being very rarely unpaid" (p. 154).

¹⁶ On the "coal-salt triangle" see T. C. Barker (1951).

Figure 1: The Counties of England in 1852



Source: Caird (1852).

Newmarch (1857) divides inland bills into three groups: (1) "Small Bills drawn upon smaller Retailers, and drawn by Retailers upon Consumers"; (2) "Medium Bills drawn by Wholesalers and Manufacturers upon Retailers and other Intermediate Dealers"; (3) "Large Bills drawn by Importers on Manufacturers and Wholesalers, and by Manufacturers and Wholesalers on Exporters" (p. 587). Large denomination bills did not circulate as money, although they were transferred via indorsement, particularly in the London discount market. Cameron (1967, p. 51): "Many bills, perhaps most, performed no monetary function at all, others did so only once or twice in the course of their existence. Still others, however, especially the small bills characteristic of Lancashire, circulated from merchant to merchant with dozens, even scores, of indorsements" (p. 51). In Newmarch's categorization, the first and second categories were the bills likely to function as money, but the line between "money" and "credit" is not clear-cut.¹⁷

Further, we do not know what denominations correspond to "small" and "medium". John Moss, in testimony before the House of Commons in 1836:

You have an opportunity of seeing every description of bill of exchange that is in ordinary use in Lancashire; what is the lowest amount generally which you discount, or which comes into your hands?—Very few under 20£ Do you ever see any under 10£? —Very seldom, perhaps one in a week (p. 230).¹⁸

How many indorsements were there typically? Lewis Loyd, Esq. in 1826, who was a banker in London and Manchester, testified that there were bills that had over 120 indorsements.¹⁹ In his testimony before the House of Lords, Loyd testified as follows:

Have you not seen bills of exchange . . . for the value of 10£, with fifty or sixty names upon them?

Yes, with twice that number; I have seen slips of paper attached to a bill as long as a sheet of paper could go, and when that was filled another attached to that.²⁰

Such contemporary accounts then have been repeated in the secondary literature. For example, Mill (1920): "Many bills, both domestic and foreign, are at last presented for payment quite **covered with indorsements**, each of which represents either a fresh discounting, or a pecuniary transaction in which the bill has performed the functions of money. Within the present generation, the circulating medium of Lancashire, for sums above five pounds, was almost entirely composed of such bills" (emphasis added; p. 519). Lancaster and nearby areas were concentrated in bills. John Gladstone, a businessman from Liverpool testified in 1826 that " . . . bills of exchange, which from the nature of our business, and the

¹⁷ Pressnell (1969) in a review of Cameron (1967) wrote: "Cameron thus meets the familiar dilemma that a precise line between 'money' and 'credit' may be useless, whilst a useful line may be imprecise" (p. 129).

¹⁸ Selection of Reports and papers of the House of Commons: Currency and Banking (1836), Volume 29.

¹⁹ See Parliamentary Papers: 1780-1849, Volume 52, Part 2, p. 168.

²⁰ From page 186 of the "Selection of Reports and papers of the House of Commons: Currency Banking, Volume 29."

manner in which it is conducted, form by far the greater part of the circulating medium, all that is required for minor purposes consists entirely of old, or Bank of England notes” (p.217).²¹

Newmarch (1851) set out to estimate the amount of bills of exchange circulating in England, for the years 1828-1847. Newmarch was not the first. Heywood (1812) also produced rough estimates; see Pressnell (1969), p. 171, on Heywood’s estimates. Leatham (1840) made more careful estimates; see Pressnell, p. 172. Estimates of both Heywood and Leatham were based on stamp duties.²² Also, there were estimates by Vansittart, Chancellor of the Exchequer, *Hansard*, April 9, 1818, col, 1243; also by Johnstone (1811). Cameron (1967): “[Chancellor of the Exchequer Nicholas] Vansittart] estimated the average daily circulation of bills in 1793 at £200 million, and Benjamin Heywood, a Liverpool banker, accepted the figure as does Pressnell, at least as a rough order of magnitude [see Pressnell (1956, p. 171)]. It seems utterly fantastic, however, that the daily circulation of bills should equal or surpass the annual national income” (p. 44). Newmarch’s (1851) estimates which are the most extensive, and widely accepted, are discussed below and form part of the basis for Table 1, which shows the components of the English money supply in this period.

Table 1: U.K. Money Supply Components

	1775	1800-1801	1811	1821	1831	1844	1855
Components of Money Stock and Means of Payment (£ millions)							
Specie	16	20	15	18	30	36	50
Banknotes	10	25	45	32	29	28.5	26.7
Deposits	A	5	15	25	40	80.5	145
Total (M1)	26	50	75	75	99	145	221.7
Bills	37	115	140	76	67	75	153
Total (M2)	63	165	215	151	166	220	374.7
Components of the Means of Payment (percentages)							
Specie	25.4	12.1	7	11.9	18.1	16.4	13.3
Banknotes	15.9	15.2	20.9	21.2	17.4	12.9	7.1
Deposits	a	3.0	7	16.6	24.1	36.6	38.7
Bills	58.7	69.7	65.1	50.3	40.4	34.1	40.9
Total (M2)	100	100	100	100	100	100	100
National Income (£ millions) and Velocity of Circulation							
National Income	135	196.7	255.9	247.4	290.7	403.8	474.5
V1 (=Y/M1)	5.2	3.9	3.4	3.3	2.9	2.8	2.1
V2 (=Y/M2)	2.1	1.2	1.2	1.6	1.75	1.8	1.3

Source: Cameron (1967); abbreviated version of Table II.2 (p. 42). According to Cameron, “a” indicates that “due to the dubious ‘moneyness’ of deposits in the eighteenth century, they have been included in

²¹ The sample here, discussed below, has a bill indorsed by John Gladstone.

²² Stamp duties had to be paid on new bills based on amount and maturity. See Appendix Table A1.

‘Other means of payment’ rather than in ‘Total money’’. Cameron (1967) does not list “bills” but says “other”. However, the source he gives is Newmarch (1851).

Most instructive is the line with bills as a percentage of the means of payment, for different years. Until 1831 half of the money supply is bills of exchange and thereafter it declines to 40 percent. Cameron (1967): “Although the use of bills as currency probably declined somewhat with the developments of checking facilities in the 1830’s and 1840’s, they still constituted an important part of the total means of payment at least as late as the 1850’s” (p. 50).²³ Note, however, that Cameron (1967), using Newmarch’s (1851) numbers may have included bills that were purely credit instruments, rather than solely bills that circulated as a currency. Again, there is no sure way to distinguish.

C. The Use of Bills in Transactions²⁴

In the Introduction we saw an example of a bill involving Peter Stubbs. There were many ways in which a bill of exchange could be used. And we have no data on which ways were typical or more often used. Here are some more examples to illustrate the flexibility of bill usage.

Suppose a country manufacturer buys inputs from someone other than the factor to whom the manufacturer’s output will be sold. To pay for the purchase of the inputs, the manufacturer could draw a bill on his factor payable to the supplier of the inputs. In effect, the factor is lending to the manufacturer to pay the supplier. The factor can repay from the proceeds of selling the manufacturer’s goods in the future. It could be that the manufacturer has already delivered the goods to the factor who has, in fact, sold them. If the bill was drawn, accepted, and paid after the factor sold the goods and collected the proceeds, then the transaction is a funds transfer.

Such funds transfers were extensive. A system of correspondent London banks, called the London Agency System, served to use bills to transfer funds from capital surplus regions to capital deficit regions. Black (1996): “. . . in regions of capital deficit, bills would be sent to the bank’s London agent or . . . to the bill brokers for re-discount. Brokers in the London market could place bills with those having surplus funds for investment . . . bill brokers acted mainly as agents, linking those who had bills to discount with those holding surplus funds seeking short-term investment” (p. 118). Also, see Pressnell (1956, p. 75 ff.).

Here’s another example that will be relevant later. The manufacturer sells good to the factor now, or for future delivery. The factor has a relationship with a bank. So, the factor can ask the manufacturer to draw a bill on the bank, say with maturity three months. The manufacturer can sell the bill to another party, who at maturity presents it to the bank. Perhaps contemporaneously the factor deposits the bill amount at the bank. Here, the bank is liable for repayment and, in effect, guarantees the factor’s credit. In this example, the factor’s name does not appear on the bill.

Suppose the factor wants to buy goods from the manufacturer but does not have the cash. He can draw a bill on his bank, which he can then sell to another party to obtain the cash. This third party presents the

²³ There is some dispute about why inland bills declined; see Nishimura (2010).

²⁴ I am indebted to Olivier Accominotti and Stefano Ugolini for clarifying these examples.

bill to the bank at maturity, by which time factor, having sold the goods, repays the bank. The manufacturer's name does not appear on the bill.

D. As Money, Did Bills Trade at Par?

This is a difficult question to answer. As a credit instrument for a large amount of money, the bill would trade at a discount in the London market. This discount market was highly developed and extensive; see King (2016).

But what about smaller denomination bills that circulated as money? In pre-Civil War America, private bank notes circulated at discounts some distance from the issuing banks.²⁵ Private bank notes were demand instruments which were the liabilities of individual banks and the discounts reflected risk factors (see Gorton (1996, 1999)). There are two issues: discounting for the time value of money, because bills had a maturity, and discounting for default risk. Larger denomination bills were discounted for the time value of money. It is not clear that this was true when used as money. Thornton (1802), p. 42:

Bills, it is true, generally **pass among traders in the country without there being any calculation or regular allowance of discount**; the reason of which circumstance is, that there is a generally understood period of time for which those bills may have to run, which, according to the custom of traders, are accepted as current payment. If any bill given in payment has a longer time than usual to run he who receives it is considered as so far favouring the person from whom he takes it; and the favoured person, has to compensate for this advantage, not, perhaps, by a recompence of the same kind accurately calculated, but in the general adjustment of the pecuniary affairs of the two parties. (Emphasis added.)

Here it may be that the relevant phrase is “traders in the country”, as opposed to in London. This distinction between London at the country appears to have been recognized by the courts. In *Giles v. Perkins* 103 E.R. 477 the court wrote:

Bankers in London, upon the receipt of undue bills from a customer, do not carry the amount directly to his credit, but enter them short, as it is called; that is, note down the receipt of the bills in his account, with the amount, and the time when due, in a previous (or inner) column of the same page; which sums when received are carried forward into the usual cash column.

But in the country, if the bills have not long to run, they enter them in a gross sum with cash to the credit of the customer, giving him either cash or liberty to draw. Such bills are therefore regarded by country banks as their property.²⁶

²⁵ In the U.S. pre-Civil War period private bank notes were discounted from par when they circulated away from the issuing bank. Roughly 1500 bank notes of different banks circulated, depending on the year. Consequently, there was a well-developed market for bank notes with fluctuating discounts. See Gorton (1996, 1999).

²⁶ Also quoted by Horsefield (1952, p. 316).

But, Thornton (1802) is not definitive on the question. In fact, just before and after the paragraph quoted above, Thornton suggests that bills were discounted.²⁷ But, again, his comments are clouded by the murky line between a credit instrument and money.

More important, however, is the question of whether default risk was priced, as in the U.S. pre-Civil War private bank note markets. It seems that this was not the case. Contemporary observers do not mention this and there were no discounts listed in newspapers, other than the (time value of money) discount rate on credit instrument bills, typically of larger amounts, trading in London. Further, the risk that would need to be priced concerned the wealth of each individual indorser, and the probability of all the parties defaulting jointly. This is very different than pricing the risk of a single bank defaulting. There could not possibly be discounts published for each combination of parties to a bill. So, it seems that there was no pricing of default risk, consistent with information-insensitivity. No discounting for default risk suggests that parties to these bills were viewed as sufficiently wealthy to make the bills safe.²⁸

E. Banks and Bank Notes

Why were bills of exchange used as a hand-to-hand currency rather than bank notes? Banks in England during this period were small partnerships (limited to six partners) and their notes circulated in a limited area near the bank (Ashton (1961)). Unknown Author (1821): “The immense extent of *mercantile bills of exchange* circulating in England, appears to be connected with the restriction on provincial Bank partnerships . . . [which] . . . have precluded the use of local Bank notes . . .” (p. 46; emphasis in original).²⁹ The restriction to six partners meant that banks were small and were prone to fail. Horsefield (1952): In the late 1700s: “. . . private bankers . . . frequently went bankrupt” (p. 309). Norwood (1858) documents that British banks generally were prone to become bankrupt.

This was due largely to the frequency of banking panics. James (2012, p. 290): “Panics were frequent and their extent widespread in late eighteenth and early nineteenth-century England involving numerous bank failures. Even with his rather conservative assessments of ‘failure’, Pressnell (1956, p. 443) found in England between 1750 and 1830 at least 343 self-declared country ‘bankers’ failed – 334 of them between 1790 and 1826.” James (2012, p. 291): “Financial crises occurred with remarkable frequency in eighteenth-century England.” T. S. Ashton (1959) identified thirteen – in 1701, 1710, 1715, 1720, 1726, 1745, 1761, 1763, 1772, 1778, 1788, 1793, and 1797. In the first quarter of the nineteenth century we might add three more – 1810/11, 1815, 1825 (or perhaps five, counting 1803 and 1819). But Hoppit (1986, pp. 51, 56) argues that crises before 1770 in both their origins and effects were restricted to the areas of public credit and the national debt. In the crisis of 1825, there was a widespread run on the banks in the North. Subsequently two attempts to introduce notes into Lancashire failed (Pressnell (1956, p. 177).

²⁷ This was pointed out to me by Olivier Accominotti and Stefano Ugolini.

²⁸ Accominotti and Ugolini report (in a private communication) that there is evidence that in the London market bills were sometimes referred to as “first class bills” or “the best bills”, holding maturity constant. So, there seems to have been some discrimination in the London market.

²⁹ The reprint of this book lists the author as “Unknown Author” and not Anonymous.

Cameron (1967): “Lancastrians had had several unhappy experiences with bank failures . . . notably in the crisis of 1788, and these produced lasting effect. The result was that Lancashire was the only country that had no significant local note circulation of its own” (p. 26). During the period 1750-1830, at least 343 ‘bankers’ (firms describing themselves as such) failed (Pressnell (1956, p. 443). In Lancashire there was a particular aversion to banks (Hughes (1906), p.37). Pressnell (1956): “The experience of Lancashire with private banks during the crisis of 1788 encouraged neither the replacement nor even the supplementation of the bill of exchange by privately issued notes” (p. 174). “. . . created a permanent suspicion of bank-notes” (p. 174). “The memory of 1788 lived long with the business community of Lancashire” (p. 174). In 1807 following the failure of many banks in Yorkshire, an editorial in the *Liverpool Advertiser* noted: “We have ever been of opinion (and our opinion is justified by daily experience) that the circulation of provincial bankers’ paper is highly injurious to the public interest . . . To the honour of Lancashire be it known, not a single note is issued by any banking house in the county” (quoted by Hughes (1906, p. 38)).

It was not that bank notes were simply not used in Lancashire and surrounding areas. They were actively opposed. John Gladstone, a merchant from Liverpool, testified before the House of Commons that:

In fact, there is no local paper issued?

None that I am acquainted with, in our part of Lancashire: on the borders of the county adjoin Yorkshire, there are some country banks that issue promissory notes, but I believe not on a large scale.

Were those notes so issued, countenanced or discouraged by the leading manufacturers and merchants of Lancashire?

Decidedly discouraged, so much so, that I recollect, about twelve months ago, a meeting of the manufacturers in Preston [the capital of Lancashire County] was called, for the purpose of collecting and sending away all the notes of that description that had go into circulation. (p. 217)³⁰

Bank of England bills were only infrequently used in commercial dealings outside London; see Burgess (1826), p. 27.

3. The Sample of Bills

A sample of bills was collected from the archives of the Hong Kong and Shanghai Bank Corp., Cheshire Archives, Shropshire Archives, Barclays Archives, Lancashire Archives, Lloyd’s Bank Archives (which includes the Bank of Scotland archives) and the Royal Bank of Scotland archives.³¹ The bank archives each cover other banks because these banks are the products of many mergers over the last several centuries. Barclays, for example, is the product of 250 mergers, amalgamations, or purchases.³² Photographs of the

³⁰ Selection of Reports and papers of the House of Commons: Currency and Banking (1836), Volume 29.

³¹ Many other archives were also investigated without success. These include, among others, the University of Glasgow Archives; the National Archives; the University of Nottingham Archives; Bank of England Archives.

³² See <https://www.archive.barclays.com/items/browse?type=21>.

front and back of each bill were taken and, as discussed below, the indorsements on the back were counted and analyzed.

What period should be covered to study inland bills of exchange? Pressnell (1956) in his study of English country banking focuses on the period 1760-1830, although these are “boundaries of convenience rather than precision” (p. 2). Also, Cameron (1967) in his study of the role of banking’s role in industrialization says: “. . .1750 marks the effective beginning of ‘country banking’ . . . At the other end 1844 is a clear watershed in English financial history” (p. 15).³³ For the sample here, inquiries were made at a number of archives as to inland bills from 1750-1840. In the sample, discussed below, the earliest bill is 1762 and the latest is 1850.

