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REAPPRAISING LOCKE'S CASE AGAINST
"RAISING THE COIN"

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I. Introduction

During the Nine Years War (1689-97) with France, most of England's silver coin was rapidly dwindling in size from clipping.* At the outset of the war, the average bag of silver coin received in tax payments at the Exchequer was 16% short of its legal weight; by mid-1695 that figure had fallen to 50%. Starting in November 1694, amidst rumours Parliament would soon demonetize clipped silver, prices of the major monetary substitutes began rising. By June 1695 gold guinea coins had climbed to 30s. apiece, well above the normal market rate of 21s. 6d. Gold and silver bullion reached peaks of £5.42 and 6s. 5d. per ounce respectively, considerably higher than their customary market prices of £4.05 and 5s. 3d. or so. As the monetary turmoil slowed the flow of tax payments and loans into the Exchequer, by October 1695 the government had resolved upon a course of action. It would ask Parliament for a statute authorizing the Mint to melt down all substandard silver coins and restore them to full weight. The new coins would be manufactured with milled edges to make it easy to detect, and so put a stop to, clipping.

In a Report containing an essay for the amendment of the silver coins published in November 1695, William Lowndes (Secretary to the Treasury) proposed the recoinage be accompanied by a 25% increase in the official face value of silver coins. The crown coin, for instance, previously worth 5s., would henceforth carry an official rating of 6s. 3d. At the prompting of the Lord Keeper of the Great Seal (the highest judicial official in the land), John Locke replied with Further considerations concerning raising the value of money. He vigorously denounced Lowndes' proposal for "raising the coin", as contemporaries called it, and insisted upon retaining the existing Mint standard.

* I wish to thank Glenn Hueckel, Dwyryd Jones, Andrea Maneschi and Michael Rushton for their very helpful comments and advice on an earlier draft of this paper.

In the end Parliament approved a recoinage but sided with Locke against a simultaneous increase in the face values of English coin. Most modern commentators believe this was a mistake and are highly critical of Locke's position. This paper seeks to reverse the customary verdict. I will argue that while certainly defective in some respects, Further considerations offered a more penetrating and reliable analysis than the Report.

I begin in Section II by rejecting two common assumptions: a) that the Lowndes-Locke controversy was at base a debate on the merits of keeping to the existing monetary standard in the face of a prior inflation; and b) that increases in the price of silver bullion during the course of 1695 reflected a general price inflation. Having thus cleared the ground for a fresh look at the original documents, I argue in Sections III and IV that on the level of theory Lowndes' exposition was very weak and Locke's more or less on the correct track. In Section V I turn to the political dimensions of the debate. I conclude that Lowndes' Report was probably not a statement of his own views but rather a position paper for the Treasury, issued with strategic intent. Locke's analysis was superior because he could afford an honest assessment while Lowndes was constrained by the politics of the situation and a concern to improve the Treasury's prospects for revenue collection and new short-term borrowing.

II. The non-issue of inflation

Twentieth-century commentators on the Lowndes-Locke controversy instinctively construe it as the first of a long series of British debates (the key years being 1819, 1844, 1925, 1949 and 1967, with 1931 a related but special case) about whether to maintain the established gold value of the pound in the face of a prior inflation.¹ So they typically recite statistics indicating that the general

¹ Many studies of the debate appeared in close proximity to one or another of these key years: Hawtrey 1927 (first published in 1919, when a change in the official value of the pound was a serious possibility), Feavearyear 1967 (first published in 1931), Fay 1932-34, Horsefield 1960, and Li 1963 (reworked from a 1940 doctoral dissertation).

price level was rising from mid-1694 to mid-1696 and tend to regard the rising price of silver bullion as a simple corollary of this trend. Many suppose that in advising the coin be raised, Lowndes was simply accepting the inflation and hoping to spare the country the economic pain that would come from trying to reverse it. Most argue that in advising the Mint standard be left as it was, Locke doomed England to having to roll back the preceding inflation. The sharp economic contraction of summer 1696 is regarded as empirical confirmation of his error in theory (Challis 1992, 397; Eltis 1995, 18-19, 24; Fay 1932-34, 150; Feavearyear 1963, 147; Hawtrey 1927, 294, 296; Horsefield 1960, 24; Schumpeter 1954, 299; Vickers 1959, 70-71).

