Retrospectives
Regulating Banks versus Managing Liquidity: Jeremy Bentham and Henry Thornton in 1802
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Introduction

Great Britain’s system of banking and finance was under duress in the 1790s. Revolutionary France declared war with Britain on February 1, 1793, setting in motion a dramatic credit crunch and wave of country bank failures (as detailed in Montefiore 1803). Napoleon Bonaparte had not yet gained political leadership (1799) or become Emperor of France (1804), but as a brigadier general he was leading the French army through victorious battles in Sardinia and what is now northern Italy, and then later on a campaign to Egypt. Meanwhile, Britain was part of coalitions that provided financial and diplomatic support to continental allies fighting against France. Britain’s Royal Navy was also involved as in its victories over the French fleet in the Battles of the Nile in 1798 and Trafalgar in 1805.

The Bank of England had become the heart of British finance and had absorbed functions usually associated with a Treasury or Exchequer: for example, it collected taxes, met the government’s short-term obligations (Navy and Treasury...
bills), and paid interest on the public debt. British government borrowing placed tremendous strain on the financial market, and there was a widespread belief that the government prioritized the Bank’s contribution to war finance above other monetary policy goals.

In 1797, there was the near-farcical Battle of Fishguard, which remains the most recent episode in which ground troops from Europe invaded Britain. Most of the French army under Napoleon was fighting in central Europe, but the French government emptied some jails and cobbled together 1,400 men whose windblown ship eventually landed them on a beach in Wales. After two days of looting and drunkenness, the invading force surrendered. But when the news of the invasion spread, there was a run by people seeking to convert currency into gold. The British Parliament responded by suspending gold convertibility—the first time Great Britain had done so. As Bordo and White (1991) observe, Britain’s financial credibility allowed it to suspend the gold standard while maintaining a strong market for its debt.

While Britain struggled against Revolutionary France, an equally profound revolution was transforming Britain into the world’s very first industrial nation. Debate continues to rage over whether military and financial mobilization speeded or slowed industrial transformation, though there is no doubt that it stripped France of her remaining colonies and conclusively demonstrated that Britannia ruled the waves. Contemporaries worried about maintaining financial confidence as Britain’s public debt rose (in retrospect to 2.7 times national income) while at the same time industrial expansion relied upon financial innovations that endogenously created money. For example, Jeremy Bentham feared that without bank regulation a “universal bankruptcy” was in the making while Henry Thornton felt that only adroit action by policy makers could avert a “universal failure.” In many ways the contrast between their perspectives and recommendations remains with us today, as Bentham urged the regulatory prevention of crisis while Thornton emphasized discretionary policy response.

Henry Thornton was a prominent banker and Member of Parliament. His 1802 essay, An Enquiry into the Nature and Effects of the Paper Credit of Great Britain, is widely hailed for forcefully arguing that the Bank of England should act as the lender of last resort (for examples, Hicks 1967; Thornton and Hayek [1802] 1939; Woodford 2006). Moreover, Thornton argued that the central bank should take on the responsibility of conducting monetary policy—by which he meant managing to assure sufficient liquidity in the London money market. In contrast, the utilitarian philosopher Jeremy Bentham formulated a remarkably prescient argument for comprehensive bank regulation in an 1801 essay called The True Alarm, which...

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¹ Crowding out of private capital formation by state spending in Great Britain during this time period has been emphasized by an eminent line of historians from Ashton (1959) to Williamson (1984). O’Brien and co-authors (O’Brien and Escosura 1998; O’Brien 2006; O’Brien 2011) find an array of benefits (like demand stimulus and financial development) that may have outweighed costs, while Ventura and Voth (2015) argue that higher interest rates actually spurred industrial transformation by reducing investment in low-productivity agriculture.
included proposals for the establishment and policing of a capital adequacy standard.

Both authors were extremely independent thinkers and we can learn a good deal by reading one against the other. The choice between their approaches continues to generate controversy today. For example, in the aftermath of the Great Recession of 2007–09 when the Federal Reserve and central banks around the world acted as lenders of last resort to major financial institutions, there was an ongoing dispute over whether appropriate banking regulation including higher capital standards could reduce or eliminate the need for such actions in the future. As Swagel (2015) argued in this journal, both international banking standards like the Basel III accords and recent national-level reforms have done much to stabilize the financial system. The existing regulations seek to address both capital and liquidity concerns regarding banks and other systemically important financial institutions with interrelated regulatory ratios on capital, risk coverage, liquidity, stable funding, operational risk, and “total loss absorbing capacity.” But despite the shifts in regulations, the coronavirus recession in early 2020 again led central banks to announce plans to act as providers of liquidity and lenders, as well as dealers, of last resort.

In this essay, we start by fleshing out how Britain’s financial markets and banking sector were operating in the 1790s, a time of rapidly evolving financial structure repeatedly subject to violent political shocks. We offer a brief overview of Bentham’s monetary economics before focusing on his bank regulatory proposal in which he warns of inflation and a looming “universal bankruptcy.” We then turn to Thornton’s explanation of just how dangerous a collapse of London’s money market would be and how liquidity management could avoid it. The final section considers lessons that can be drawn from their contrasting their approaches.