A. Description and Summary of the Sample of Bills

The sample period is 1762-1850. The sample size is 482. The sample can be divided into three groups, as explained in more detail below. In two groups the bills were accepted by banks, Glyn Mills and Barclays. For these two groups indorsers risked their own wealth, but there was a bank at the end of the chain. The remaining group is the complement of the other two.

Table 2 below provides a description of the sample of the full sample and the sample minus bank-backed bills, called (All Other). For the full sample, the median maturity is three months and the median amount from Table 2 is £100. This is a very high amount, well out of the range of laborers, for example.³⁴ So, when inland bills are described as “a hand-to-hand” medium of exchange, that must refer to bills of smaller amounts. Table 3 shows the descriptive statistics for the bills accepted by the Glyn Mills bank and those accepted by Barclays Bank. (The panel labeled “All Other” shows that the non-bank-backed bills look like.)

³³ The Bank Charter Act of 1844 (sometimes called Peel’s Banking Act because it was passed under the government of Robert Peel) restricted the powers of English banks and gave the Bank of England exclusive note-issuing privileges. See Horsefield (1944).

³⁴ £100 in 1825 would correspond to at least £8,000 in today’s pounds or about \$10,000. See "Five Ways to Compute the Relative Value of a UK Pound Amount, 1270 to Present," MeasuringWorth, 2019. Also, see Lawrence H. Officer and Samuel H. Williamson, "Computing 'Real Value' Over Time With a Conversion Between U.K. Pounds and U.S. Dollars, 1791 to Present", MeasuringWorth, 2019.URL: www.measuringworth.com/ukcompare/

Glyn Mills and Barclays bills are on average for smaller amounts and shorter maturities than the other bills: Barclays: 34 pounds and 1.3 months; Glyn Mills: 51 pounds and 1.67 months; All Other: 307 pounds and 3.5 months. These significant differences foreshadow what will be found below. To preview what I expect the regression results to show, here are average signatures in the sample: 4.88 Glyn Mills; 1.52 Barclays; 2.68 All Other. These three groups seem very different, as explained below.

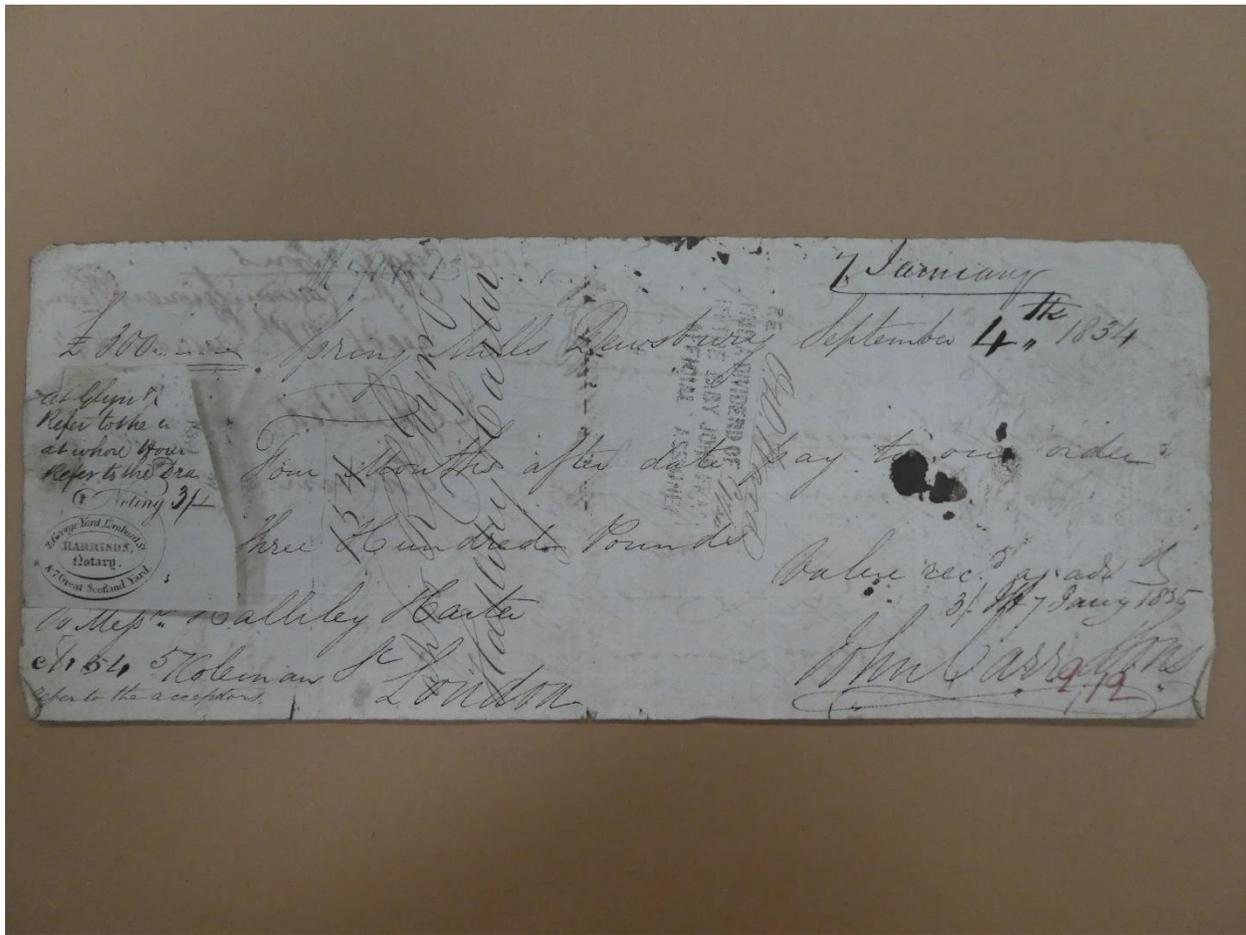
Table 2: Descriptive Statistics

	<i>Full Sample</i>				<i>All Other</i>			
	Year	Maturity (months)	Amount (pounds)	Signatures (number)	Year	Maturity (months)	Amount (pounds)	Signatures (number)
Minimum	1762	0.10	2.63	0	1762	0.23	7.18	0
25th Percentile	1814	2.00	30.39	2	1835	3.00	108.88	2
Median	1834	3.00	100.00	3	1839	3.00	210.90	2
3rd Quartile	1841	4.00	290.19	4	1843	4.00	445.20	4
Maximum	1850	6.00	1,870.35	14	1850	6.00	1,870.35	10
Average	1827.28	2.80	209.77	3.31	1835.65	3.52	307.28	2.68
Std. Deviation	15.77	1.37	267.54	2.55	14.44	1.19	283.25	1.86
Sample Size, N =	482	482	482	482	300	300	300	300

Table 3: Descriptive Statistics for Bank-Backed Bills

	<i>Accepted by Glyn Mills</i>				<i>Accepted by Barclays</i>			
	Year	Maturity (months)	Amount (pounds)	Signatures (number)	Year	Maturity (months)	Amount (pounds)	Signatures (number)
Minimum	1814	0.10	2.63	1	1794	0.23	4.75	0
25th Percentile	1814	1.00	19.68	3	1807	1.00	19.00	0
Median	1814	2.00	30.00	4	1812	1.00	23.05	0
3rd Quartile	1814	2.00	50.00	6	1814	2.00	50.00	2
Maximum	1814	2.50	1,609.85	14	1823	2.00	86.70	10
Average	1814.00	1.67	51.88	4.88	1810.76	1.32	34.03	1.52
Std. Deviation	0.00	0.61	137.22	2.94	7.04	0.58	23.46	2.61
Sample Size, N =	153	153	153	153	29	29	29	29

The median numbers of signatures seems low compared to the descriptions cited above. It could be, for example, that bills with many signatures were less likely to survive because of the wear and tear. But, further, it is not easy to count the number of indorsements. The photograph below shows an extreme example. The first image is the front of the bill and the second image is the back of the bill, with the indorsements. How many indorsements are there on this bill? Signatures were counted only if they were readable. But on many bills there appear to have been other signatures, but which have faded or worn away. These could not be counted. Most bills are not so complicated as this example, still the number of signatures is to some extent ambiguous. Later, we will study the identities of the indorsers in which case the exact name must be determined.



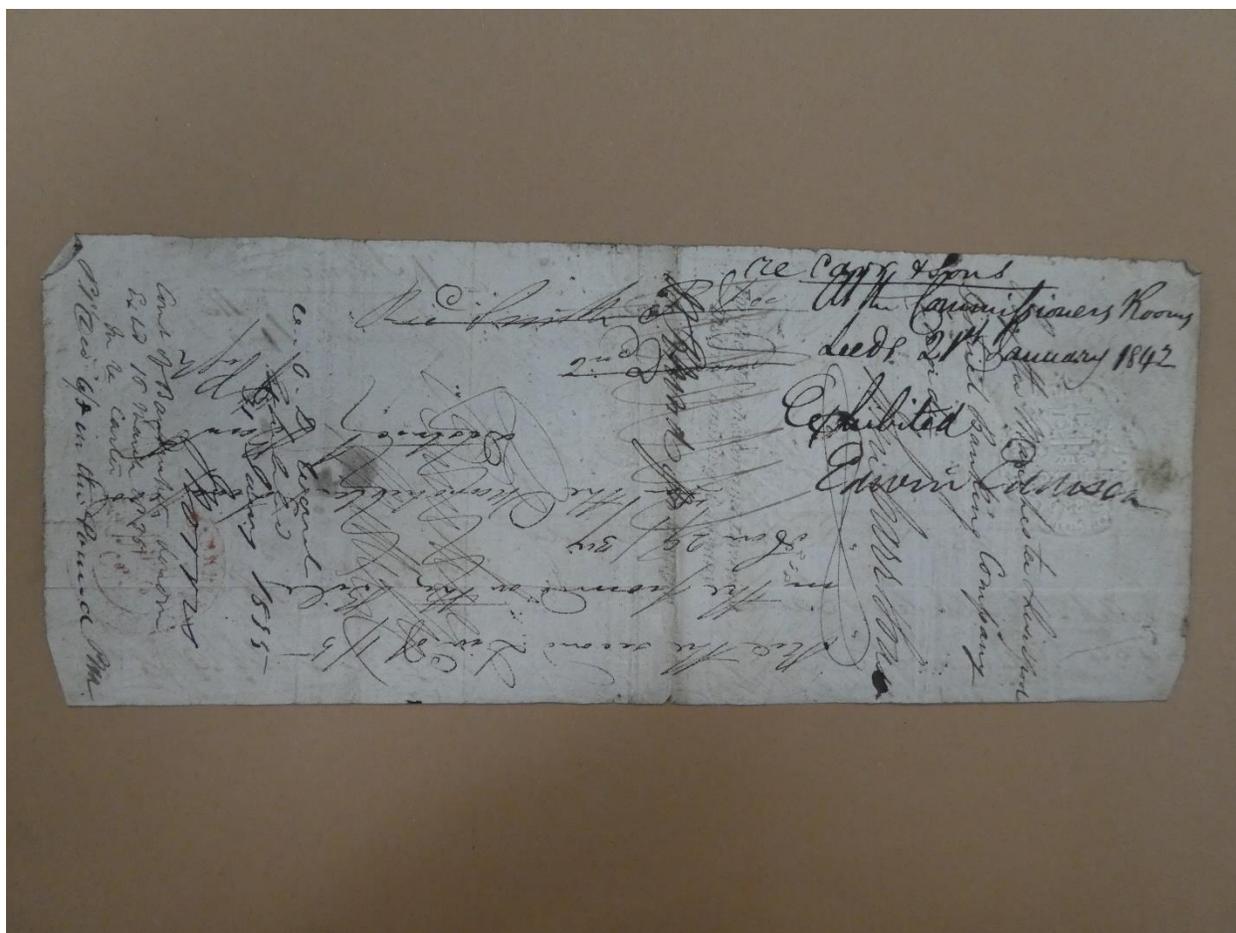
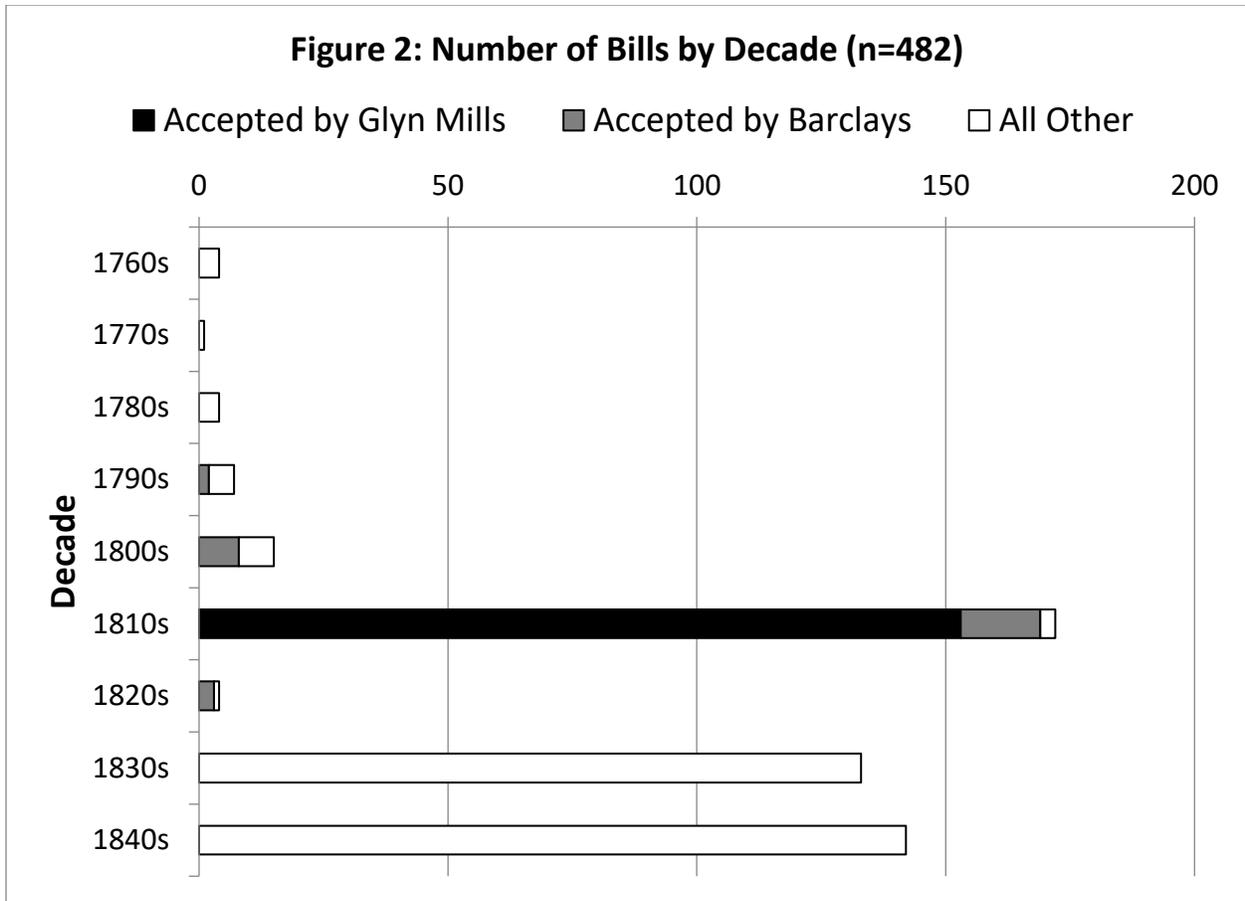


Figure 2 below shows the distribution of bills by decade and source (e.g., RBS archives) and shows bills for the three groups. Figure 3 shows the distribution of bills by maturity. Very few bills had a maturity longer than four months. The maturity distribution is not totally concentrated in bills with a three-month maturity, as suggested by some sources. Burgess (1826): "... except in Lancashire, where the established practice amongst bankers and traders is, to draw bills at three months; the deviation from which is the exception to the rule. And in consequence, a bill at three months is considered in Lancashire and part of Yorkshire, which, as regards bills, is almost half the kingdom, to be a money payment" (p. 24).