War, Finance, and Innovation

London and the Bank of England formed the center of Britain’s financial system, as well as the central node in the international financial network. Bank of England notes were generally restricted to London, where the Bank had a monopoly on their issue. Limited liability companies were rare in Britain, as each needed an act of Parliament. The Bank of England was the only note-issuing English bank that enjoyed a large capital base; other note-issuing English banks were limited to six partners (with unlimited liability), though Scotland had several large banks. As a private bank, the

2 Works by Bentham, Thornton, and Ricardo will be cited in this essay using compact citations to refer to the appropriate collected works: CW = The Works of Jeremy Bentham, published from 1838–1843 under the Superintendence of his Executor, John Bowring; EW = Jeremy Bentham’s Economic Writings, critical edition based on his printed works and unprinted manuscripts, edited by Werner Stark and published in 1952; PC = Henry Thornton, An Enquiry into the Nature and Effects of the Paper Credit of Great Britain, with additional writings, edited and with an Introduction by F.A. Hayek, published in 1939; RWC = The Works and Correspondence of David Ricardo, Edited by Piero Sraffa with the Collaboration of M. H. Dobb, published in 1951.
Bank of England chose its own leadership and paid (rather high) dividends, lending larger sums to the government each time its charter was renewed. It also paid all short-term government debts (especially Exchequer bills, which would later simply be called Treasury bills) when they came due, regardless of the issuance. A sudden surge here could lead the Bank of England to restrict private credit.

London banks settled transactions in Bank of England notes and looked to the Bank of England as a source of liquidity. “West End” London banks had an aristocratic clientele, while “City Banks” such as Thornton’s, were agents for “country” banks. Ashton (1945) distinguishes genuinely rural country banks, which tended to issue locally circulating banknotes, from what were also called country banks in places like Lancashire, the hotbed of the Industrial Revolution. In Lancashire, the circulating medium consisted of bills of exchange, a legally binding promise by one party to make a payment to another party at a certain date, usually no more than a month or two in the future. In Britain, the bill of exchange had undergone a transformation not witnessed in France that rendered it “highly responsive to the community’s demand for money, both for transactions and speculative purposes” (Anderson 1970; see also Neal 1994). The bills passed with high velocity from trader to trader, with each party endorsing it to the next, putting their wealth at risk if the borrower failed. Bills commanded greater confidence as the endorsers grew in number and solidity. Bills written for round sums and with solid endorsers circulated with the greatest velocity (Gorton 2020). Merchants with banking connections in London might specialize in discounting bills, which means buying them at less than their terminal (face) value. These banks, or bill dealers, sent some of these bills to London correspondent banks, such as Glyn Mills, for rediscounting. This intermediating tier of London banks held the principal reserves of the country banks and connected borrowers and lenders of loanable funds throughout Britain with the international capital market. The Bank of England routinely rediscounted bills, providing Bank of England notes in their place.

A critical complicating factor here was Britain’s anti-usury law, the Statute of Anne, passed in 1713, which limited the nominal interest rate to 5 percent. When the market interest rate rose above 5 percent, the Bank of England became a low-cost source of credit and many packets of bills of exchange would be presented at its discount window. The Bank of England often felt that it needed to ration its discounts, but it might discount freely to allay a panic.③ Thornton sympathized with the Bank of England’s difficult position, noting that a sensitive approach was needed because excessive tightness in discounting would be counterproductive if it induced a panic.④ James (2012) observes that the United States and the United

③ Bignon, Flandreau, and Ugolini (2012) suggest that the Bank of England transitioned to free lending and extensive liquidity support against good collateral after 1847 (essentially, following Bagehot’s rule before Bagehot wrote it in 1873) while Anson, Bholat, et al. (2017) emphasize the continuation of rationing based on the nature of bills and the parties presenting them.

④ As we will discuss in the next section, Bentham publicly opposed the law in 1787. So did Thornton, who thought the law increased credit volatility—a view supported by modern writers like Ashton (1959) and Anderson (1970).
Kingdom both had financial systems with a center and a periphery, but the United States lacked a lender of last resort and used illiquid single-name promissory notes. The Bank of England certainly provided a centralized source of liquidity for Britain’s market for bills of exchange, but that does not mean that it simply “discounted freely at a penalty rate” as Bagehot (1873) would later describe the actions of a lender of last resort. In any case, James notes that while the United Kingdom experienced many financial crises, its payments system did not episodically freeze up as in the United States.