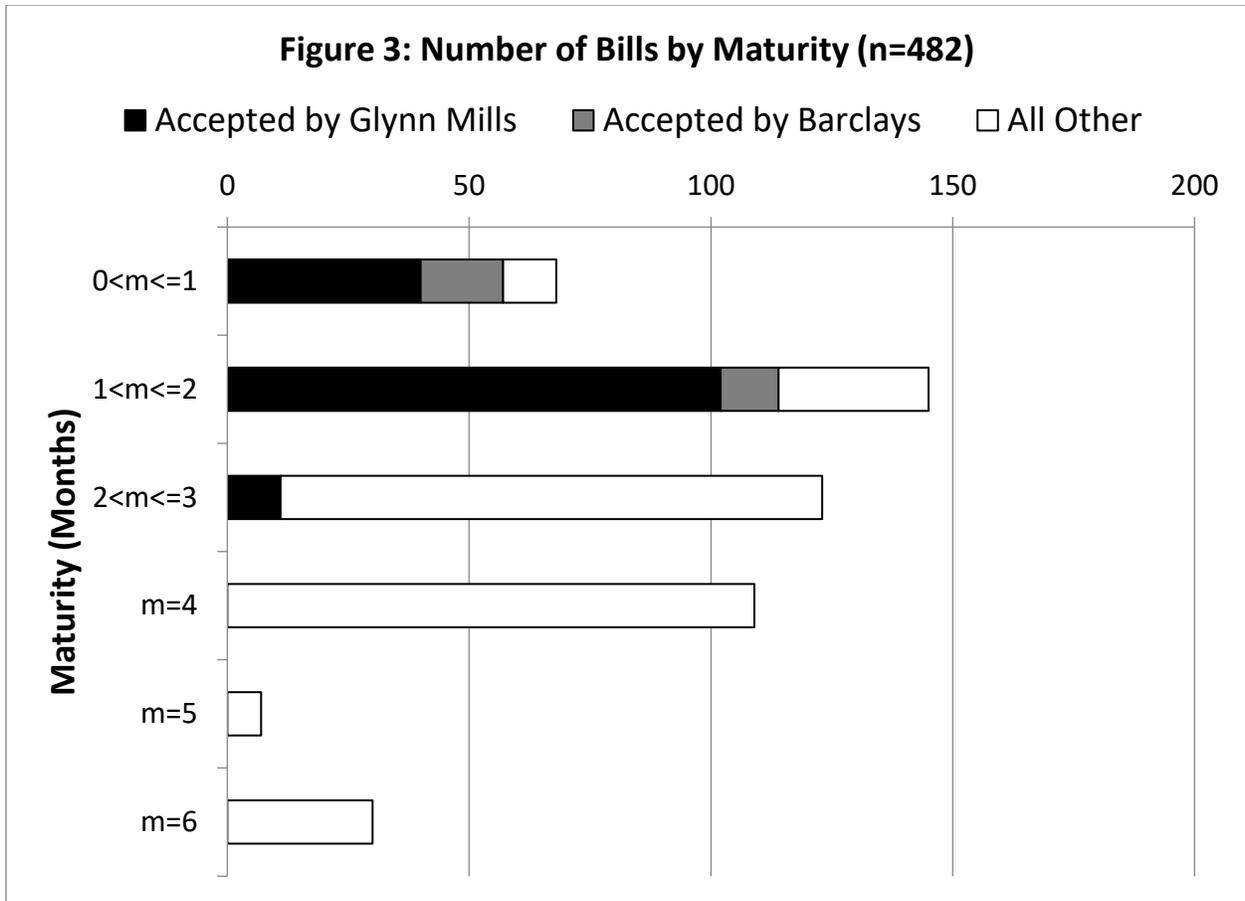
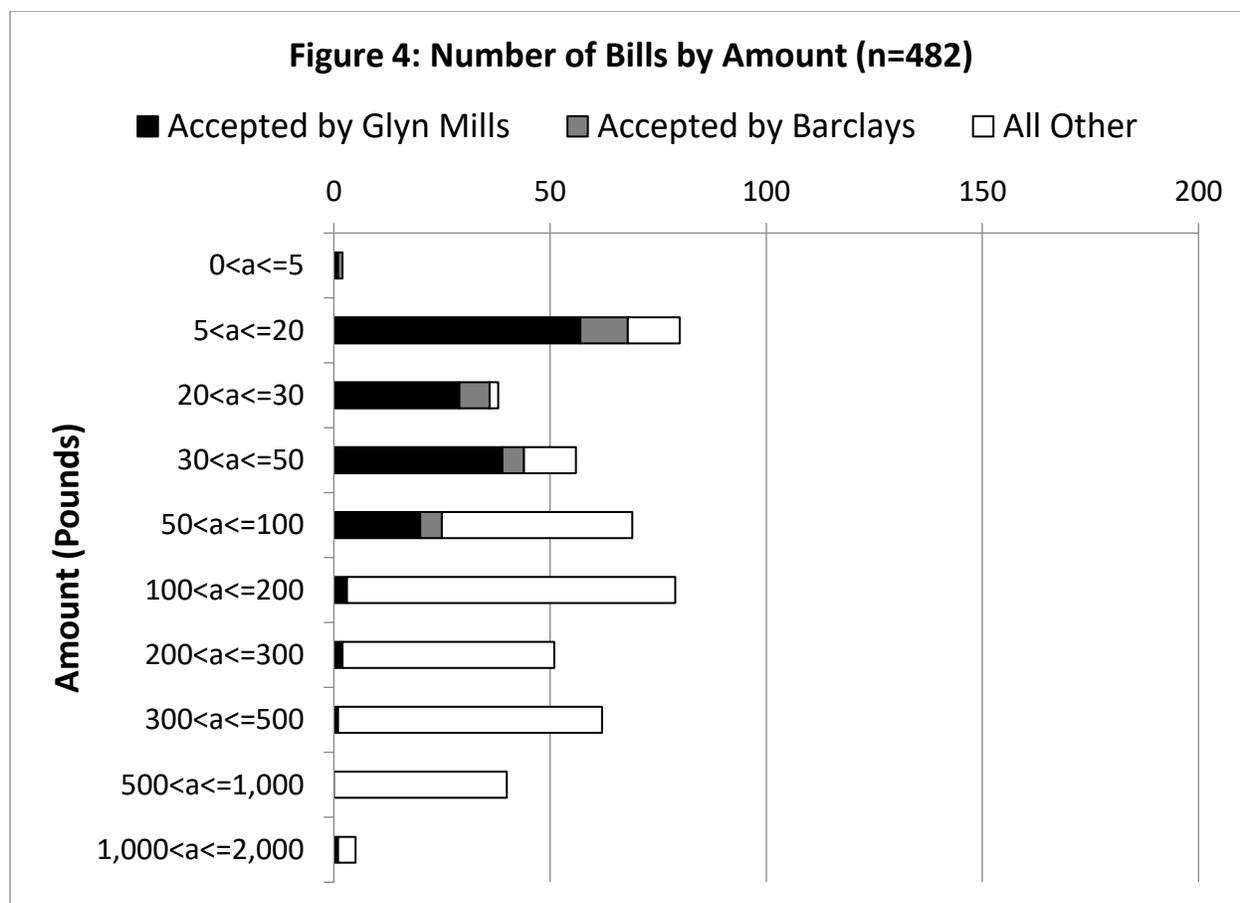


Figure 4 shows the distribution of bills by amount. The distribution shows few bills in either the low end of the distribution or the high end of the distribution. And, as discussed later, the bill amounts even at the low end are for the most part too high to be used as payment of wages to workmen.



Note that bills accepted by Glyn Mills and Barclays are almost all for maturities less than two months and for amounts almost all under £100. For Glyn Mills the modal category is between 5 and 20 pounds.

John Gladstone, a businessman from Liverpool, in response to a question about the lowest denomination of bills that generally circulate testified in 1826 that:³⁵

We have [bills] of all denominations: The manufacturers are . . . in the habit of deriving their supplies of banknotes and gold for the payment of their people from shopkeepers, and they draw bills according to the amount that may be convenient for them on their agents in London. Tradesmen of other descriptions are also in the practice of drawing bills for their payments as may suit their convenience, and in consequence we have a considerable amount of small bills; I call them small from 10£ up to 50£; between these sums we have a considerable circulation in country, which pass from hand to hand so fully indorsed that before maturity it is hardly possible to add another name. (p. 222)

³⁵ In the sample of bills, discussed below, there is a bill indorsed by “John Gladstone”.

B. Comparison to Newmarch's Sample

An important question is the extent to which the sample here is representative. To address this, at least in part, we can compare the sample here to that of Newmarch (1851). Newmarch (1851) obtained a sample of 4,367 bills (3,533 of which were inland bills) drawn for a total sum of £1,216,884. This sample was obtained in 1848 from five “very eminent firms in the City, distinguished for the extent of their businesses as bankers and as bill-brokers” (p. 147).

Newmarch's (1851) goal was to estimate the amount of bills of exchange circulating in England, for the years 1828-1847. As Newmarch explained in Appendix XI of Tooke and Newmarch (1857) (Vol. 6): “It was necessary to ascertain three elements [to estimate the amount of bills of exchange in circulation] . . . first, the number of bills actually created in each year; second, the Average Sum represented by, or expressed by, each Bill; and third, the Average Usance [maturity] or Date at which each Bill was drawn” (p. 584). For the first requirement Newmarch used the accounts from the Stamp Office. For the second and third he used the sample of 4,367 bills (amounting to a total of 1,218,884£) which he inspected.³⁶ Newmarch's sample covers 1828-1847. Table A2 in the appendix gives stamp taxes on inland bills based on size of the bill, the basis for Newmarch's first step.

Newmarch (1851), “The scale of duties is adjusted under guidance of a twofold principle; first, the amount of duty has reference to the *amount* of the bill; and, secondly, it has reference to the *usance* [maturity] of the bill” (p. 145, emphasis in original).³⁷ Newmarch (1851): “Now there is every reason to believe that scarcely any tax in this country suffers from so few evasions as the stamp duty on bills of exchange. It may not be the direct interest of the drawer in all cases that the instrument shall be written upon paper impressed with the full and accurate amount of duty; but there are at least three other parties interested in the transaction, to whom it is of the utmost possible moment that the requirements of the law be fulfilled. These parties are the acceptor, the indorsers, and the payee; and it is pretty certain that the vigilance of parties concerned in these capacities does most effectually secure full compliance with the Act of Parliament” (p. 145).

Table 2 shows a comparison of the two samples by tax duty. Figure 2 and the regression results beneath the figure show the comparison.

³⁶ In Appendix XI of Tooke and Newmarch (1857), Newmarch expanded the sample to 12,687 bills (to the sum of 5,254,100£). He examines the period 1830-1853. “I may state, in general terms, that the extensive collection of data obtained in 1854, did not differ very materially in its results from the data obtained in 1849” (p. 587).

³⁷ Pressnell (1956), p 180 ff, Appendix on stamp duties and estimates.

Table 2: Comparison of Newmarch and Gorton Samples

Stamp Tax	Newmarch Sample	Gorton Sample
1s.	0	2
1s. 6d.	138	77
2s.	323	36
2s. 6d.	464	52
3s. 6d.	570	39
4s. 6d.	630	51
5s.	366	71
6s.	298	53
8s. 6d.	358	56
12s. 6d.	227	42
15s.	100	3
25s.	27	0
30s.	32	0
Total Inland Bills	3,533	482
Add: Foreign Bills	834	
Total Bills	4,367	

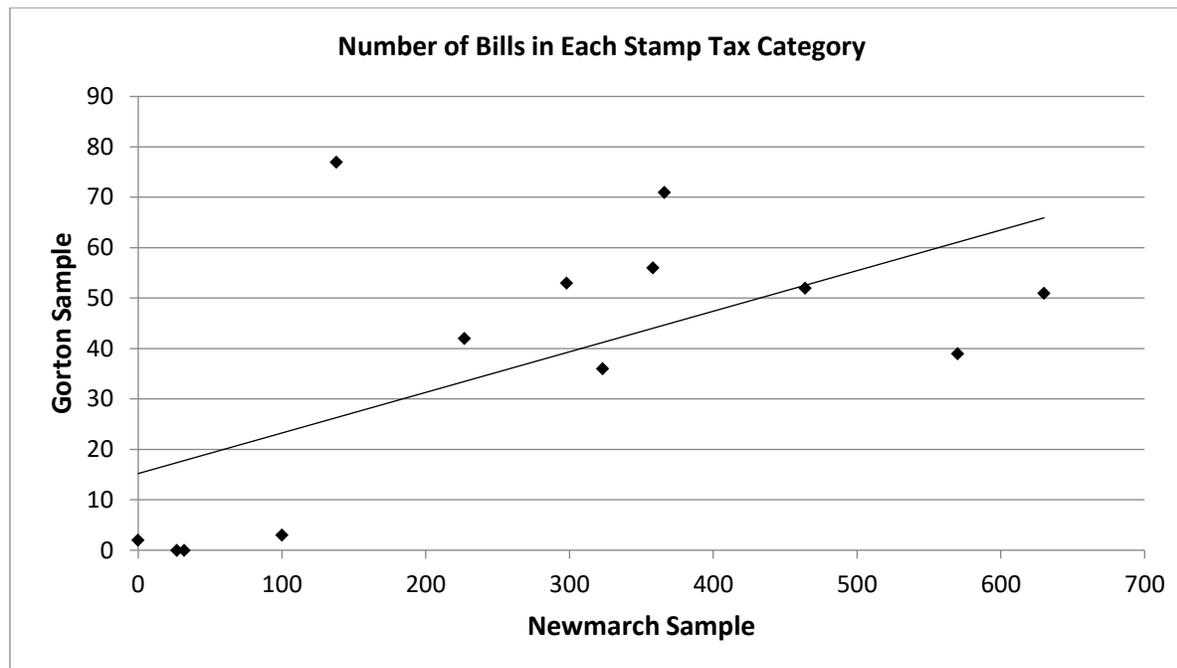
Stamp Tax	Newmarch Sample	Gorton Sample
Group 1	925	167
Group 2	1,864	214
Group 3	744	101
Total Inland Bills	3,533	482
Add: Foreign Bills	834	
Total Bills	4,367	

Categories from Newmarch (1851), page 146, Table I.

Newmarch Sample from Newmarch (1851), page 150, Table III.

Gorton Sample using Newmarch amount and usance categories.

Figure 5: Association between Number of Bills by Tax Category the Two Samples



	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	15.2033	10.6037	1.4338	0.1794
X Variable 1	0.0805	0.0315	2.5565	0.0267
<i>Regression Statistics</i>				
Multiple R	0.6105			
R Square	0.3727			
Adjusted R Square	0.3157			
Standard Error	22.5830			
Observations	13			

The sample here seems similar to Newmarch's much larger sample. But, since Newmarch says nothing about the number of indorsements, it is not clear the sample studied here is like Newmarch's sample in that respect.

C. Where Did the Sample Bills Come From?

Above I distinguished between bank-backed bills and non-bank-backed bills. Some bills came from non-bank archives: Cheshire Archives, Shropshire Archives, and Lancashire Archives, but most came from bank archives. Nevertheless, and this is the point, the bills from bank archives are usually not bank-backed. The bills of exchange in the bank collections were either sent to the archive after being found amongst

the paperwork of branches found when moving buildings, or they were kept by a member of staff because they were known to have historical interest. One archivist reported (to me) that: “A large proportion of the archive was built up in this way. The bank didn’t have a real archive until well into the twentieth century, so items from before this time have generally survived because an individual decided to keep them somewhere safe because they were recognised as having some historical value.”

4. Drawers, Drawees and Indorsers

An agent’s willingness to receive a bill from another agent who is endorsing it depended on the receiver of the bill knowing the identity and credibility of the indorser, especially if none of the prior indorsers were known to the receiving agent. To transact at par, without information production, the identity of an indorser had to have been enough information.³⁸ This would occur if the parties regularly transacted because of a business relationship. Contemporaries noted this, for example, Thornton (1802): “[The bill] will have circulated in consequence chiefly of the confidence placed by each receiver of it in the last indorser, his own correspondent in trade. . . .” (p. 32). And, King (1916): “In districts where the parties were known . . . the bills passed from hand to hand with the freedom of currency. Indeed, they *were* currency. . . .” (p. 31; emphasis in original). Who used these bills such that their identities were mutually known?

Laborers and ordinary workmen were not involved in the use of bills. Ashton (1945): “At a time when wage-earning labour was increasing rapidly the provision of the means of payment was one of the most exacting tasks confronting the employers. Some, like the ironmasters of Furness, had to spend time riding far afield in search of coin; others turned to substitutes like traders’ tokens, shop-notes and direct payment in goods.” What coin was available was used for the payment of wages (Ashton (1945), p. 26 and Pressnell (1956, p. 19)). Indeed, Ashton (1961, p. 105), discussing the activities of Peter Stubs, a file-maker with numerous workmen, notes that “Generally bills were drawn only on persons of substance—though in July, 1805, there is reference to one drawn on a person who was only a workman” (p. 26).³⁹ And Burgess (1826) writes that “Bills, payable after date, circulate amongst the masters of all persons engaged in agriculture, mines, manufacturers, and commerce. They are scarcely used at all in payment for labour” (p. 83).

Laborers of all sorts were paid in coin or tokens partly because the amounts were smaller than transactions among merchants and tradesman. Anderson (1970): “. . . in Lancashire [the tokens] were almost entirely of local issue, never circulating very far” (p. 87). Also, laborers were less likely to be credible as indorsers. Finally, the literacy rates in Lancashire by occupation show that many literacy rates below fifty percent (see Sanderson (1972), p. 90). The literacy rate for the Lancashire area shows a labor

³⁸ Of course, it could have happened that an agent refused to accept the bill because the prospective indorser was not viewed as a substantial person. Of course, these events are not observed.

³⁹ Ashton (1968, p. 80) notes that there was a shortage of coin of the appropriate denomination. Gold guineas and half guineas were too high value. Very little silver came into England. “The dearth of coin in small denominations was a serious matter for manufacturers with wages to pay. Many spend days riding from place to place in search of shillings” (Ashton (1968), p. 80).

force that was less than forty percent literate (Sanderson (1972, p. 85). Illiteracy would make it difficult to transact with bills. Illiteracy would have made it difficult to use bills of exchange.

There were, thus, two monetary systems, one using coin to pay wages, and the other using inland bills to transact among merchants and tradesman. Below I examine what we can say about the identities of parties in the second system. But I will not be able to say anything about the relationships between two parties.

Pearson and Richardson (2001) studied business networks in the industrial revolution: “The underlying importance of shared values helps explain, for instance, why in the early nineteenth century Manchester and Leeds, despite important religious and political divisions within the middle class, elites generally acted in business matters as tight known oligarchies with a common and largely pragmatic political economy . . .” (p. 673). In 1801 Manchester and Liverpool had a population of about 80,000 and Leeds had a population of 124,000 in 1831. In Leeds about 15 percent of the residents were middle-class and “they were led by a mercantile and professional elite of perhaps numbering several hundred” (p. 662). The participants in the use of inland bills likely came from this middle class and elite group, with the middle-class comprising merchants, artisans, and tradesmen.

An example comes from Willan (1970) who studied the activities of Abraham Dent’s business in the late 18th century. Dent was a shopkeeper, brewer, hosier, and wine and spirit merchant. All of these activities involved inland bills of exchange. Dent used bills to pay suppliers of goods and received bills in payment for goods and for settling accounts. Willan reports that Dent’s customers lived nearby, but there were some that were more distant. These “are . . . difficult to explain; their custom must have arisen from some personal or trade relationship with the Dents” (p. 20). Willan (1970) does not mention how Dent paid his employees. Ashton (1961) similarly discusses how Peter Stubs, the file maker from Warrington, used inland bills to conduct his business with fellow tradesmen and merchants, but paid employees in coin.

What can we say about the indorsers in the sample here? All in all, we ended up with 482 bills that include a total of 1,595 signatures. (By “signatures”, I mean only indorsers, not payees.) However, we only have 232 usable names because (1) many signatures were not legible, and (2) some people signed more than one bill. The drawees tend to have bills drawn on London, i.e., the bill be paid in London by a bank out of the borrower’s account. The reason that there are not more of our sample of drawees in London is that many (137) of the remaining bills were drawn on John Adams & Son (in Selby). There is a “John Adams” in the Census records who was a timber and iron dealer in Selby, Yorkshire. But he was unmarried (not widowed) so this John Adams probably was one of the sons. Based on the age of the son, it seems that the John Adams in earlier Census records was a flax merchant in Selby, Yorkshire.

The drawers, drawees, and payees were catalogued following the layout of a modern check: drawer in the lower right, drawee (bank) in the lower left, and payee after the words “pay to the order of”. The locations of the drawees (borrowers) correspond to the following distribution:

153 Glyn Mills Hallifax
137 John Adams and Sons (Selby, flax merchant)

29 Barclays
22 John Moss and Company (Haslingden, unknown occupation)
 341 Subtotal
141 Less than 10 bills or illegible
 482 Total Sample

The locations of the drawers (lenders) are outside London, such as Market Drayton (Shropshire), Manchester (Lancashire), and Hull (East Yorkshire).

Establishing the identities of indorsers is difficult. A large variety of sources were consulted (see the Appendix) to try to determine the identities of the indorsers. The process is exceedingly labor-intensive so not all names were investigated. About the identities of the borrowers and lenders, 39 names were investigated, of which 28 good matches were made, 8 were ambiguous, and in three cases no information was found. Regarding the identities of indorsers, 103 were investigated, of which there were 55 good matches, 90 were ambiguous, and there was no information found in 18 cases. “Ambiguous” usually means that there was more than one person with that name, or the age of the person was inconsistent with the date on the bill, in other words with borrowing or lending, when the agents were too young or too old.

In the Appendix the identities of the 28 matches for the borrowers and lenders are listed. The table shows that the occupations of borrowers and lenders were merchants (e.g., pig dealer, timber merchant) and artisans (e.g., currier, spinner). The occupations are consistent with Willan’s (1970) description of Abraham Dent’s business activities and Ashton’s (1961) description of Peter Stubs’ business activities. The occupations thus appear to be credible individuals, individuals with known businesses. Because of these occupations, it is quite possible that the parties were doing repeated business with a recognized counterparty.

We turn now to investigating indorsement chains. Chains of indorsers meant that the bills “circulated because of the confidence each person had, not only in the person on whom it was drawn, but also in the person who had drawn it, and in the person from whom he had received it and whose indorsement it bore” (Ashton (1961), p. 103). But it is not clear that a receiver of a bill needed to know the identities of the entire prior chain of indorsers, rather than just the person in front of him signing the bill.

Table 3 shows examples of indorsement chains where it was possible to identify indorsers. The indorsers listed are sequences of consecutive indorsers where information could be found. A chain in the table does not necessarily start with the first indorser, followed by the second indorser, etc. Further, since the table contains snippets of chains, the last indorser listed is not necessarily the last for that bill. Rather, it is the last signature that could be identified in that chain. The chains shown are in sequence, however. The longest chain shown has four indorsers. The table lists the role of each party, their occupation, location, and the distance from the last indorser (based information found in the sources listed in the Appendix). Payees are not part of the chains in Table 3. Distances are from Google maps.

Note the following: (1) the amounts of the bills are typically small, less than £100 and the amounts are most likely a multiple of ten; (2) the occupations of indorsers are those of merchants and artisans; (3) the distances between the first two or three indorsers varies from 0 miles to over 100 miles, but usually the long distances are to accounts often in London. This may mean that the borrower is honoring the debt by instructing his London banker to pay off the bill. Omitting the cases where the party in the chain is a bank, we see examples where two parties in the chain were zero miles apart, so it was an indorser in the neighborhood.

Other than the occupations of parties to a transaction and the distances between them, I have found no other evidence about relationships. In the table, note that cases [2], [6], and [7] are basically the same pattern, just with different payees. Vinning and Ames were both banks.⁴⁰ Down Thornton was a London banker.

In case [1], the bill was drawn by Richard Spearman of Shropshire & Staffordshire Bank (S&S) on Glyn Mills and was payable to John Bayley. After Bayley, 10 people or firms subsequently signed the back. Mallinson, Rhodes Briggs (a bank), and Jones Loyd were the 8th, 9th, and 10th of the 10 subsequent endorsers after Bayley. Rhodes Briggs was a bank in Halifax Yorkshire.⁴¹ Jones Loyd were also bankers.

In case [2], the bill was drawn by Richard Spearman of S&S on Glyn Mills and was payable to Marshall Hutton & Co. After Marshall Hutton, 7 signed the back. Vinning, Down Thornton, and Ames were the 4th, 5th, and 6th of the 7 subsequent endorsers after Marshall Hutton (the last was not legible). Down Thornton was a bank in London. Jones Loyd were also bankers.⁴² Ames & Co. is listed as the London correspondent for numerous country banks in *The Small Edition of the Post Office London Directory*, 1843.

Case [6]: This bill was drawn by Richard Spearman of S&S upon Glyn Mills and was payable to Thomas Whitfield. After Whitfield, four signed the back. Vinning, Down Thornton, and Ames were the 1st, 2nd, and 3rd of the 4 subsequent endorsers after Whitfield (the last was not legible). Down Thornton and Ames are as above.

Finally, case [7]: This bill was drawn by Richard Spearman of S&S upon Glyn Mills and was payable to George Bradbury. After Bradbury, 4 signed the back. Vinning, Down Thornton, and Ames were the 1st, 2nd, and 3rd of the 4 subsequent endorsers after Bradbury (the last was not legible). Down Thornton and Ames are as above.

Table 3 lists the location of some banks as London. But the bill might be related to another location. The location of banks is tricky because London banks had agents or correspondents in other parts of the country who could have acted on behalf of the London bank. Country banks could also have a London office (see Black (1996)). Pressnell (1956): "The association between country and London banking was, however, much closer than is conveyed by the terms 'correspondent' and 'agent'. A number of country

⁴⁰ See <https://www.rbs.com/heritage/companies/pole-thornton-free-down-and-scott.html> and <https://www.rbs.com/heritage/companies/cave-ames-and-cave.html> .

⁴¹ See <https://www.archive.barclays.com/items/show/5300> .

⁴² See <https://www.rbs.com/heritage/companies/jones-loyd-and-co.html> .

firms were represented by partners in London firms; few London firms were represented in the country . . . " (p. 105). To take one example, consider Down Thornton & Free. Henry Thornton, a partner in this bank, testified before the Committee of Secrecy of the House of Commons in 1797.⁴³

Henry Thornton, Esquire, a Member of the House, and a Banker of London; called in, and Examined.

Q. Is your House connected with any Country Banks?

A. It is; with several.

Q. Can you specify the places where those Banks are situated?

A. Edinburgh, Glasgow, Liverpool, Bristol, Exeter, Scarborough, Litchfield, Stamford, Tiverton, Totness, Carlisle. Stockton, Winchester, and a few others, which I do not at present recollect.

⁴³ See Reports from Committees of the House of Commons (1803), p. 149.

Table 3: Indorsement Chains

				Indorser	Next Indorser	Next Indorser	Next Indorser
1	Issue Date:	1814-08-13	Name:	Joseph Mallinson	Rhodes Briggs & Co.	Jones Loyd	
	Maturity:	2 months	Role:	Indorser	Indorser	Indorser	
	Amount:	15 £	Occupation:	Manufacturer, merchant, clothier	Banker	Banker	
			Location:	Huddersfield, Yorkshire	Halifax, Yorkshire	London	
			Distance from Prior:		8 miles	205 miles	
2	Issue Date:	1814-08-17	Name:	Vinning & Sons	Down Thornton & Co.	Ames & Co.	
	Maturity:	2 months	Role:	Indorser	Indorser	Indorser	
	Amount:	22 £	Occupation:	Corn merchant	Banker	Banker	
			Location:	Bristol, Gloucestershire	London	London	
			Distance from Prior:		118 miles	0 miles	
3	Issue Date:	1814-08-20	Name:	Thomas Brayn	Pritchard Wood	Gray & Pace	Sutton Weston & Oldman
	Maturity:	2.33 months	Role:	Payee	Indorser	Indorser	Indorser
	Amount:	20 £	Occupation:	Currier	Banker	Mercer, draper	Mercer, draper
			Location:	Market Drayton, Shropshire	Ross-on-Wye, Herefordshire	Market Drayton, Shropshire	Newark, Nottinghamshire
			Distance from Prior:		101 miles	101 miles	86 miles
4	Issue Date:	1814-08-31	Name:	James Baker	Smallwood & Spearman	George Bradbury	Wilkinson Rowlatt & Co.

	Maturity:	2 months	Role:	Payee	Indorser	Indorser	Indorser
	Amount:	30 £	Occupation:	Tanner, Farmer	Banker	Ironmonger, druggist	Merchant
			Location:	Market Drayton, Shropshire	Market Drayton, Shropshire	Market Drayton, Shropshire	London
			Distance from Prior:		0 miles	0 miles	159 miles
5	Issue Date:	1814-09-05	Name:	Gaskell & Leyland	T & I Littledale	Oswald Leicester	
	Maturity:	2 months	Role:	Indorser	Indorser	Indorser	
	Amount:	40 £	Occupation:	Wholesale grocer	Broker	Wine & spirit merchant	
			Location:	Liverpool, Lancashire	Liverpool, Lancashire	Liverpool, Lancashire	
			Distance from Prior:		0 miles	0 miles	
6	Issue Date:	1814-09-10	Name:	Vinning & Sons	Down Thornton & Co.	Ames & Co.	
	Maturity:	2 months	Role:	Indorser	Indorser	Indorser	
	Amount:	70 £, 13 s	Occupation:	Corn merchant	Banker	Banker	
			Location:	Bristol, Gloucestershire	London	London	
			Distance from Prior:		118 miles	0 miles	
7	Issue Date:	1814-10-07	Name:	Vinning & Sons	Down Thornton & Co.	Ames & Co.	
	Maturity:	1 month	Role:	Indorser	Indorser	Indorser	
	Amount:	38 £, 3 s	Occupation:	Corn merchant	Banker	Banker	
			Location:	Bristol, Gloucestershire	London	London	
			Distance from Prior:		118 miles	0 miles	
8	Issue Date:	1814-10-19	Name:	Gaskell & Leyland	Sam Broom	Orrell City Coal	

	Maturity:	2 months	Role:	Indorser	Indorser	Indorser	
	Amount:	60 £	Occupation:	Wholesale grocer	Woolstapler	Coal merchant	
			Location:	Liverpool, Lancashire	Leeds, Yorkshire	Wigan, Lancashire	
			Distance from Prior:		73 miles	57 miles	

5. Backing for the Private Money: Bank Loans vs. Personal Wealth

In this section I turn to analyzing the determinants of bill velocity, that is what determines the number of times a bill changes hands, as measured by indorsements? *Ceteris paribus*, more indorsements (signatures) should be associated with longer maturities, smaller amounts, and amounts in round numbers (multiples of 10). The implicit assumption here is that the identities of the indorsers were enough information for counterparties to have been willing to receive the bill in payment. We do not observe bills that were refused. So, conditional on the bill being used in transactions, the above factors should matter.

As mentioned above, of particular interest is whether bank-backed bills were more liquid, i.e., changed hands more frequently, than bills backed solely by individuals' wealth. "Bank-backed" means the bill was a liability of a bank. As discussed above, there are two cases where banks (Barclays and Glyn Mills) were the payees; they were liable (in addition to the wealth of indorsers). I start by discussing the two bank-backed cases.

Black (1996) discusses the London Agency System of country banks having London correspondents. Black (1996, p 116), based on the *Post Office London Directory* (1802), lists Glyn Mills as having nine country correspondent banks, and Barclays as having sixteen country correspondent banks. By 1820 these numbers were thirty-two for Glyn Mills and forty-six for Barclays (Black (1996), p. 118).

A. Shropshire & Staffordshire/Glyn Mills & Halifax

Glyn Mills was the bank that backed the bills of Shropshire & Staffordshire Bank.⁴⁴ In 153 instances in the sample Glyn, Mills and Halifax (Glyn Mills) were the drawees\borrowers. Glyn Mills was a famous bank, founded in 1753 and existing until 1939, when it was acquired by the Royal Bank of Scotland.⁴⁵ Six generations of Glyns ran the bank during this entire period; see Browne (1933) and Fulford (1953).

For these 153 bills, Glyn Mills was liable as opposed to honoring the bill from a customer's account. In the case of bills in this group, the words "To Sir R. C. Glyn Bar.^t [Baronet] Mills, Halifax & Co. Bankers, London" are pre-printed or handwritten in the lower left corner, i.e., drawee\borrower. If handwritten, the words are the same or almost identical. On 146 of the 153 bills, the words "For T. Smallwood & R. Spearman" are pre-printed or handwritten in the lower right corner, i.e., the drawer, with R. Spearman's handwritten signature immediately below. On these 146 bills, the words "Shropshire & Staffordshire Bank Market Drayton" are pre-printed or handwritten across the top of the bill. So, Glyn Mills was the drawee (the acceptor) and, in effect, Spearman was telling Glyn to pay some third party.⁴⁶ Market Drayton is a market town in the north of Shropshire close to the Staffordshire border.

⁴⁴ Between 1753 and 1970 the bank went by a number of different names, but always included Glyn. See Fulford (1953) Appendix 1, p. 241, and the Oxford Dictionary of National Biography.

⁴⁵ Newmarch worked for Glyn Mills; see <https://www.rbs.com/heritage/people/william-newmarch.html>

⁴⁶ The other 7 bills in this group were all handwritten by someone other than Spearman. "To Sir R. C. Glyn ..." or something similar was in the lower left. "Market Drayton" was at the top but not "Shropshire & Staffordshire".

We know a few things about Shropshire & Staffordshire: Thomas Smallwood, Joseph Warren, and Richard Spearman dissolved their banking partnership on June 25, 1811.⁴⁷ Warren was the creditor and/or indorser on several of the bills in our sample.⁴⁸ On all the S&S bills the location of the creditor is given as “Market Drayton”, a market town in north Shropshire also known as “Drayton” or “Drayton on Hales”.⁴⁹ The drawee // acceptor // payor *for all these bills* is the Glyn Mills & Co. (1753-1970) banking firm in London, discussed further below.⁵⁰

As mentioned above, Shropshire & Staffordshire was a bank located in Market Drayton, a town in the north of Shropshire, close to the Staffordshire border. Lee (1861), a native of Drayton, cites an anonymous description of Drayton as “a little obscure place with a market on Wednesdays” (p. v).