The growth of bills of exchange in Britain was “exceptionally rapid” in the 1790s (Neal 1994; Pressnell 1956). Moreover, bank owners were often unlimited liability partners in other firms as well as their bank, raising the possibility that a banker’s assets might be implicitly pledged to support more than one firm. At this time, for example, the concept of firewalls between separately capitalized subsidiaries of bank holding companies did not exist. The Bank of England’s (2020) historical spreadsheet pulls together centuries of macroeconomic and financial data (including that of Broadberry et al. 2015). Using it, we can view the period in which Bentham and Thornton wrote their treatises with modern eyes and the most recently reconstructed data. From 1790 to 1800, real GDP for Great Britain rose by 21.1 percent or at an annual rate of 1.9 percent. The distribution of growth across sectors was varied as agriculture grew only 3.2 percent over the decade, while industry (32.6 percent growth) and services (27.7 percent growth) grew more rapidly. In addition, Broadberry et al. (2015) report implicit price deflators for total GDP as well as for the three sectors. For the 1790–1800 period, the overall price level grew by 48.8 percent or 4.1 percent at an annual rate. Agricultural prices grew the fastest over the decade at 81.7 percent, but industry prices at 34.7 percent and prices for services at 36.7 percent grew as well. Perhaps not surprisingly after the suspension of the gold standard in February 1797, price rises started to accelerate, with the GDP deflator rising by 2.6 percent in 1798, 6.9 percent in 1799, and 11.3 percent in 1800. During these years, the Bank of England expanded its credit to the private sector, while maintaining its holdings of government debt at a relatively constant level (Antipa and Chamley 2017). This is the context during which Bentham’s and Thornton’s treatises were being written.

**Bentham: The True Alarm**

Bentham’s first intervention on economic topics was a public appeal to Adam Smith to reverse his support of the usury laws (discussed in this journal by Persky 2007; also, see Hollander 1999). Bentham argued that the law shifted income from savers to borrowers and lowered capital accumulation. Moreover, he argued that usury laws tended to privilege “old established trades” over “projectors,” defined as anyone who seeks to “strike into any channel of invention” or “aim at anything that can be called improvement” (EW I 170, 1787). Bentham subsequently penned a large number of proposals and manuscripts on monetary topics. However, he often
moved quickly from one unfinished work to the next, leaving his devoted editor Étienne Dumont to bring order to the material, much of which remained unpublished for a long time. Bentham implausibly maintained that British Prime Minister William Pitt the Younger only failed to adopt his proposals because Pitt had once acted ungracefully to Bentham after losing a game of chess (EW I 38-9).

In the 1790s, Bentham felt that an increase in paper money could increase the capital stock and output. But by 1801, Bentham had abandoned monetary expansion and was warning that excessive credit creation was leading toward “the greatest of all possible evils, universal bankruptcy: a catastrophe the date of which it is impossible to calculate with precision, but the certitude of which, if no measures are taken to prevent it, can be demonstrated.” In comparison to this looming credit crisis, he wrote, “all other questions of political economy have but little importance” (The True Alarm, EW III 66). The experience of the 1790s had led him to conclude that inflation invariably accompanied—and was a reliable indicator of—systemic risk.

From a modern perspective, Bentham’s diagnosis of the reasons behind the bursts of inflation and financial instability of the 1790s seem off-kilter. But more to his credit, he argued that private bankers do not factor into their behavior what we now refer to as “systemic risk”—that is, the risk that their actions will contribute to an overall financial crisis. As a result, Bentham made the case for what we would now call “microprudential” banking regulation, which refers to the idea that if each bank were required to operate in ways that limit risk for that institution, like holding a capital buffer, then systemic risk would be reduced.

Bentham’s diagnosis of inflation and financial instability emphasized behavior by provincial banks rather than action of the Bank of England. He (falsely) believed that only additional banknotes could generate inflation, and thus does not focus directly on the dramatic expansion of bills of exchange in the hands of private bankers in the 1790s. While notes issued by the Bank of England are important components of provincial banks’ reserves, Bentham suggests that the provincial banks also held each other’s banknotes as reserves. The alarming consequence, he argues, is that the provincial banks are able to expand credit quite independently of the Bank of England. Bentham clearly believes that a reduction in the Bank of England’s note issue will not necessarily reduce the volume of provincial notes and lending, and it might even increase it: “If the Bank of England reduced its paper with this motive, would this help to restrain the provincial banks? The abandonment of this profit would be of use only to their rivals . . .” (EW III 189).

See Bentham’s Annuity Notes plan which Werner Stark dates to 1795–96 (EW II 286). See also Guidi’s (2010) account of Bentham’s changing assessment of the French Revolution.

Deleplace and Sigot (2011) have shed considerable light on Bentham’s approach to banks and money by contrasting it with Ricardo’s. When Ricardo was asked by Dumont (Bentham’s devoted editor) whether The True Alarm should be published, Ricardo opposed publication. For Ricardo, there was no country bank problem: indeed, Ricardo found the autonomy and independence Bentham attributed to country banks quite incomprehensible (RWC III 166-7). In Ricardo’s view, the problem lay with the Bank of England and returning to the gold standard. On Ricardo’s nuanced support for the gold standard, see Marcuzzo and Rosselli (1994) and Deleplace (2004).
In Bentham’s view, “excessive issue” of money is a situation in which the “evils” of inflation and rising bankruptcy risk outweigh the benefits of greater commercial credit. Bentham assumed that provincial banks invariably provided commercial credit (by purchasing bills of exchange at a discounted rate) when they increased their issue of banknotes. The public’s propensity to receive and spend the provincial banknotes, rather than return them to the issuing bank, generates what Bentham terms an “air bubble.” There is explicit reference to John Law’s Mississippi scheme, the world’s first international financial bubble that burst in 1720 (EW III 158).