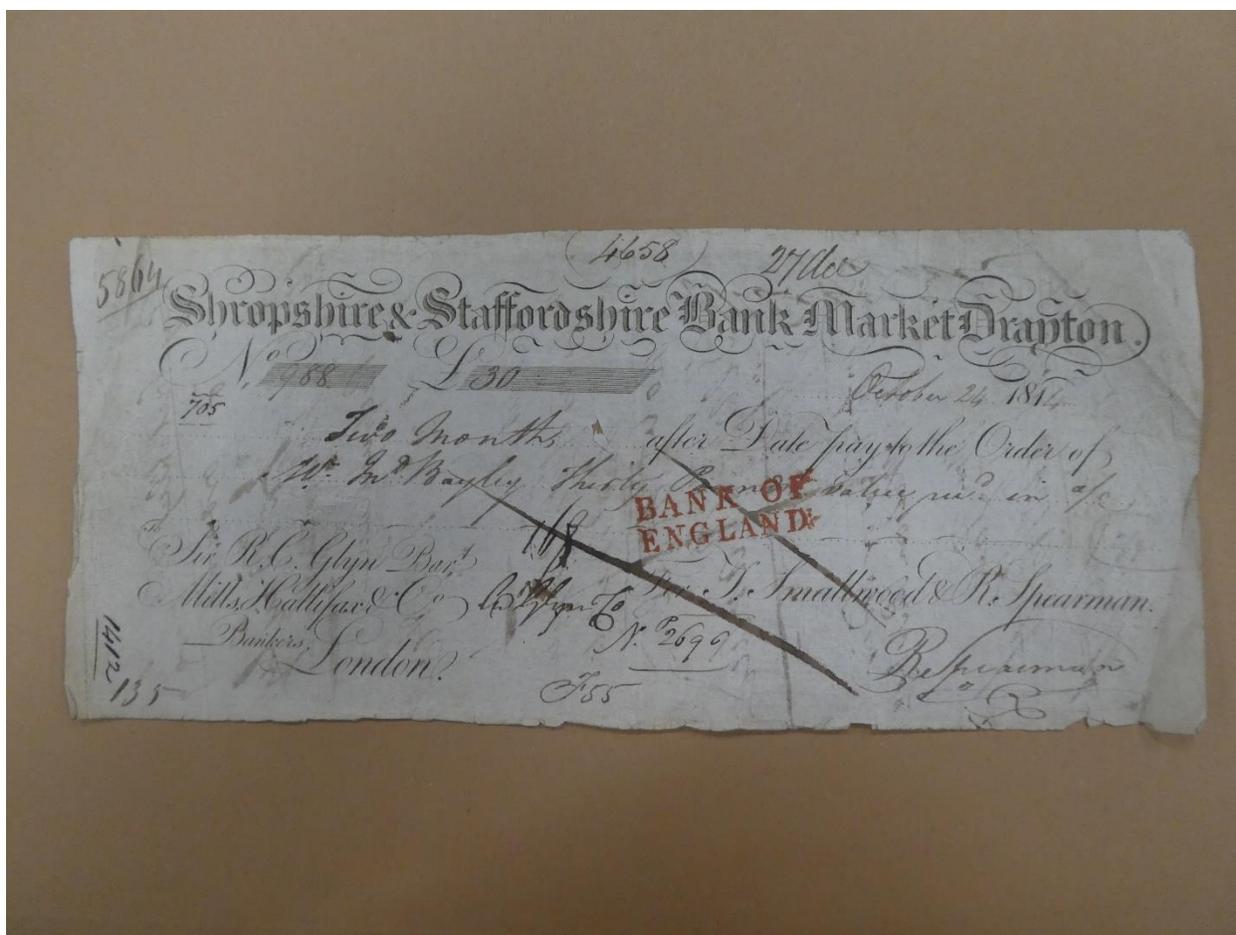
Below is a picture of a Shropshire & Staffordshire Bank bill.

⁴⁷ Norwood (1858) lists the bank Smallwood & Spearman going bankrupt in 1823.

⁴⁸ According to Byles (1874), a partner who accepts bill with his own signature in a transaction “binds the firm, whether he sign the name of the firm, or sign by procuracy [by designated authority of the partnership], or *accept* in his own name, a bill drawn on the firm” (p. 43; emphasis in original).

⁴⁹ Today Drayton has a population of about 12,000.

⁵⁰ The name of the firm changed many times. See <https://www.rbs.com/heritage/companies/glyn-mills-and-co.html>



Price (1890) commented on Glyn Mills in the [Handbook of London Bankers](#) that this firm “. . . has the reputation of having a larger business than any other private banking house in the City of London” (p. 65-66). Cottrel (1991) describes Glyn Mills & Co. as “Unique in many ways: it was a major London agent for country banks, but also acted as the ‘railway bank’, was involved in foreign lending and undertook long term loans to domestic manufacturing” (p. 49, n. 2).

Glyn Mills had many relationships with country banks. Indeed, Sir Richard Carr Glyn testified before a parliamentary committee in 1799, “Third Report from Committee of Secrecy” (p. 142).⁵¹

Does your House correspond with Country Bankers?

It does. . . I consider myself as an Agent to the Country Bankers in Money transactions.
Are the Bills of any of the Country Banks with which you are connected, payable at your House?

They are; Bills are drawn upon our House. Notes are made payable at our House.

⁵¹ See [Reports from Committees of the House of Commons](#), Vol. XI, Miscellaneous Subjects, 1782-1799.

Glyn Mills had four country bank agencies in 1790, thirteen in 1800, and twenty-eight in 1810. By 1815, Glyn Mills had correspondent relationships with thirty-five banks located in the Cotswolds, Cumberland, East Anglia, East Riding, the Home Counties, Lancashire, the Welsh Marches, the east Midlands, the north east, the Potteries, south-central and south-west England, and Scotland. And, by 1830 Glyn Mills had forty-nine country bank agencies (Fulford (1953), p. 59, 95-101, 246-255). Fulford (1933), Appendix III, lists the 40 or so banks with whom Glyn & Co. had relationships with. Included there is Smallwood & Spearman of Market Drayton.⁵²

According to Fulford (1933): "What made for the preeminence of Glyn's during the first fifty years of the nineteenth century was that the partners laid themselves out to attract and maintain the London agency for a great number of country banks" (p. 96). In this period the personal reputations and public presences of bank executives was very important. As Fulford (1933) put it: ". . . Glyn strengthened the repute of the Bank by his successful career in public life" (p. 16). Burke (1839) describes Sir Richard Carr Glyn as an "eminent banker of the city of London. . . the 1st bart. [Baronet] of Ewell and Surrey . . . served the office of lord mayor [of London] in 1798" (p. 448).⁵³ Lisle-Williams (1984) describes Glyn Mills as one of the merchant banking dynasties. Indeed, Glyn, described by Cottrell (1991, p.31) as "that very particular 'private' bank—Glyn Mills"—as a powerful bank that would go on to be at the epicenter of England's global expansion in the 19th century, forming the first international banks. Cottrell (1991, p. 46) describes this thusly: "The continuing role, from the 1830s to the 1880s, played by the Glyn in the creation of British corporate international banks was remarkable . . ." (p. 41).⁵⁴

"In 1805 Richard Carr Glyn became a member of the Committee of Six, set up to recommend improvements to the running of the Bankers' Clearing House. . . Under his leadership Glyn, Mills & Mitton expanded rapidly, from employing 9 clerks in 1793 to 36 by 1815. The partnership undertook financing activities on behalf of the government during hostilities with France in the 1790s, and also became London agent for over 40 provincial banks across England."⁵⁵

Engraved at the top of the bill is Shropshire & Staffordshire Bank, which was the issuing bank. But the notes are backed by Glyn Mills (lower left corner of the bill). What was the relationship between Shropshire & Staffordshire and Glyn Mills, other than that Glyn Mills was the London agent for Shropshire & Staffordshire? Unknown Author (1921) explained:

The obstacles to commercial intercourse, and the numerous other inconveniences attending the limitation of the *credit* of many English Banks to their own circle, and the difficulties of passing their notes beyond it . . . are well known . . . several in good credit have made their notes *exclusively payable in London*, with the view of commanding a more extended circulation; but it is thought this plan has been adopted by some others,

⁵² If Glyn accepted a bill, the final party to the bill need not go to Glyn in London. The final holder could collect from a country bank agent (maybe Glyn Mills' agent) who would then collect from Glyn in London.

⁵³ Richard Carr Glyn (1755-1838) was the eldest son of Sir Richard Glyn (bap. 1711-1773), the founder of the bank.

⁵⁴ Glyn, Mills could not continue as a private partnership because of its small size. In 1939 it was acquired by the Royal Bank of Scotland (RBS), but continued to be managed separately. In 1969 it became an RBS subsidiary.

⁵⁵ Source: <https://www.rbs.com/heritage/people/richard-carr-glyn.html>

rather to evade the *immediate* effect of sudden “*runs*” upon themselves. . . “ (emphasis in original; p. 91)

Indeed, the form of the note suggests this because the Shropshire & Staffordshire name and the amount are engraved on the bill, making it resemble a note of Shropshire & Staffordshire. The payee’s name, Glyn Mills, is also engraved on the note. In effect, Glyn Mills was backing Shropshire & Staffordshire money. But the details of this arrangement are not known, i.e., how did Shropshire & Staffordshire recompense Glyn Mills? Shropshire & Staffordshire no doubt held balances with Glyn Mills. See Pressnell (1956, p. 404, 413-415). Nevertheless, Glyn Mills was liable.

We know that Glyn Mills’ assets were bills of exchange, either its own or bills purchased in the discount market. But there is no balance sheet information until after the sample period.⁵⁶ As Fulford (1953) wrote, with respect to Glyn’s “. . . internal functions and business . . . unhappily such information does not exist” (p. vi). Indeed, the archives for Glyn, Mills contain no useful information in this regard.⁵⁷

The Stafford & Shropshire Bank was in an industrial, iron and steel, county. In fact, both counties of Shropshire and Staffordshire were industrial. See Ashton (1924), Birch (1967), Trinder (1973), and Bailey (2003). According to Trinder (1967): “For most of the second half of the 18th century more iron was produced in Shropshire than in any other county in Great Britain” (p. 33).

B. Barclays, Tritton & Bevan

Barclays, Tritton & Bevan was a London Bank founded in 1694 (according to Price (1890)). Of the 29 bills drawn on Barclays, eleven were drawn by Gurneys & Company, a bank. Twigg’s (1830) lists Barclays as Gurneys’ London correspondent. Of the remaining bills, six are illegible, one is drawn by a country bank in Suffolk, Four were drawn by Hadwen and Wood, which was a bank in Liverpool, and the rest were drawn on individuals, the identities of whom I could not trace.

Gurneys & Co. was a family-run bank founded in 1770 by members of the Quaker Gurney family, and headquartered in Norwich, England, which is in the county of Norfolk (East Anglia). See Figure 1. A subsequent daughter of David Barclay married Richard Gurney. Pressnell (1956): “John Gurney junior, nephew of Samuel Gurney, was trained in the banking house of Smith, Bevan, and Bening, London agents of the Gurneys of Norwich and the forerunners of the modern Barclays Bank” (p. 114). There was a “pattern of marriage with the Barclay and Bevan families (Ackrill and Hannah (2001)). Gurneys numbered twenty-one branches by 1830 (Pressnell (1956, p. 127). Later, the firm was merged and became Overend, Gurney and Company, the largest discount house in London which dramatically failed in the Panic of 1866. The remnants of this company merged into Barclays Bank in 1896. Gurneys & Co. covered East Anglia, with about twenty branches. East Anglia is a geographical area in the East of England, comprising the

⁵⁶ Browne (1933) shows the first balance sheet published in 1885. Browne (1885-1964) was a partner and later director of Glyn, Mills & Co. <https://www.rbs.com/heritage/people/eric-gore-browne.html>

⁵⁷ See <https://www.rbs.com/heritage/companies/glyn-mills-and-co.html>.

counties of Norfolk, Suffolk and Cambridgeshire. Suffolk and Norfolk are along the eastern coast of England, bordering the English Channel. See the map below.

The relationship between Barclays and Gurneys appears to have been like that between Shropshire & Staffordshire and Glyn, Mills. That is, the bills were liabilities of Barclays. Druery (1826) notes in passing: “. . . Bank of Messrs. Gurney, Turner, and Brightwen, whose bills are honoured in the metropolis at Barclays, Tritton, Bevan and Co . . . “

But there are important differences. First, the bills do not have an engraving of the name Gurneys & Co. on the top of the bill. Instead, in some cases the name of a Gurneys branch location is engraved there, e.g., Beccles, a town in Suffolk. And secondly, East Anglia, where the Gurneys branches were located was overwhelmingly agricultural (e.g., Dodd (1848)), with a low population density (see MacDonald (2017)). In almost all respects East Anglia was the opposite of Lancashire, Yorkshire, Shropshire and Staffordshire. Literacy rates lagged the rest of the nation (see Crone (2015)). The schools were of inferior quality and newspapers had a very low circulation (see Glyde (1956)). In fact, this was the location of the Swing Riots in which agricultural laborers smashed threshing machines and threatened farmers in 1830-31. See Hobsbawm and Rudé (1970) and the discussion in Winstanley (2004).

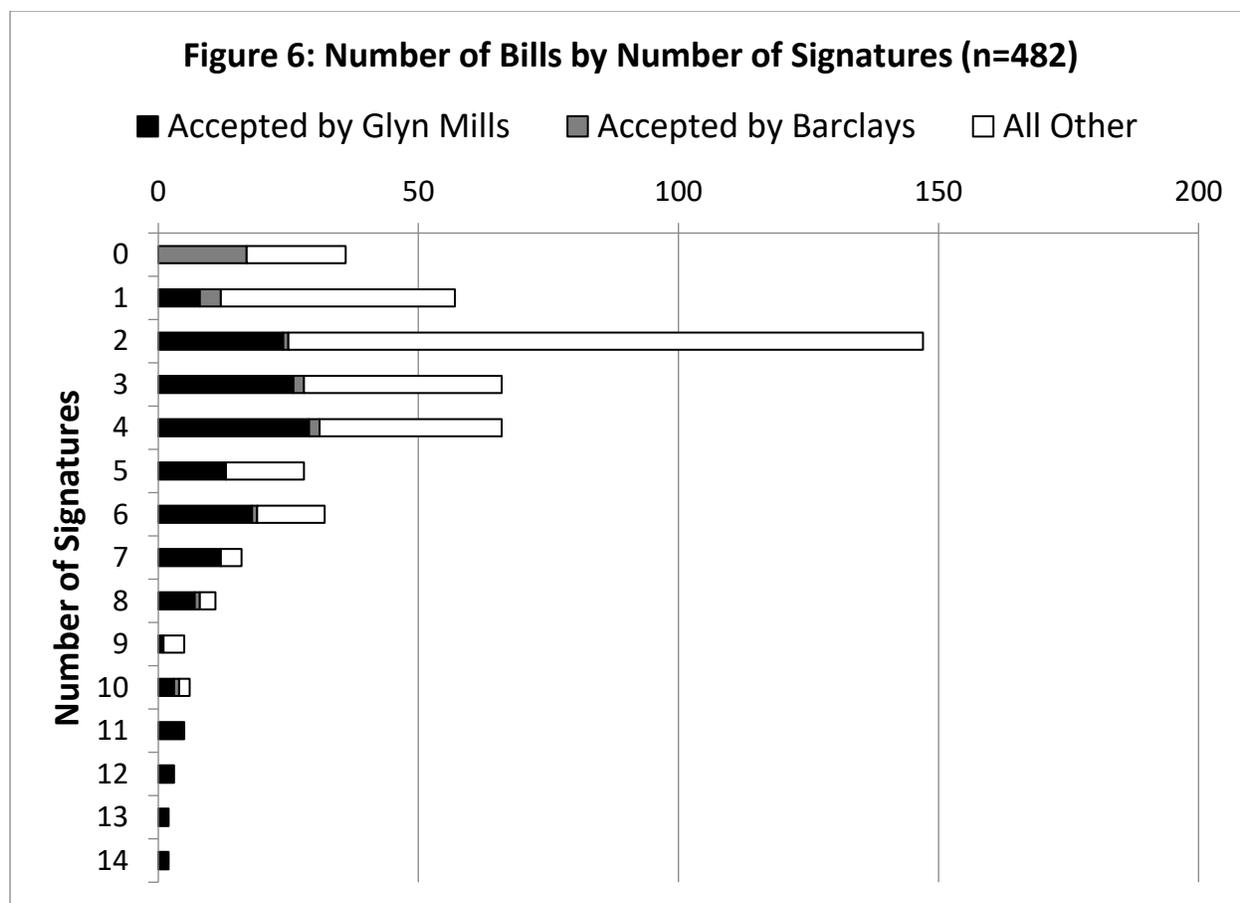
For these reasons bills of exchange in East Anglia were not likely used very extensively. The low population density meant that fewer people would recognize each other as having enough wealth to back the bill. And low literacy rates meant that few could read the bills.

C. Summary

Thus, in the sample there are three situations for bill backing: (1) bills backed only by the personal wealth of the indorsers, and circulated in the industrial and manufacturing areas; (2) Shropshire & Staffordshire bills backed by the personal wealth of the indorsers plus Glyn, Mill’s assets, and also circulated in the industrial and manufacturing areas; (3) Gurney bills backed by the personal wealth of the indorsers plus Barclays, Tritton & Bevan’s assets, and circulated in the agricultural area of East Anglia. For these reasons I expect Shropshire & Staffordshire bills to have the most indorsements, followed by non-bank-backed bills, and lastly the Gurney bills. This is consistent with the sample averages discussed above.

D. Indorsements

Figure 6 below shows the distribution of bill signatures in the sample.



Again, the sample does not show bills with 20, 50, or 100 signatures, cases in which paper would be attached to the bill.

Note the long tail for bills accepted by Glyn Mills, and the modal category for bills accepted by Barclays is zero.