According to Bentham, the rate of commercial profit was usually 15 percent while usury laws capped the interest rate banks could charge at 5 percent—and so the demand for paper-creating loans was tremendously strong (EW III 210). Bentham also urged the legislature to begin computing and monitoring the average price level.

Bentham contrasts the “immediate” interest of individual bankers with the “public interest.” By making a loan (and issuing more banknotes), a banker increases the risk that the public will experience a catastrophic credit crisis (EW III 189, the editor’s uncertain reading of Bentham’s handwriting is indicated by [?]):

Without the intervention of Parliament, individual interest is as favorable to the excess as it can be. Each banker draws [?] his profit in proportion to what he contributes to the excess; in restraining himself he sacrifices all that he could have gained, and what he adds thereby to his own security is almost nothing, as long as he may be engulfed in the catastrophe brought about by the temerity of others.

Bentham appeals to the legislature for regulations, rather than to the executive, because he supposes that Britain’s “Minister of Finance” welcomes any increase in output generated by money, even if inflation harms the majority of the population. The balance of political forces does not give Bentham great hope, but it does leave him in no doubt as to where the public interest lies: “it is evident enough that the loss is for the greater part of the community, and the profit for a very small number” (EW III 215, emphasis in original).

In setting out his “definitive remedies,” Bentham emphasizes the fragility of confidence: ill-considered regulatory changes may set off a bank run. For instance, a precipitate banning of small-denomination notes from country banks would lead to a sudden increase in demand for metallic currency; this might have the “appearance” and hence the same consequence as a bank run (EW III 106). Bentham suggests 15 distinct articles, to be enacted in two separate pieces of legislation.

The first act would require the registration of banks and would limit creation of banknotes. Each bank would require a bank charter, which Bentham calls a “patent.” He writes: “No patent giving the right to issue bank notes shall be delivered before the banker has furnished security either with or without a pledge, in a certain proportion to the greatest sum of paper money which he is entitled to keep in circulation at any one time” (EW III 175). This legislation would require each
banker to report annually the “average amount of his notes in circulation and the average size of the security fund which he keeps in reserve” (EW III 176). Bentham does not suggest imposing a required reserve ratio; he takes it for granted that fractional reserves are incompatible with what he calls a guarantee of “immediate and uninterrupted solvability.” He focuses instead on capital and bankruptcy.

Unfortunately, Bentham’s language turns semantically confusing in a key passage. He suddenly mentions a “pecuniary security fund,” which might sound like cash reserves but seems intended to mean something more like bank capital (EW III 177-8):

As for the pecuniary security fund required of each banker, its purpose concerns their final solvability: for we have often repeated that immediate and uninterrupted solvability at every juncture is irreconcilable with the very essence of the banking trade. It is enough to be assured that the value of the pledge is such that the bankers would be able, in the last resort, to meet their engagements. Houses and landed estates which could not contribute to immediate solvability may serve as a guarantee for final solvability.

“Immediate” and “final solvability” correspond to the topics that modern economists discuss as liquidity versus solvency. Bankers in the 1790s often owned manufacturing firms, or were involved in trade (EW III 153). Thus, bankers’ assets could be pledges as backing for several enterprises. Thus, Bentham wants specific assets identified as bank capital, enough to cover the notes issued by the bank. Bentham insists that the bank capital be reviewed annually (EW III 175). The intention seems to be that in bankruptcy, the pledged assets could be sold, even if slowly. However, one would not today suggest that bank capital consists of an illiquid asset like real estate. Despite these difficulties, Bentham clearly distinguishes “final solvability” from “immediate and uninterrupted solvability.” While modern economists have learned that distinguishing liquidity and solvency in the midst of a financial crisis is not easy, Bentham hoped to stave off financial panic and “universal bankruptcy” by creating greater confidence in the “final solvability” of banks in bankruptcy. This approach clearly reflects his lifelong interest in legal reform, and in the corruption and inefficiency of the bankruptcy proceedings of the time (Duffy 1980).

A second essential component of Bentham’s proposal is contained in the bank “patents” (or charters). Each will specify “the greatest sum of paper money which he [the banker] is entitled to keep in circulation at any one time.” Bentham fixes the number of bank charters and foresees them becoming more valuable over time, with the increasing value of a banking franchise compensating bankers for the regulatory burden they face. “Vacant” bank patents would be auctioned. Bentham clearly recognizes that capital requirements and regulatory supervision will reduce the competitiveness of the market—an outcome recently emphasized by Schliephake and Kirstein (2013). But Bentham had a penchant for compensating a branch of commerce for the imposition of a tax by limiting entry.
Indeed having put an inflexible ceiling on the paper money emitted by the provincial banks, Bentham goes so far as to wonder whether steps might be needed to limit the metallic money supply (EW III 178):

If, after having put an end to the encrease [sic] of paper money, money in general still continued to multiply, from the augmentation of metallic money, to the point of producing a sensible rise in prices, it would be necessary to take measures to limit the augmentation of metallic money to the degree required for the end in view.