As noted, *ceteris paribus*, more indorsements (signatures) should be associated with longer maturities, smaller amounts, and amounts in round numbers (multiples of 10). Checkland (1954): “By 1819 the bills seem to have become to some degree standardized in round sums . . . ” (p. 130). Note that stamp duty buckets are a function of bill amount, so they are essentially the same. Ashton (1961) studied the records of Peter Stubbs, an eighteenth-century file-maker. Ashton noted that “Inland bills drawn with a longer [maturity] than the ten days of [this example] might sometimes bear a dozen or more indorsements” (p. 104).

E. Analysis of Liquidity

Simple regressions were run with the number of indorsements (Signatures) on the left-hand side and the various variables discussed above on the right-hand side. Note that while the payee is the first indorser on the back of a bill, that signature is not counted in the Signatures variable.

Right-hand side variables include the log of the amount of the bill, maturity and maturity squared, whether the bill amount is a multiple of ten. Maturity squared was included because a plot of maturity against number of signatures shows that the maximum number of signatures at each maturity traces out an inverted parabola with a peak around 2.0-2.5 months. There is dummy variable indicating whether the bill was a Shropshire & Staffordshire bill that is a liability of Glyn, Mills. And, there is a dummy variable for bills accepted by Barclays.

Table 4 below shows regressions of the number of indorsements on the above bill characteristics. The table has OLS regressions, as well as Tobit, Poisson, and Negative Binomial; the last two methods are commonly used for count data. The results are consistent across methods.

As expected, the number of indorsements is negatively related to the amount of the bill, reflecting the line between a pure credit instrument and a bill used as money. For the latter purpose, lower amounts are associated with more indorsements. Indorsements are positively related to maturity, consistent with Ashton (1945) statement quoted above that: “. . . since each successive holder indorsed it, the more it circulated the greater the number of guarantors of its ultimate payment into cash “ (p. 26). So, if a bill has a longer maturity, the more indorsements make it safer. The maturity squared term is also significant. Multiples of ten are also associated with more indorsements. This is a matter of convenience, but still change may be needed, so there is a potential problem.

The evidence is consistent with DGH: a Shropshire & Staffordshire bill that backed by Glyn Mills is associated with about two more indorsements on average, *ceteris paribus*. The DGH theory is that debt backed by debt, in this case a bill backed by Glyn, Mills’ discounted bills held as assets, is the optimal way to create private money. For non-bank-backed bills, it is imperative that a party taking such a bill in a transaction know that the indorser (and possibly previous indorsers) have enough wealth to conclude that there will likely be no losses. This knowledge is essential in order to take the bill. DGH says that the opposite needs to be the case, namely that no knowledge of the backing is necessary (other than the backer is a well-known bank) as long as every party to the transaction knows that the other parties do not find it optimal to produce private information about the debt of Glyn Mills backing the bill. But the results also show that Barclays-backed bills, related to Gurney, have fewer signatures. As discussed above, this is most likely because Gurney & Co. was in an agricultural area.

The dummy variable “acceptGlynMills” indicates bills that were liabilities of Glyn Mills. But all these 153 bills were drawn at the same time (1814) and place (Market Drayton). Is this dummy picking up effects of the year or place? In 1814 the War of 1812 was continuing and there were several battles in between England and the U.S. in North America. The first steam locomotive went into service. The Anglo-Dutch Treaty was signed, which returned most of the Dutch Empire acquired by England back to Holland. In December of 1814, the War of 1812 ended with the Treaty of Ghent. In short, there does not seem to

have been any events that would have been related to the number of indorsements on the Glyn Mills bills. For example, there was no financial crisis or any significant event with the Bank of England.

Market Drayton (Shropshire) also was apparently not special, although there is a little information.⁵⁸ Some evidence does suggest that it was a typical market town. Popp (2007) studied the firm of John Shaw & Sons of Wolverhampton and commercial travelling in early nineteenth century England. The firm was a hardware factor, selling and distributing. This involved marketing the goods, which required travelling. Popp studied the itineraries of these trips. The list of stops for a Liverpool area journey in November 1814 lists twenty-four towns where Shaw stopped. One of these was Market Drayton.

Also, it could be that Glyn Mills had more wealth than any of the indorsers to other bills, but Glyn Mills also had an unknown amount of other liabilities. And Glyn Mill's leverage could not have been known and hence it would not be known that there was more wealth in any meaningful sense. According to Bailey (2003), speaking of joint-stock banks: "Balance sheet data and information relating to the internal operation of institutions were regarded by many contemporaries as essentially private in nature. Indeed, the idea of the public disclosure of balance sheets was anathema for many bankers" (p. 71). The Report of the 1836 Select Committee on Joint Stock Banks pointed out that "The Law does not provide for any publication of the liabilities and assets of these Banks, nor does it enforce the communication of any balance sheet to the proprietors at large".⁵⁹ This is consistent with the argument of Dang, Gorton, Holmström, Ordoñez (2017) that banks want to keep such information secret to maintain information-insensitivity. Moreover, Glyn Mills was not a joint-stock bank, but a private bank.⁶⁰

Glyn Mills was a very reputable bank and this no doubt played a role.⁶¹ Glyn Mills was run by generations of partners of substantial stature (e.g., members of Parliament, mayor of London, Sheriff; see Browne (1933) for details. In addition, Glyn survived the panics of 1793, 1825, and 1847 (also 1857 and 1866).⁶² Hoppit (1986) identified 1792/3 as the worst financial crisis of the century (1986, p. 55). The outbreak of war on the continent in 1792 caused uneasiness with rising bankruptcies and an unstable stock market marking the end of the year. The events of 1792 were a full-blown run and Glyn Mills (then called Glyn and Halifax) suspended payment to creditors. Fulford (1953) describes the stoppage as temporary. No financial assistance was received from the Bank of England. Glyn Mills also survived the Panic of 1825. Only two of the country banks with which Glyn Mills had accounts failed "and such loss was quickly made

⁵⁸ According to Everitt (1974): "There are few adequate histories of the market towns of England . . ." (p. 29).

⁵⁹ See British Parliamentary Papers, IX, 1836, The Establishment of Joint Stock Banks, Select Committee Report. Also, cited by Bailey (2003).

⁶⁰ Modern financial reporting developed in the U.K. in the late nineteenth century; See Bryer (1993) and Parker (1990). But business historians are not convinced of the usefulness of late nineteenth century financial statements, never mind the first half of the century. See Arnold (1996).

⁶¹ The Hillington Collection of French decorative arts at the Metropolitan Museum of Art in New York City was formed by Charles Mills, a partner at Glyn, Mills, and bankers to the royal family. See Rorimer (1960)

⁶² Some authors refer the events in 1797 as a crisis, but the narratives of Glyn Mills do not mention this episode. James (2012) says that country banks did not experience a large number of failures. There is no agreement among scholars about which events constituted bona fide crises in the eighteenth century. James (2012) includes 1810\1811 and 1815/1819 as crises.

up by new Country Bank accounts - - -formerly kept with London banks which had failed” (Fulford (1953, p. 110).

The sample period includes the Panics of 1793 and 1825. But the sample has no bills for 1793 and only one bill for 1794 (1.5 months, 86.70 pounds, two signatures, so nothing unusual). Similarly, the sample has no bills for 1825 and only one bill for 1826 (6 months, 333.33 pounds, one signature, so nothing unusual). The Country Bankers Act of 1826 also occurred during the sample period. The sample has 207 bills 1826 or earlier, and 275 bills after 1826. However, all Glyn Mill and all Barclays bills are prior to 1826, whereas almost all other are after, so a date dummy using 1826 is basically the same as whether a bill was accepted by Glyn Mills or by Barclays or not. Regression bears this out. I also considered using the years when the Bank of England was restricted from paying out gold, 1797-1821, but this is a subset of the earlier time period and thus does not provide additional information for the same reason.

Table 4: Regression Summary Table								
		[1]	[2]	[3]	[4-A]	[4-B]	[4-C]	[4-D]
		OLS	OLS	OLS	OLS	Tobit	Poisson	Neg. Bin.
intercept	coefficient	6.3633	2.9074	4.9246	2.9662	2.5333	1.1132	1.0827
	std. error	0.4017	0.4319	0.4706	0.7151	0.7622	0.1986	0.2219
	t (or z) stat	15.8409	6.7323	10.4653	4.1482	3.3238	5.6042	4.8793
	p-value	0.0000	0.0000	0.0000	0.0000	0.0009	0.0000	0.0000
log10amount	coefficient	(1.6308)		(2.2678)	(1.6778)	(1.7114)	(0.5497)	(0.5427)
	std. error	0.1898		0.2297	0.2525	0.2688	0.0710	0.0794
	t (or z) stat	(8.5922)		(9.8728)	(6.6440)	(6.3661)	(7.7397)	(6.8370)
	p-value	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
multiple10	coefficient	0.5729		0.7912	0.5059	0.5614	0.1410	0.1477
	std. error	0.2280		0.2309	0.2210	0.2350	0.0562	0.0641
	t (or z) stat	2.5127		3.4260	2.2889	2.3886	2.5118	2.3041
	p-value	0.0123		0.0007	0.0225	0.0169	0.0120	0.0211
maturity	coefficient		0.6373	1.6787	1.8313	2.0224	0.5731	0.5772
	std. error		0.2930	0.2862	0.2870	0.3066	0.0840	0.0931
	t (or z) stat		2.1752	5.8648	6.3800	6.5965	6.8211	6.2016
	p-value		0.0301	0.0000	0.0000	0.0000	0.0000	0.0000
maturitysq	coefficient		(0.1424)	(0.2127)	(0.2175)	(0.2360)	(0.0684)	(0.0685)
	std. error		0.0455	0.0421	0.0405	0.0431	0.0121	0.0133
	t (or z) stat		(3.1333)	(5.0568)	(5.3667)	(5.4784)	(5.6636)	(5.1596)
	p-value		0.0018	0.0000	0.0000	0.0000	0.0000	0.0000
acceptGlynMills	coefficient				1.7972	1.9929	0.4326	0.4459
	std. error				0.3349	0.3560	0.0866	0.0980
	t (or z) stat				5.3664	5.5984	4.9961	4.5519
	p-value				0.0000	0.0000	0.0000	0.0000
acceptBarclays	coefficient				(1.1864)	(1.9373)	(0.5930)	(0.5931)
	std. error				0.5108	0.5741	0.1742	0.1881
	t (or z) stat				(2.3227)	(3.3742)	(3.4044)	(3.1537)
	p-value				0.0206	0.0007	0.0007	0.0016
# Observations	482	482	482	482	482	482	482	482
Adjusted R Squared	0.1412	0.0327	0.1985	0.2923	0.2960	0.3054	0.3048	0.3048

6. Conclusion

The heartland of the Industrial Revolution supported a dense network of business relationships, in which merchants, manufacturers, and tradesmen needed a form of money. Private bank notes were not used because banks were not credible. They were undercapitalized and frequently failed. Coin was scarce and what was available was used to pay laborers. The need for “money” among merchants, manufacturers, and tradesmen was filled by inland bills of exchange. Inland bills were credibly information-insensitive debt conditional on the identity of the bill profferer because joint liability meant that all indorsers risked their wealth to guarantee the bill being offered in a transaction.

A sample of 482 inland bills was studied and the identities of borrowers, lenders, and indorsers was studied to the extent the identities could be determined. Indeed, bills were used by merchants, manufacturers, and tradesmen. Unlike a bank, which issues liabilities backed by assets, short-term debt backed by loans, the inland bill of exchange was evidence of a loan, backed by the wealth of the parties to the bill. A higher velocity of a bill, more indorsements, was associated with smaller amounts, longer maturity, and bills of a round amount, multiples of ten.

DGH have argued that the optimal design of private money is debt backed by debt. In the context here that would mean that bills backed by banks would be more liquid than bills backed by personal wealth. In the case of personal wealth, information about the parties to the bill was important in order to believe that the bill was near riskless. Bank-backed bills, i.e., Glyn Mills, were more liquid (relative to non-bank-backed bills) even though no one knew anything about the Glyn Mill’s balance sheet, quality of assets, or leverage. If no one knew anything about the bank (other than its reputation) and everyone knew that no one knew, because it was too costly to produce private information, Glyn Mills backed bills would more liquid. Bills backed by Barclays, however, had lower velocity, likely because Gurney was in an agricultural area. The evidence is consistent with this.

If there is a shortage of safe debt so that the private sector needed to create such debt, e.g., securitization, what is the best way? Suppose Google issued short-term debt. Provided not too much was issued it would be rated AAA. Would this debt be efficient? Based on the history of inland bills of exchange, the answer is no. It would be better to back such debt with debt.

Table A1: Borrower and Lender Identities

Year	Borrower/Lender	Name	Occupation	Location	Source
1814	Borrower	J. Wilkes	Flax spinner, dealer, chapman	Otley, Yorkshire	London Gazette, Issue 17219, 15 February 1817, page 351-352
1814	Lender	James Baker	Tanner	Market Drayton, Shropshire	Staffordshire Advertiser, 27 August 1814, page 4; Shropshire Baptisms
1814	Borrower	R. Spearman	Banker	Market Drayton, Shropshire	Holden's Annual London and Country Directory for the Year 1811 (facsimile text edition published 1996); London Gazette Archives, issue 16503, 9 July 1811, page 1276 (accessed via www.thegazette.co.uk)
1814	Lender	Richard Spendelow	Ironmonger, grocer, dealer, chapman	Market Drayton, Shropshire	London Gazette, Issue 17936, 1 July 1823, page 1081
1814	Borrower	Thomas Brayn	Currier	Market Drayton, Shropshire	1841 Census
1814	Lender	William Turner	Timber merchant	Stone, Staffordshire	Staffordshire Advertiser, 16 October 1819, page 1
1806	Lender	James Owles	Shopkeeper, grocer, linen draper	Bungay, Suffolk	Bury and Norwich Post, 19 April 1806, page; 4 June 1806, page 2
1790	Borrower	George Harrison	Pig dealer	Scamblesby, Lincolnshire	Stamford Mercury, 17 January 1780, page 4
1839	Borrower	John Adams & Sons	Flax dresser, spinner, merchant	Selby, Yorkshire	1841 Census; Pigot and Co's National Commercial Directory for 1834, page 920
1850	Lender	Simpson & Whaplate	Timber merchant	Sculcoates, Yorkshire	The Globe, 9 August 1826, page 1
1841	Lender	John Youle	Timber merchant	Nottingham, Nottinghamshire	Nottingham Journal, 7 December 1811, pag 1
1841	Lender	Timothy Thorney	Timber merchant	Sculcoates, Yorkshire	1841 Census
1844	Lender	Richard Wade Sons & Co.	Timber merchant	Ferrybridge, Yorkshire	Leeds Intelligencer, 29 March 1819, page 2
1845	Lender	Dan Peacock	Lodging-housekeeper	Manchester, Lancashire	Hull Packet, 14 August 1846, page 8

1836	Lender	James Clarkson	Manufacturer	Mirfield, Yorkshire	1841 Census
1844	Lender	James Audus	Magistrate	Selby, Yorkshire	1851 Census
1831	Borrower	David Hardie	Wine & spirit merchant	Manchester, Lancashire	1851 Census
1833	Borrower	Wilson Foster	Tailor, woollen draper, dealer, chapman	Liverpool, Lancashire	Gloucestershire Chronicle, 29 July 1837, page 2
1835	Borrower	George Wright	Hat manufacturer	Manchester, Lancashire	1841 Census
1835	Lender	John Ibbotson	Paper manufacturer	Manchester, Lancashire	Manchester Courier and Lancashire General Advertiser, 10 March 1838, page 1
1835	Borrower	W. Dakin	Warehouseman	Manchester, Lancashire	1851 Census
1836	Borrower	J.W. Haythorn	Cotton thread manufacturer	Manchester, Lancashire	Blackburn Standard, 4 January 1837, page 3
1845	Lender	Jarvie & Rowley	Silk manufacturer	Manchester, Lancashire	London Gazette, issue 20562, 20 January 1846, page 224
1845	Borrower	John Carlile	Merchant	Liverpool, Lancashire	1841 Census
1837	Lender	Thomas Beckett	Farmer	Norbury, Cheshire	1841 Census
1841	Borrower	James Stuttard	Cotton manufacturer	Clitheroe, Lancashire	1841 Census
1847	Borrower	Nathan Andrews	Builder, cabinet maker, joiner	Selby, Yorkshire	1841 Census
1842	Lender	Richard Almond	Coal merchant	Standish, Lancashire	1841 Census

Table A2: Stamp Taxes on Inland Bills of Exchange

(Duties imposed by 55 Geo. III, cap. 184)

Stamp Taxes					
Stamp Groups	Tax ⁺	Two Months Maturity		More than Two Months	
		Bill From £	To £	Bill From £	To £
Group 1	1s.	2	5	---	---
	1s. 6d.	5	20	2	5
	2s.	20	30	5	20
	2s. 6d.	30	50	20	30
Group 2	3s. 6d.	50	100	30	50
	4s. 6d.	100	200	50	100
	5s.	200	300	100	200
	6s.	300	500	200	300
Group 3	8s. 6d.	500	1,000	300	500
	12s. 6d.	1,000	2,000	500	1,000
	15s.	2,000	3,000	1,000	2,000
	25s.	3,000	Above	2,000	3,000
	30s.	---	----	3,000	above

Source: Newmarch (1851), p. 146.

+ "d." stands for denarius, the Roman standard of silver coin. Denarius is another name for pence. 240 denarius (pence) equals 1£. "s." stands shilling. Twenty shillings equals 1£.

References

Government Documents

British Census Records, 1841-1871 (See <https://www.thegenealogist.co.uk/>).

Gladstone, John (1826), testimony, "Minutes of Evidence Before the Select Committee", On Promissory Notes in Scotland and Ireland in Reports from Committees, Vol. III (1826).

Selection of Reports and papers of the House of Commons: Currency and Banking (1836), Volume 29.

Parliamentary Papers: 1780-1849, Volume 52, Part 2: Banking-Coinage.

Documents from Lancashire Archives, Bow Lane, Preston, Lancashire, various.

UK Poll Books and Electoral Registers, 1538-1893, for Dickering, Yorkshire; Bold Street, Liverpool; Parish of St. Sepulchre, Middlesex; Gloucester.

Third Report from the Committee of Secrecy on the Outstanding Demands of the Bank of England, April 1797; Reports from Committees of the House of Commons, Vol. XI (1803), Miscellaneous Subjects: 1782-1799.

Report from the Committee of Secrecy on the Bank of England Charter, August 1832.

Church and Parish Registers

Baptism registers for All Saints Church, Runcorn, Cheshire (from Chester Diocese of Chester Parish Records 1538-1911 accessed via www.findmypast.co.uk).

Baptism registers for Almondbury, Yorkshire (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for Chapel Street Independent Chapel, Salford (sourced via www.lan-opc.org.uk from transcriptions of Latter-Day Saints (LDS) Film 560897).

Baptism registers for Christ Church, Hunter Street, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656373).

Baptism registers for Ellenbrook Chapel, Worsley, Lancashire (sourced via www.lan-opc.org.uk from transcriptions of records kept at Manchester Central Library).

Baptism registers for Highfield Independent Chapel, Huddersfield, Yorkshire (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Baptism register for Hodnet, Shropshire (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for Holy Trinity, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656015).

Baptism registers for Huddersfield Baptist Chapel (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Baptism registers for St. Mary's Church, Market Drayton, Shropshire, pp. 42, 59, 103, 131, 145 (from England Births and Baptisms 1538-1975 sourced via www.findmypast.co.uk).

Baptism registers for All Saints Church, Runcorn, Cheshire (from Chester Diocese of Chester Parish Records 1538-1911 accessed via www.findmypast.co.uk).

Baptism registers for Almondbury, Yorkshire (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for Chapel Street Independent Chapel, Salford (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 560897).

Baptism registers for Christ Church, Hunter Street, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656373).

Baptism registers for Ellenbrook Chapel, Worsley, Lancashire (sourced via www.lan-opc.org.uk from transcriptions of records kept at Manchester Central Library).

Baptism registers for Highfield Independent Chapel, Huddersfield, Yorkshire (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Baptism register for Hodnet, Shropshire (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for Holy Trinity, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656015).

Baptism registers for Huddersfield Baptist Chapel (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Baptism registers for St. Mary's Church, Market Drayton, Shropshire, pp.42, 59, 103, 131, 145 (from England Births and Baptisms 1538-1975 sourced via www.findmypast.co.uk).

Baptism registers for the Moravian Chapel, Fairfield, Droylsden, Lancashire (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 560881).

Baptism registers for Old Meeting House Independent or Protestant Dissenters, Kidderminster (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for St. Bartholomew's Church, Chipping (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1471024).

Baptism registers for St. Chad's Church, Shrewsbury (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Baptism registers for St. Elphin's Church, Warrington (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1562957).

Baptism registers for St. Leonard's Church, Downham (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1278942).

Baptism registers for St. Nicholas' Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 93833).

Baptism registers for St. Peter's Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656015).

Baptism and burial registers for St. Mary and All Saints Church, Whalley, Lancashire (sourced via www.lanopc.org.uk from transcriptions of LDS Film 1471099).

Baptism registers for St. Nicholas' Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 93833).

Baptism registers for St. Thomas' Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1546062).

Baptism registers for St. Mary the Virgin and St. Germain Church, Selby, Yorkshire (sourced via www.familysearch.org).

Baptism registers for St. Wilfrid's Church, Standish (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1526140).

Baptism registers for Swan Hill Independent Chapel, Shrewsbury (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Baptism registers for the Wesleyan Methodist Church, Blackley, Manchester (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 560877).

Births 1812-1817, Dr. Williams' Library Registry (from England and Wales Non-Conformist and Non-Parochial Registers 1567-1970 sourced via www.ancestry.co.uk).

Burial registers for St. Chad's Church, Shrewsbury (from England Select Deaths and Burials 1538-1991 sourced via www.ancestry.co.uk).

Burial registers for St. Elphin's Church, Warrington (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1562958).

Burial registers for St. Mary the Virgin Church, Eccles, Lancashire (sourced via www.lan-opc.org.uk from transcriptions of records kept at Manchester Central Library).

Burial registers for St. Nicholas' Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1068892).

Burial registers for St. Paul's Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656373).

Burial registers for St. Peter's Church, Woolton (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 2147930).

Burial registers for St. Peter and St. Paul's Church, Ormskirk (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1849664).

Burial records for Stockport, Cheshire (from Cheshire Select Bishop's Transcripts 1576-1933 sourced via www.ancestry.co.uk).

Burial registers for Swan Hill Independent Chapel, Shrewsbury (from England and Wales Non-Conformist and Non-Parochial Registers 1767-1837 sourced via www.ancestry.co.uk).

Burial registers for West Orchard Independent Chapel, Coventry, Warwickshire (sourced via www.ancestry.co.uk).

Cheshire Marriage License bonds and allegations 1606-1905 (accessed via www.findmypast.co.uk).

Marriage registers for All Hallows Church, Almondbury, Yorkshire (from West Yorkshire Church of England Baptisms, Marriages and Burials 1512-1812 sourced via www.ancestry.co.uk).

Marriage registers for Almondbury, Yorkshire (from England Select Marriages 1538-1975 sourced via www.ancestry.co.uk).

Marriage registers for the Collegiate Church, Manchester (Manchester Cathedral) (sourced via www.lanopc.org.uk from transcriptions of LDS Film 1545577).

Marriage registers for the Collegiate Church, Manchester (Manchester Cathedral) (sourced via www.lanopc.org.uk from transcriptions of LDS Film 2356729).

Marriage registers for the Collegiate Church, Manchester (Manchester Cathedral) (from Lancashire Church of England Marriages and Banns 1754-1836 sourced via www.ancestry.co.uk).

Marriage register for Hodnet, Shropshire (from England Select Marriages 1538-1975 sourced via www.ancestry.co.uk).

Marriage registers for Holy Trinity Church, Kingston upon Hull, pg.455 (accessed via www.findmypast.co.uk).

Marriage registers for Market Drayton, Shropshire (from England Select Marriages 1538-1975 sourced via www.ancestry.co.uk).

Marriage registers for Prestbury, Cheshire (from Cheshire Select Bishop's Transcripts 1576-1933 sourced via www.ancestry.co.uk).

Marriage registers for St. Alkmund's Church, Shrewsbury (from England Select Births and Christenings 1538-1975 sourced via www.ancestry.co.uk).

Marriage registers for St. Elphin's Church, Warrington (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1562958).

Marriage registers for St. John's Church, Deansgate, Manchester (scanned image, sourced via <https://www.familysearch.org/ark:/61903/3:1:S3HY-6P13-FW8?i=103&cc=1788853>).

Marriage registers for St. Nicholas' Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 93839).

Marriage registers for St. Paul's Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 1656374).

Marriage registers for St. Paul's Church, Liverpool (from England Select Marriages 1538-1975 sourced via www.ancestry.co.uk).

Marriage registers for St. Peter's Church, Leeds (from Yorkshire Church of England Baptisms, Marriages and Burials 1512-1812 sourced via www.ancestry.co.uk).

Marriage registers for St. Peter's Church, Liverpool (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 93918).

Marriage registers for St. Mary the Virgin Church, Bury, Lancashire (sourced via www.lan-opc.org.uk from transcriptions of LDS Film 559158).

Marriage registers for St. Mary the Virgin Church, Eccles, Lancashire (from Church of England Marriages and Banns 1754-1930 sourced via www.ancestry.co.uk).

Marriage registers for South Cerney, Gloucestershire (accessed via www.ancestry.co.uk).

Marriage registers for Westbury, Wiltshire (from Wiltshire Church of England Marriages and Banns 1754-1916 accessed via www.ancestry.co.uk).

Non-Conformist birth records for an unspecified venue in Margate, Kent (from England and Wales Non-Conformist Births and Baptisms accessed via www.findmypast.co.uk).

Quaker Marriage Registers for Ross, Herefordshire (from England and Wales Quaker Birth, Marriage Death Registers 1578-1837, accessed via www.ancestry.co.uk).

Trade Directories

Baines' Lancashire, or History, Directory and Gazeteer of the County Palatine of Lancashire Volume 2 (1825; David & Charles Ltd., Newton Abbot, Devon), pp.185, 187, 206, 212, 220, 245, 267.

The Commercial Directory for Liverpool 1816-1817, pp. 179, 335 (1816, Wardle and Pratt, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

The Commercial Directory for 1816-1817, pp.82, 236, 246, 254, 296 (1816, Wardle and Pratt, and Pigot, Manchester; sourced via UK City and County Directories 1766-1946 collection at www.ancestry.co.uk).

The Commercial Directory for 1818, 18 & 20, pp.9, 122, 187, 462 (1818, J. Pigot, R. & W. Dean, Manchester).

General Directory and Topography of Kingston-Upon-Hull and the City of York, pg.30 (1851, Francis White and Co., Sheffield; printed by John Blurton, Sheffield) [accessed via the University of Leicester Special Collections at <http://specialcollections.le.ac.uk/digital/collection/p16445coll4/id/313289>].

Glover's Nottingham Directory for 1825, pp.133, 142 (1825, S. Glover, Carlton Street, Nottingham).

Gore's Directory of Liverpool, 1821, pp. 49, 185, 195 (1821, printer - J. Gore, Liverpool; sourced via UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

Baines, Edward (compiler) *History, Directory and Gazetteer of the County Palatine of Lancaster Volume 1*, pp.283-85, 291, 337 (Wm. Wales and Co., Liverpool, 1824).

The History and Directory of the Towns and Principal Villages in the County of Lincoln, pg.161 (1826, William White and Co., Leeds; printer - Edward Baines).

History, Directory & Gazetteer of the County of York: Volume 2 (East and North Ridings), pp.197, 261-62, 317, 400, 448, 586 (1823, publisher - Edward Baines, Leeds Mercury Office) [accessed via the University of Leicester Special Collections at <http://specialcollections.le.ac.uk/digital/collection/p16445coll4/id/264462/rec/4>].

Holden's Annual Directory: Class Second, First Edition, pp. 163,170 (1816, Holden, London).

Holden's Annual London and Country Directory of the United Kingdoms, and Wales, in Three Volumes, for the Year 1811: Volume 2 (1996 facsimile text edition, Michael Winton, 1996, Norwich).

Holden's Annual London and Country Directory of the United Kingdoms, and Wales, in Three Volumes, for the Year 1811: Volume 3 (1811; W. Glendinning, Hatton Garden; J. Black, St. Martin's-le-Grand; R. Wilks, Chancery Lane).

Holden's Triennial Directory, Fourth Edition for 1805, 1806, 1807, Second Volume, pp.170, 182 (1805, London, printers - W. Glendinning, W. Calvert, Barnard and Sultzer, C. Stowers, C. Spilsbury, R. Wilks, H. Hart).

The Leeds Directory for the Year 1798, pg. 58 (unspecified publisher, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

A List of the Country Banks of England and Wales (1838) (M.A. Marchant; London), unknown compiler.

Manchester and Salford Directory, pg.100 (1800; G. Banchks).

Mathew's Annual Bristol Directory and Commercial List (1836, M. Mathews and Son).

New General and Commercial Directory of Sheffield (1825, compiler - R. Gell, printer - Albion Press, Manchester).

The Nottingham Directory, pp.62, 70 (1815, Sutton and Son, Nottingham).

Pigot's Directory of Cheshire and Staffordshire, pg.20 (1822, J. Pigot and Co., London and Manchester, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

Pigot's Directory of Lancashire 1830-1831, pp.153-55, 157-161, 163-64, 167-68, 170-74, 176-178, 181, 184, 187-194, 314, 335, 345-46, 348, 351-52, 355, 357, 359, 365-67, 370-71, 375-378, 384, 386, 388, 390, 392-93, 395, 398-99.

Pigot's Directory of Northamptonshire 1830, pg.620 (1830, J. Pigot and Co., London and Manchester).

Pigot's Directory of Warwickshire 1821-22, pg.820 (1821, J. Pigot and Co., London and Manchester).

Pigot and Co.'s Directory of Herefordshire 1835, pg.106 (1835, J. Pigot and Co., London and Manchester).

Pigot and Co's London and Provincial New Commercial Directory for 1822-23, pg.676 (1822, J. Pigot and Co., Fountain Street, Manchester).

Pigot and Co.'s National Commercial Directory, pp.57, 349, 902, 920, 999 (1834, J. Pigot and Co., London and Manchester, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

Pigot and Co.'s National Commercial Directory, pg.92 (1835, J. Pigot and Co., London and Manchester, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

Pigot and Co.'s National Commercial Directory for 1828-9, pp.47, 401, 1179 (1828, J. Pigot and Co., London and Manchester, sourced from UK City and County Directories 1766-1946, accessed via www.ancestry.co.uk).

Pigot and Co.'s National Commercial Directory for 1828-9, Part Two, pp.676, 783 (1828, J. Pigot and Co., London and Manchester) [accessed via the University of Leicester Special Collections at <http://specialcollections.le.ac.uk/digital/collection/p16445coll4/id/231934>].

Pigot & Dean's New Directory of Manchester, Salford, &c for 1821-2, pp.34, 133, 152, 280 (1821, R. and W. Dean, and J. Pigot, Manchester).

The Post-Office Annual Directory For 1808. Being a List of upwards 16,000 Merchants, Traders, &c. of London, and Parts Adjacent, Ninth Edition, pg.235 (1808, compiler - B. Critchett; printer - T. Maiden, London).

The Post Office Annual Directory for 1815, pg.153 (1815, compilers - Critchett and Woods, printer - T. Maiden, London).

The Small Edition of the Post Office London Directory, 1843 (W. Kelly & Co.; London)

Robson's Improved London Directory, Street Guide, and Carriers' List for 1820, pg.472, (1820, William Robson and Co., London).

Scholes Manchester and Salford Directory, pg.153 (1794, Sowler and Russell, Deansgate, Manchester).

Scholes Manchester and Salford Directory, pg.143 (1797, Sowler and Russell, Deansgate, Manchester).

Slater's Royal National and Commercial Directory and Topography of the Counties of Gloucester, Hereford, Monmouth, Shropshire and North and South Wales, pg.19 (1859, Isaac Slater, Manchester and London).

Transcription of the Bristol section of *Pigot's Directory of Gloucestershire* (1830) (sourced via www.genuki.org.uk/big/eng/GLS/Bristol/DUFETTtoJOSEPH).

Twigg's Corrected List of the Country-Bankers of England and Wales (1830) (T. Twigg; London).

Whellan and Co's General and Commercial Directory of Manchester and Salford, pg.488, (1852, publisher -W. Whellan; printers - Booth and Milthorp, 28 New Cannon Street, Manchester).

Newspapers

Aris's Birmingham Gazette, various.

Bath Chronicle and Weekly Gazette, various.

Bell's Life in London and Sporting Chronicle, various.

Bell's New Weekly Messenger, various.

Blackburn Standard, various.

Bradford Observer, various.

Bristol Journal, various.

Bristol Mercury, various.

Bristol Mirror, various.

Bury and Norwich Post, various.

Caledonian Mercury, various.

Cambridge Chronicle and Journal, various.

Cheltenham Chronicle, various.

Chester Chronicle, various.

Chester Courant, various.

Country Chronicle, Surrey herald and Weekly Advertiser for Kent, various.

Coventry Standard, various.

Derby Mercury, various.

Devizes and Wiltshire Gazette, various.

Dublin Evening Post, various.

Durham County Advertiser, various.

Eddowe's Journal and General Advertiser, various.

Evening Mail, various.

The Globe, various.

Gloucester Journal, various.

Gloucestershire Chronicle, various.

Hereford Times, various.

Hiberian Journal (or Chronicle of Liberty), various.

Hull Advertiser and Exchange Gazette, various.

Hull Packet, various.

Kentish Gazette, various.

Lancaster Gazette, various.

Leeds Intelligencer, various.

Leeds Mercury, various.

Leicester Journal, various.

Lincolnshire Chronicle, various.

London Courier and Evening Gazette, various.

London Gazette, various.

Manchester Courier and Lancashire General Advertiser, various.

Manchester Mercury, various.

Manchester Times, various.

Morning Chronicle, various.

Morning Post, various.

Newcastle Journal, various.

Norfolk Chronicle, various.

Nottingham Journal, various.

Northampton Mercury, various.

Oxford University and City Herald, various.

Perry's Bankrupt Gazette, various.

Public Ledger and Daily Advertiser, various.

Sheffield Independent, various.

Shrewsbury Chronicle, various.