Bentham turned away from financial topics after 1801; consequently, this essay appears to constitute his final position on credit creation. His detailed regulatory program insightfully aims to prevent the buildup of systemic risk due to misaligned incentives. Perhaps if he had the price data he desired, he might not have regarded inflation as an unerring indicator of excessive credit and money creation. But he did hold this view, which led him to the strictest possible monetary rule, that the supply of money and credit should be consistent with the growth of potential GDP and stable prices.

Thornton: Paper Credit

Henry Thornton’s star has steadily risen since the publication of Hayek’s edition of Paper Credit in 1939. The first half of his 1802 work emphasizes the need to prevent contractions in the “circulating medium,” while in the second half he warns against an excessive increase in Bank of England notes. Chapter VII on “Country Banks—their Advantages and Disadvantages” is crucial to Thornton’s transition between these two sections. It is also the most obvious point of comparison to The True Alarm. Bentham had tremendous sympathy for Thornton’s analysis in Paper Credit, declaring to Dumont: “This is a book of real merit.” While Bentham quickly saw that they disagreed on the need to control banknotes issued by provincial banks, he felt that “a controversy with him would be really instructive” (EW III 46).

Thornton sets out with a rough count of the number of country banks, documenting their rapid growth in the peaceful interlude between the end of American War in October 1781 and the beginning of the war with France in 1793. Since the onset of war with France, he thinks the number has been stable. Thornton also values the increase in Britain’s capital stock that the country banks supported through business loans. Thornton’s defense of the Bank of England’s management is legendary, but his defense of country bankers is no less impressive. They “take care to lend the sums which have been deposited in their hands, not to the imprudent speculator . . . but to those who . . . manage their concerns with prudence, [and] give proof that they are likely to repay the loan” (PC 175). Indeed the growth of country bankers has made the evaluation of creditworthiness into a “science” that has greatly contributed to British commerce (PC 176). Country bankers have
important informational advantages when they assess credit because “the bill trans-
actions of the neighborhood pass under his view: the knowledge, thus obtained, aids his judgment; and confidence may, therefore, be measured out by him more nearly than by another person” (PC 175).

In the banking system of that time, country banks received loans from London banks, and London banks received loans from the Bank of England. In Thornton’s view, the Bank of England’s discretion in discounting bills of exchange crowns and stabilizes this prudential hierarchy of credit. Thornton was concerned with the possibility of a “universal failure,” but for Thornton this denouement will almost certainly be the result of poor decisions made at the apex of the credit hierarchy rather than at its base. Everything hinges on whether the Bank of England allows the volume of its bank notes outstanding to fall, he argued, because those notes form the means of payment within the London money market. The significance of a liquidity panic in the countryside, such as that which accompanied the outbreak of war in 1793 or the invasion threat of 1797, lies with its effects in London. As trust in country banknotes evaporates, they are replaced by Bank of England banknotes—which are normally confined to circulating in London. “Pressure” builds as the Bank of England notes, which serve as reserves and clearing balances in London, fall relative to large financial transactions.

Thornton suggests that the illiquidity of one important actor could set off a general “alarm” or panic. Because London has become the “general money market” of the country, the danger that a large bank will trigger a cascading payment crisis rises with “pressure”: “Some political persons have assumed it to be a principle, that in proportion as the gold of the bank lessens, its paper, or, as is sometimes said, its loans . . . ought to be reduced . . . [a] maxim of this sort . . . would lead to universal failure” (PC 227). Thornton depicted the danger of excessive pressure in London’s payments system in alarming terms (PC 114):

A deficiency of notes in London is a very different thing from a deficiency either of country bank notes or of coin in the country. A large proportion of the London payments are payments of bills accepted by considerable houses, and a failure in the punctuality of any one such payment is deemed an act of insolvency in the party . . . any very great and sudden diminution of Bank of England notes would be attended with the most serious effects both on the metropolis and on the whole kingdom. A reduction of them which may seem moderate to men who have not reflected on this subject—a diminution, for instance, of one-third or two-fifths, might, perhaps, be sufficient to produce a very general insolvency in London, of which the effect would be the

7 Thornton (PC 210) was on exactly the same wavelength as Ricardo’s position discussed in the previous footnote when he asserts: “[I]t has been shewn, that the country paper, however it may fail to be limited in quantity by any moderation or prudence of the issuers, becomes no less effectually limited through the circumstance of their being compelled by the holders to exchange as much of it as is excessive for the London paper which is limited; which is limited, I mean, in consequence of a principle of limitation which the directors of the Bank of England have prescribed to themselves.”
Thornton reassures us that usually “steps would be taken” to avert a “general insolvency” of this magnitude: “[T]here is too strong and evident an interest in every quarter to maintain, in some way or other, the regular course of London payments, to make it probable that this scene of confusion should occur; or, even if it should arise, that it should continue” (PC 155). The government’s solution to the 1793 panic, for instance, seemed to have worked well: an emergency loan of up to five million pounds of highly liquid bills issued by the Exchequer to “as many mercantile persons, giving proper security, as should apply” restored the “regularity of payment” to the London money market (PC 98-9; for details see Andréadès 1909). This looks very much like an early instance of the Treasury stepping in to supplement, or substitute for, central bank action. Thornton is willing to “hazard” the observation that the Bank should have increased its note issue prior to the “alarm” of 1793 (PC 128). In Andréadès’s (1909) telling, the Bank’s crude credit rationing rightfully panicked the London market.

Why would the Bank of England allow “pressure” in the money market to develop into “universal failure”? In the second half of his book, Thornton “moves his guns to the other side of the ship,” as Hicks (1967) put it (see also Skaggs 2005). We begin to see why Thornton favored a return to the gold standard. Here he emphasizes the need for restraint on the part of the Bank of England, so that its issue of banknotes “vibrates” between an upper and a lower bound. These bounds should cautiously increase over time (PC 259). Limitation of notes requires “some effectual principle of restriction” on discounts when buying bills of exchange. Infamously, the Bank imposed a daily limit on the amount of credit it would extend to the private sector. Thornton is careful not to sound an overly alarmist note, but as the Bank rations credit more tightly, the “pressure” and difficulty of maintaining “regularity of payments” in the capital’s money market builds dangerously. Thornton was worried that back on the gold standard, the British government might not see that its long-run aims (such as a stable money supply, gold convertibility, or international payments stability) were best served by periodic departures from the gold standard, followed by a gradual and opportunistic return to that long-run benchmark.

Later writers have argued that the Bank of England and other central banks of the time often rationed credit. Flandreau and Ugolini (2013) note that in 1825 “rampant credit rationing by the Bank of England made major London banks—which were heavily invested in bills—experience a serious maturity mismatch, which forced them to suspend payments.” A confluence of the type Thornton feared, leading to credit rationing, appears to have occurred in 1847 (Dornbusch and Frenkel 1984). According to Bignon, Flandreau, and Ugolini (2012), “there was an evolution in the way central banks dealt with crises, from a policy of universal credit rationing before 1850, to a policy that strongly supported the market by providing unlimited loans, or at least much more generous ones.” Once Britain returned to gold, it would still face financial crises. Thornton worried that the government
would prioritize maintenance of the gold standard over maintenance of commercial credit, if a domestic credit crisis coincided with an outflow of gold due to capital flight.

Common Shocks, Disparate Responses

The financial crises and inflations of the 1790s caused Jeremy Bentham and Henry Thornton to advocate very different approaches toward stabilizing the banking system. For present purposes, the clearest contrast between these authors lies with the preeminence of liquidity in Thornton’s *Paper Credit* as opposed to the role of bank capital in Bentham’s *True Alarm*. Thornton admitted that his own bank had held far too little capital as it entered the crisis of 1793, and that “country bankers should be taught . . . to provide themselves with a larger quantity of that sort of property which is quickly convertible into Bank of England notes . . .” (PC 188). Yet in *Paper Credit*, Thornton’s spotlight is almost always on liquidity. Bentham never seriously considered liquidity, only “final solvability.”

Thornton had a more subtle and informed understanding of the British financial system than Bentham, in part because his own bank occupied an important place in the middle of Britain’s credit pyramid. He must have acquired considerable insight into the workings of country banks from his own country bank clientele, while his brother Samuel (who was a Governor of the Bank of England in 1799 and 1801) provided an intimate view into the apex of the system. Indeed, the skill and tact with which Henry Thornton defends the Bank of England has often led readers to mistake him for the Thornton who was a Governor at the Bank. Nevertheless, Thornton’s deepest sympathies clearly lie with his fellow bankers in London, who were “pressured” by liquidity panics, contractionary monetary policy, and capital flight. No matter where the pressure originated, it expressed itself in the “general money market.” The Bank of England needed to manage this pressure, and if necessary, be aided by loans of government securities to merchants. No matter what the challenge might be, Thornton’s solution lies with these actors at the center and not with the merchants and country banks at the periphery of the system. However, he was willing to concede that the Bank of England cannot relieve “every distress which the rashness of country banks may bring upon them: the bank, by doing this, might encourage their improvidence” (PC 188).

Although there is a superficial similarity between Bentham’s concern over “universal bankruptcy” and Thornton’s “general failure of commercial credit,” the two authors are not referring to the same kind of disaster. Bentham’s *True Alarm* does

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8 Of course, modern versions of the arguments about the benefits and costs of raising bank capital requirement continue to the present. For example, Admati and Hellwig (2013) advocate greater bank capital (see also Admati et al. 2011). In response, Dewatripont and Tirole (2012) emphasize the cost of additional capital and the alternatives to it—such as contingent convertible bonds and capital insurance. King (2019) alternatively suggests that banks should continually post collateral with their central banks (at predetermined haircuts) sufficient to cover all runnable deposits.
not consider the notion that liquidity provision at the center could either generate or alleviate a collapse of the nation’s credit system. This reflects his underappreciation of the interconnections between banks and the market for government debt, and his failure to see how successfully the Bank of England had managed an unprecedentedly large government deficit and debt. Despite these limitations, there can be no doubt that Bentham’s advocacy of capital requirements was far ahead of its time, as was his desire to establish a public regulatory agency that would verify bank balance sheets and income statements annually. It is a pity that Bentham’s lawyerly attentiveness to bank capital and bankruptcy ended up taking so much longer to enter the mainstream of public discussion, compared with Thornton’s sensitive analysis of liquidity. As the better-informed observer of financial affairs, Thornton had the subtler approach. He appreciated the need for a lender of last resort and for flexibility and creativity in response to a crisis.