Staffordshire Advertiser, various.

Stamford Mercury, various.

Suffolk Chronicle, various.

Windsor and Eton Express, various.

Wolverhampton Chronicle and Staffordshire Advertiser, various.

Worcester Chronicle, various.

Worcester Journal, various.

Yorkshire Gazette, various.

Miscellaneous References

Abstract of a legal case concerning Barclay and Co., c. 1910 [sourced via <https://swarb.co.uk/parsons-v-barclayand-co-ltd-and-goddard-ca-1910/>].

Abstract of a property lease concerning Richard Almond, 27 June 1835, document reference DDHE/108/11 (located via the Lancashire Archives Online Catalogue at <http://archivecat.lancashire.gov.uk/calmview/>).

Biographical details for Sir Richard Carr Glyn, b.1755 d.1838 (sourced via www.historyofparliamentonline.org/volume/1790-1820/member/glyn-sir-richard-carr-1755-1838) Branch records concerning Gosling and Sharpe, held by Barclays Group Archives, reference number GB 2044 C FLEET STREET 19 (GOSLINGS) (sourced via <https://archiveshub.jisc.ac.uk/search/archives/2d1cb667-52ab-31ce-96ed-edf28b069dff>).

Death registration of George Furnival aged 76 in Warrington registration district, December quarter 1847, volume 20, page 1027.

Death registration of Richard Jarvis Spendelow aged 83 in Market Drayton sub-registration district, June quarter 1855, volume 6a, page 515.

England and Wales Prerogative Court of Canterbury Wills 1384-1858 (sourced via www.ancestry.co.uk).

Gloucestershire Archives Online Catalogue listing for documents P71 OV 5/2/23 and P71 OV 5/8/1 relating to Nathaniel Townsend (sourced via <http://ww3.gloucestershire.gov.uk/genealogy/Search.aspx>).

Honley Township Records Assessment for the Repairs of the Chapel, 1806 (from West Yorkshire, England, Select Rate Books, Accounts and Censuses 1705-1893 accessed via www.ancestry.co.uk).

Indexed reference to a digitised copy of the will of Benjamin Gillam, banker of Bristol, 1789 [sourced via <http://discovery.nationalarchives.gov.uk/details/r/D372258>].

Indexed reference to a digitised copy of the will of William Hole, banker of Bristol, 1796 [sourced via <http://discovery.nationalarchives.gov.uk/details/r/D322570>].

Land Tax Assessment for the Parish of Selby in the Division of Barkston Ash in the County of York for 1830 (from West Yorkshire Select Land Tax Records 1704-1932 accessed via www.ancestry.co.uk).

Reports from Committees of the House of Commons, vol. XI, 1803, Miscellaneous Subjects, 1782-1799.

Returns of Papists for Ormskirk, 1767, pg.4 [held at the Lancashire Archives, Bow Lane, Preston].

Staffordshire Archives Online Catalogue listing for Easter 1800 quarter sessions record, reference Q/SB 1800 E/111 (located at <http://www.archives.staffordshire.gov.uk/CalmView/Overview.aspx?src=CalmView.Catalog>).

Staffordshire Archives Online Catalogue listing for item reference D4842/11/1/134 (located at <http://www.archives.staffordshire.gov.uk/CalmView/Overview.aspx?src=CalmView.Catalog>).

Transcription of the will of Joseph Hurst, leather dealer of Ormskirk, Lancashire, 7 January 1818 (produced c. November 2013 by Kate Hurst from an original document held at the Lancashire Archives, Bow Lane, Preston, Lancashire).

UK Death Duty Registers Index 1796-1811 (sourced via www.ancestry.co.uk).

UK Extracted Probate Records 1269-1975 (sourced via www.ancestry.co.uk).

UK Register of Duties Paid for Apprentices' Indentures 1710-1811 (sourced via www.ancestry.co.uk).

Legal Cases

Williams v. Field (1694), 3 Salk. 68.

Giles v. Perkins 103 E.R. 441 (1807).

Hodges v. Steward (1691), 3 Salk. 68.

Martin v. Bourne (1602) 2 Croke, 6.

Miller v. Race (1758), 1 Burr. 452.

Nicholson v. Sedgwick (1698), 3 Salk.

William v. Field (1693) 91 ER 522.

Other Primary Sources

Bayley, John (1826), Summary of the Law of Bills of Exchange (Harrison Gray: Boston).

Burgess, Henry (1826), A Letter to the Right Hon. George Canning (Harvey and Darton: London).

Burke, John (1839), Genealogical and Heraldic Dictionary of the Peerage and Baronetage of the British Empire, Sixth Edition (Henry Colburn).

Byles, John (1874), A Treatise on Bills of Exchange, Promissory Notes, and Bank-Notes and Checks, 12th Edition (H. Sweet).

- Caird, James (1852), English Agriculture, 1850-51 (Longman, Brown, Green, and Longmans; London).
- Dodd, William (1848), The Laboring Classes of England (John Putnam).
- Druery, John Henry (1826), Historical and Topographical Notices of Great Yarmouth, in Norfolk, and its Environs (Nichols & Son; London).
- Forbes, William (1718), A Methodological Treatise concerning Bills of Exchange, excerpt reprinted in Money and Banking in England, edited by B.L. Anderson and P.L. Cottrell (David & Charles: London).
- Forbes, William (1860), Memoirs of a Banking-House (William and Robert Chambers: London).
- Fullarton, John (1845), On the Regulation of Currencies, second edition (John Murray: London).
- Glyde, John (1856), Suffolk in the Nineteenth Century (Simpkin, Marshall and Co.; London).
- Gordon, Richard (1836), A Review of the Trade of Banking in England and Ireland (Milliken and Son: Dublin).
- Heywood, B. A. (1812), Observations on the Circulation of Credit and on the Banking System of England (Longman, Hurst, Rees, Orme & Co.: London).
- Johnstone, G. (1811), The Speech of Mr. Johnstone (J. Booker: London).
- Leatham, William (1840), Letter on the Currency (Pelham, Richardson, Cornhill: London).
- Lee, John (1861), A History of Market Drayton (Longman, Green, Longman and Roberts: London).
- Leekey, George (1813), The Stamp Office List of Country Bankers (W. Heseltine; London).
- Newmarch, William (1857), Appendix XI of A History of Prices, Vol. 6, Thomas Tooke and William Newmarch (Longman, Brown, Green, Longmans, & Roberts: London).
- Newmarch, William (1851), "An Attempt to Ascertain the Magnitude and Fluctuations of the Amount of Bills of Exchange (Inland and Foreign) in Circulation at one time in Great Britain," *Journal of the Statistical Society of London* 14, 143-183.
- Norwood, Surrey (1858), British Losses by Bank Failures (Water Low and Sons; London).
- Price, Hilton F. G. (1890), A Handbook of London Bankers (Leadenhall; London).
- Russell, John and David MacLachlan (1859), Chitty on Bills of Exchange, tenth edition (Henry Sweet: London).
- Thornton, Henry (1802), An Enquiry into the Nature and Effects of the Paper Currency on Great Britain (J. Hatchard: Piccadilly).

Tooke, Thomas and William Newmarch (1857), History of Prices, Vol. 6 (Longman, Brown, Green, Longmans, & Roberts: London).

Tournay, Stewart (1851), A Practical Guide to the Law of Bills of Exchange (Groombridge and Sons: London).

Twigg, T. (1830), Twigg's Corrected List of the Country-Bankers of England and Wales (T. Twigg; London).

Unknown Author (1821), Review of the Banking System of Britain (Sterling & Slade; Edinburgh).

Secondary Sources

Ackrill, Margaret and Leslie Hannah (2001), Barclays: The Business of Banking 1690-1996 (Cambridge University Press).

Anderson, B. L. (1970), "Money and the Structure of Credit in the Eighteenth Century," *Business History* 12, 85-101.

Arnold, A. J. (1996), "Should Historians Trust Late Nineteenth-Century Company Financial Statements?," *Business History* 38, 40-54.

Ashton, T. S. (1924), Iron and Steel in the Industrial Revolution (2013 reprint of original; Facsimile Publisher, Delhi, India).

Ashton, T. S. (1945), "The Bill of Exchange and Private Banks in Lancashire, 1790-1830," *Economic History Review* 15, 25-35.

Ashton, T. S. (1959), Economic Fluctuations in England, 1700-1800 (Clarendon Press; Oxford).

Ashton, T. S. (1961; reprint of 1939 original), An Eighteenth-Century Industrialist: Peter Stubs of Warrington, 1756-1806 (Manchester University Press).

Ashton, T. S. (1968), The Industrial Revolution (Oxford University Press).

Baily, Cheryl (2003), "Provincial Banking in Nineteenth Century England: York City & County Banking Co., 1830-1880, PhD thesis submitted at the University of Lancaster.

Baines, Edward (c. 1835), *History of the Cotton Manufacture in Great Britain* (H. Fisher, R. Fisher and P. Jackson; London).

Barker, T. C. (1951), "Lancashire Coal, Cheshire Salt and the Rise of Liverpool," *Transactions of the Historic Society of Lancashire and Cheshire* 103.

Beutel, Frederick (1938), "The Development of Negotiable Instruments in Early English Law," *Harvard Law Review* 51, 813-845.

Birch, Alan (1967), The Economic History of the British Iron and Steel Industry (Frank Cass & Co.).

- Black, Iain (1996), "The London Agency System in English Banking, 1780-1825," *The London Journal* 21, 112-130.
- Browne, Eric Gore (1933), Glyn, Mills & Co. (privately published).
- Bryer, R. A. (1993), "The Late Nineteenth-Century Revolution in Financial Reporting: Accounting for the Rise of Investor or Managerial Capitalism?," *Accounting, Organizations and Society* 18, 649-690.
- Cameron, Rondo (1967), "England: 1750-1844," Chapter II of Banking in the Early Stages of Industrialization, edited by R. Cameron (Oxford University Press).
- Chapman, S. J. (1904), The Lancashire Cotton Industry: A Study of Economic Development (Manchester, 1904).
- Checkland, S. G. (1954), "The Lancashire Bill System and Its Liverpool Protagonists, 1810-1827," *Economica*, New Series, Vol. 21, 129-142.
- Collins, M. (1972), "The Bank of England at Liverpool 1827-1844," *Business History* 14, 144-165.
- Cottrell, P. L. (1991), "The Coalescence of a Cluster of Corporate International Banks, 1855-75," *Business History*, 33, 31-52.
- Cottrell, P.L. (1980), Industrial Finance 1830-1914: The Finance and Organization of the English Manufacturing Industry (Routledge).
- Crone, Rosalind (2015). "Education in the working-class home: modes of learning as revealed by nineteenth century criminal records", *Oxford Review of Education*, 41(4) pp. 482–500.
- Cuadras-Morató, Xavier and Joan Rosés (1998), "Bills of Exchange as Money: Sources of Monetary Supply during the Industrialization of Catalonia, 1844-74," *Financial History Review* 5, 27-47.
- Dang, Tri Vi, Gary Gorton, and Bengt Holmström (2019), "The Information View of Financial Crises," *Annual Review of Financial Economics*, forthcoming.
- Dang, Tri Vi, Gary Gorton, and Bengt Holmström (2018), "Ignorance, Debt and Financial Crises," Working Paper, Yale University.
- Dang, Tri Vi, Gary Gorton, and Bengt Holmström, and Guillermo Ordoñez, (2017), "Banks as Secret Keepers," *American Economic Review* 107, 1005-1029.
- Dylag, Matthew (2010), "The Negotiability of Promissory Notes and Bills of Exchange in the Time of Chief Justice Holt," *Journal of Legal History* 31, 149-175.
- Everitt, Alan (1974), "The Banburys of England", *Urban History* 1, 28-38.
- Fulford, Roger (1953), Glyn's, 1753-1953: Six Generations in Lombard Street (Macmillan & Co.; London).

- Geva, Benjamin (2011), The Payment Order of Antiquity and the Middle Ages: A Legal History (Hart Publishing).
- Gorton, Gary (2017), "The History and Economics of Safe Assets," *Annual Review of Economics* 9, 547-86.
- Gorton, Gary (1999), "Pricing Free Bank Notes," *Journal of Monetary Economics* 44, 33-64.
- Gorton, Gary (1996), "Reputation Formation in Early Bank Note Markets," *Journal of Political Economy*, Vol. 104, 346-397.
- Gorton, Gary and George Pennacchi (1990), "Financial Intermediaries and Liquidity Creation," *Journal of Finance* 45(1): 49-72.
- Hawtrey, R. G. (1918), "The Bank Restriction of 1797," *Economic Journal* 28, 52-65.
- Hobsbawm, Eric and George Rudé (1970), Captain Swing (London).
- Hodges, T.M. (1947), "The Peopling of the Hinterland and the Port of Cardiff," *Economic History Review* 17, 62-72.
- Hoppit, Julian (1986), "Financial Crises in Eighteenth-century England," *Economic History Review* 39, 39-58.
- Horsefield, J. K. (1952), "British Banking Practices, 1750-1850," *Economica*, New Series, Vol. 19, 308-321.
- Horsefield, J. K. (1944), "The Origins of the Bank Charter Act, 1844," *Economica*, New Series, Vol. 11, 180-189.
- Hughes, John (1906), Liverpool Banks and Bankers, 1760-1837 (Henry Young & Sons: London).
- Hyde, Francis, Bradbury Parkinson, and Sheila Marriner (1951), "The Port of Liverpool and the Crisis of 1793," *Economica*, New Series, Vol. 18, 363-378.
- James, John A. (2012), "Panics, Payments Disruptions and the Bank of England before 1826," *Financial History Review* 19, 289-309.
- Jenks, Edward (1893), "On the Early History of Negotiable Instruments," *Law Quarterly Review* 9, 70-85.
- Kerridge, Eric (1988), Trade and Banking in Early Modern England (Manchester University Press).
- King, W. T. C. (2016), History of the London Discount Market (Routledge reprint of 1936 original).
- Lisle-Williams, Michael (1984), "Merchant Banking Dynasties in the English Class Structure: Ownership, Solidarity and Kinship in the City of London," *The British Journal of Sociology*, 35, 333-362.
- MacDonald, Peppy (2017), "Rural Settlement Change in East Suffolk, 1850-1939", PhD Thesis, University of East Anglia.

- Maixé-Altés, J. Carles and Emma M. Igliesias (2009), "Domestic Monetary Transfers and the Inland Bill of Exchange Markets in Spain (1775-1885)," *Journal of International Money and Finance* 28, 496-521.
- Mill, John Stuart (1920), Principles of Political Economy, edited by W. J. Ashley (Longmans, Green and Co: New York).
- Moss, David J. (1992), "The Bank of England and the Establishment of a Branch System, 1826-1829," *Canadian Journal of History* 27, 47-65.
- Moss, David J. (1981), "The Bank of England and the Country Banks: Birmingham, 1827-33," *Economic History Review*, new series, vol. 34, 540-553.
- Nishimura, Shizuya (2010), The Decline of Inland Bills of Exchange in the London Money Market 1855-1913 (Cambridge University Press).
- Parker, R.H. (1990), "Regulating British Corporate Financial Reporting in the Late Nineteenth Century," *Accounting, Business and Financial History* 1, 51-71.
- Popp, Andrew (2007), "Building the Market: John Shaw of Wolverhampton and Commercial Travelling in Early Nineteenth-Century England," *Business History* 49, 321-347.
- Pressnell, L. S. (1969), "Money, Finance, and Industrialization," *Business History* 11, 128-133.
- Pressnell, L. S. (1956), Country Banking in the Industrial Revolution (Clarendon Press: Oxford).
- Richards, R. D. (1927), "The Evolution of Paper Money in England," *Quarterly Journal of Economics* 41, 361-404.
- Roberts, R. O. (1958), "Bank of England Branch Discounting, 1826-59," *Economica* 25, 230-245.
- Rogers, James Steven (1995), The Early History of the Law of Bills and Notes (Cambridge University Press).
- Rorimer, James (1960), "The Kress Galleries of French Decorative Arts," *The Metropolitan Museum of Art Bulletin* 18, p. 273.
- Sanderson, Michael (1972), "Literacy and Social Mobility in the Industrial Revolution in England," *Past & Present* 56, 75-104.
- Santarosa, Veronica (2015), "Financing Long-Distance Trade: The Joint Liability Rule and Bills of Exchange in 18th-century France," *Journal of Economic History* 75, 690-719.
- Trinder, Barrie (1973), The Industrial Revolution in Shropshire (Phillimore; London).
- Von Mises, Ludwig (1953), The Theory of Money and Credit (Yale University Press: New Haven).

Wadsworth, Alfred and Julia Mann (1968), The Cotton Trade and Industrial Lancaster, 160-1780 (Augustus M. Kelley; New York).

Wicksell, Knut (1936), Interest and Prices (Macmillan: London).

Willan, T. S. (1970), An Eighteenth-Century Shopkeeper: Abraham Dent of Kirkby Stephen (August M. Kelley; New York).

Winstanley, Michael (2004), "Agriculture and Rural Society," Chapter 12 in A Companion to Nineteenth Century Britain, edited by Chris Williams (Blackwell Publishing), 205-233.

Xu, Chenzi and He Yang (2018), "National Banks and the Local Economy," Harvard working paper.