The main lesson we draw from this episode in the intellectual history of economics is that policymakers need to maintain a balance between prevention of financial crisis and response to that crisis. Bentham was right to insist that without preventive bank regulation, financial crises were inevitable. However, we cannot legislate away what Kane (1988) called the “regulatory dialectic” between regulation and financial industry behavior. If regulations are too binding and supervision not vigilant enough, then banks may find ways to circumvent those regulations in ways that increase systemic risk. A dogmatic reliance on regulations aimed at preventing a crisis could discourage the provision of emergency liquidity because the very possibility of rescue (or “bailout”) during a financial crisis may be seen as making such a crisis more likely through moral hazard incentives. Thus, we must hope both for robust Bentham-style regulatory mechanisms to prevent financial crises but also that such preventive mechanisms do not hobble our ability and willingness to offer a Thornton-style response when such crises occur.

We thank David Laidler, Ivo Maes, Joseph Persky, Tim Opiela, and participants of the 2012 and 2014 HES conferences for helpful criticism. Timothy Taylor provided extensive and welcome editorial interventions. We are grateful to all but retain responsibility for all errors and omissions.

References

Admati, Anat R., Peter M. DeMarzo, Martin F. Hellwig, and Paul C. Pfleiderer. 2011. “Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity Is Not Expensive.” MPI Collective Goods Preprint. (2015/23).
Admati, Anat, and Martin Hellwig. 2013. The Bankers’ New Clothes: What’s Wrong with Banking and What to Do About It. Princeton and Oxford: Princeton University Press.

Anderson, B.L. 1970. “Money and the Structure of Credit in the Eighteenth Century.” Business History 12 (2): 85–101.

Andréades, A. 1909. History of the Bank of England 1640-1903. London: P.S. King & Son.

Anson, Michael, David Bholat, Miao Kang, and Ryland Thomas. 2017. “The Bank of England as Lender of Last Resort: New Historical Evidence from Daily Transactional Data.” Bank of England Working Paper 691.

Antipa, Pamfili, and Christophe Chamley. 2017. “Monetary and Fiscal Policy in England During the French Wars (1793-1821).” Banque de France Working Paper 627.

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

Ashton, T.S. 1945. “The Bill of Exchange and Private Banks in Lancashire, 1790–1830.” Economic History Review 15 (1–2): 25–35.

Bagehot, Walter. 1873. Lombard Street: A Description of the Money Market. 3rd ed. London: Henry S. King & Co. https://oll.libertyfund.org/titles/128 (accessed June 14, 2020).

Bank of England. 2020. “The Bank of England’s Balance Sheet 1696-2019.” Bank of England Research Datasets. https://www.bankofengland.co.uk/statistics/research-datasets (accessed June 2, 2020).

Bentham, Jeremy. 1838–43. The Works of Jeremy Bentham, 11 vols, edited by John Bowring. Edinburgh: William Tait. 11 vols.

Bentham, Jeremy, and Werner Stark. 1952. Jeremy Bentham’s Economic Writings. London: George Allan and Unwin for the Royal Society.

Bignon, Vincent, Marc Flandreau, and Stefano Ugolini. 2012. “Bagehot for Beginners: The Making of Lender-of-Last-Resort Operations in the Mid-nineteenth Century.” Economic History Review 65 (2): 580–608.

Bordo, Michael D. and Eugene N. White. 1991. “A Tale of Two Currencies: British and French Finance During the Napoleonic Wars.” Journal of Economic History 51 (2): 303–16.

Broadberry, Stephen, Bruce M.S. Campbell, Alexander Klein, Mark Overton, and Bas van Leeuwen. 2015. British Economic Growth, 1270–1870. Cambridge, UK: Cambridge University Press

DelePLACE, Ghislain. 2004. “Monetary Stability and Heterodoxy: A History of Economic Thought Perspective.” In Money, Credit, and the Role of the State. Essays in Honour of Augusto Graziani, edited by Richard Arena and Neri Salvadori. Aldershot, UK: Ashgate.

DelePLACE, Ghislain, and Nathalie Sigot. 2011. “Ricardo’s Critique of Bentham’s French Manuscript: Secure Currency versus Secure Banks.” European Journal of the History of Economic Thought 19 (5): 733–64.

Dewatripont, Mathias, and Jean Tirole. 2012. “Macroeconomic Shocks and Banking Regulation.” Journal of Money, Credit and Banking 44 (S2): 237–54.

Dornbusch, Rudiger, and Jacob A. Frenkel. 1984. “The Gold Standard and the Bank of England in the Crisis of 1847.” In A Retrospective on the Classical Gold Standard, 1821–1931, edited by Michael D. Bordo and Anna J. Schwartz, 233–76. Chicago and London: University of Chicago Press.

Duffy, Ian F.H. 1980. “English Bankruptcies, 1571-1861.” American Journal of Legal History 24 (4): 283–305.

Flandreau, Marc and Stefano Ugolini. 2013. “Where It All Began: Lending of Last Resort Operations in the Mid-nineteenth Century.” Economic History Review 65 (2): 580–608.

Gorton, Gary B. 2020. “Private Money Production without Banks.” NBER Working Paper 26663.

Guidi, Marco E. L. 2010. “Jeremy Bentham, the French Revolution, and the Political Economy of Representation (1788 to 1789).” European Journal of the History of Economic Thought 17(4): 579–605.

Hicks, John R. 1967. “Thornton’s Paper Credit.” Critical Essays in Monetary Theory, 174–88. Oxford: Clarendon Press.

Hollander, Samuel. 1999. “Jeremy Bentham and Adam Smith on the Usury Laws: A ‘Smithian’ Reply to Bentham and a New Problem.” The European Journal of the History of Economic Thought 6 (4): 523–51.

James, John A. 2012. “Panics, Payments Disruptions and the Bank of England before 1826.” Financial History Review 19 (3): 289–309.

Kane, Edward J. 1988 “Interaction of Financial and Regulatory Innovation.” American Economic Review 78 (2): 328–34.

King, Mervyn. 2019. “Panel Remarks by Mervyn King on Ten Years after the Great Financial Crisis: What
Has Changed?" Bank for International Settlements Paper 103, 1–3
Marcuzzo, Maria Cristina, and Annalisa Rosselli. 1994. “Ricardo’s Theory of Money Matters.” Revue économique 45 (3): 1251–68.
Montefiore, Joshua. 1803. A Commercial Dictionary: Containing the Present State of Mercantile Law, Practice, and Custom: Intended for the Use of the Cabinet, the Counting-House, and the Library. London: Printed for the author. https://catalog.hathitrust.org/Record/009039058/Home. (accessed June 22, 2020).
Neal, Larry. 1994. “The Finance of Business During the Industrial Revolution.” In The Economic History of Britain since 1700, vol. 1. 2nd ed. Edited by Roderick Floud and Donald McCloskey, 151–81. Cambridge, UK: Cambridge University Press.
O’Brien, Patrick. 2006. “Mercantilist Institutions for the Pursuit of Power with Profit. The Management of Britain’s National Debt, 1756-1815.” Economic History Working Paper (95/06).
O’Brien, Patrick. 2011. “The Nature and Historical Evolution of an Exceptional Fiscal State and Its Possible Significance for the Precocious Commercialization and Industrialization of the British Economy from Cromwell to Nelson.” Economic History Review 64 (2): 408–46.
O’Brien, Patrick Karl, and Leandro Prados de la Escosura. 1998. “The Costs and Benefits for Europeans from Their Empires Overseas.” Revista de Historia Económica/Journal of Iberian and Latin American Economic History 16 (1): 29–89.
Persky, Joseph. 2007. “Retrospectives: From Usury to Interest.” Journal of Economic Perspectives 21 (1): 227–36.
Pressnell, Leslie Sedden. 1956. Country Banking in the Industrial Revolution. Oxford: Clarendon Press.
Ricardo, David. 1951. The Works and Correspondence of David Ricardo, edited by Piero Sraffa and M.H. Dobb. Cambridge, UK: Cambridge University Press for the Royal Society. 11 vols. https://oll.libertyfund.org/titles/ricardo-the-works-and-correspondence-of-david-ricardo-11-vols-sraffa-ed. (accessed June 22, 2020).
Schliephake, Eva, and Roland Kirstein. 2013. “Strategic Effects of Regulatory Capital Requirements in Imperfect Banking Competition.” Journal of Money, Credit and Banking 45 (4): 675–700.
Skaggs, Neil T. 2005. “Treating Schizophrenia: A Comment on Antoin Murphy’s Diagnosis of Henry Thornton’s Theoretical Condition.” European Journal of the History of Economic Thought 12 (2): 321–28.
Swagel, Phillip. 2015. “Legal, Political, and Institutional Constraints on the Financial Crisis Policy Response.” Journal of Economic Perspectives 29 (2): 107–22.
Thornton, Henry, and Friedrich August von Hayek. 1939. An Enquiry into the Nature and Effects of the Paper Credit of Great Britain. London: George Allen and Unwin. [1802]. http://oll.libertyfund.org/titles/2041. (accessed June 22, 2020.)
Ventura, Jaume, and Hans-Joachim Voth. 2015. “Debt into Growth: How Sovereign Debt Accelerated the First Industrial Revolution.” NBER Working Paper 21280.
Williamson, Jeffrey G. 1984. “Why Was British Growth So Slow during the Industrial Revolution?” Journal of Economic History September 44 (3): 687–712.
Woodford, Michael. 2006. “Comments on the Symposium on Interest and Prices.” Journal of the History of Economic Thought 28 (2): 187–98.