This line of interpretation is certainly understandable; it is an implicit complaint against the intellectual rigidity of later generations of monetary authorities. But it makes the Lowndes-Locke controversy into something it wasn't at the time. As I show below, Lowndes never rested his case on the premise of a prior inflation and he actively denied that changes in the money supply would affect the general price level. It is true that Locke made no mention of the probable deflationary consequences of keeping to the existing Mint standard. But in this he was no different from the rest of his contemporaries. After a comprehensive survey of the recoinage pamphlet literature, Horsefield complains that "scarcely anyone writing in the 1690s attempted the necessary calculations to see what the effect [of a recoinage, with or without an increase in face values] on domestic commodity prices might be". Most assumed that "there would be neither an inflation nor a deflation" (Horsefield 1960, 30, 36). Of course this doesn't necessarily absolve Locke of blame. But it does mean the recoinage debate wasn't an early version of the twentieth-century battle over the effect on real GDP of maintaining the present official value of the pound in the face of ongoing inflation.

There would not have been a compelling reason in any case for contemporaries to think an inflation underway at the time. Most recent studies rely upon a single price index assembled by Horsefield from weekly reports in one London newspaper. The index is an un-weighted average

of 22 non-agricultural commodities, using as a base the average price level in 1695.² It hovers near 101 in early 1694, fluctuates in a narrow band around 97 from April 1694 to July 1695, jumps to 102 in August, rises more or less steadily thereafter to a peak of 113.8 in April 1696, drops sharply back to 104 in June and then holds steady near 102 for the rest of the year (Horsefield 1960, 252). From the same newspaper Li derives a price index for 12 key agricultural products, which I have adjusted to conform with Horsefield's base year of 1695. It stands near 115 for most of 1694, falls steadily after that year's harvest, reaches a low of 93.0 in June and July 1695, and then climbs steadily to a peak of 124.9 in May 1696 before falling back gradually to 110.2 by the end of the year (Li 1963, 9). In September 1695, when Lowndes actually wrote his Report, the two indices stood at 103 and 98.2 — 0.6 points above and 13.8 points below their respective levels in January 1694. This is hardly decisive evidence for an inflation at the time Lowndes was writing.³ The three manuscripts (Locke 1695A, 1695B and 1695C) from which Locke built his Further Considerations were completed in July, September and October 1695 respectively — for the most part before the inflation was really under way. Even when the book was finally published in December, the increase in prices had hardly been of sufficient duration to make a compelling case for a compensating adjustment to the monetary standard.⁴

² Horsefield converted the series to a monthly one simply by using the first weekly price available for any given calendar month.

³ Li believes that Locke was partly correct in attributing the high price of silver in 1695 to the poor state of the coins; there had certainly not been an inflation of 25% even at the apex of England's monetary troubles. In his estimation, Lowndes erred in proposing the coin be raised 25%; 5% would have been sufficient (Li 1963, 99).

⁴ Two commentators accept this point. Previous changes in the Mint standard, Hawtrey observed, usually occurred after money had been depreciating in value for many years. But in 1695 the price inflation was only a few months old. To propose locking in “the effects of so sudden a disturbance was very different from giving legal recognition to a fall in the value of the

TABLE 1. Prices of key monetary commodities, London, 1694-96

Month	Guineas (s.)	Gold bullion (£ per oz.)	Silver bullion (s. per oz.)	Gold:silver bullion ratio	Guineas:gold bullion ratio (guineas / oz.)	London-Antwerp exchange rate
						(Flemish schellingen banco per £)
Jan. 1694	22.10	4.11	5.23	15.72	3.72	-
Feb.	21.85	4.30	5.25	16.38	3.94	-
March	22.00	4.25	5.24	16.22	3.86	-
April	22.00	4.05	5.25	15.43	3.68	-
May	22.00	4.05	5.25	15.43	3.68	-
June	22.00	4.05	5.25	15.43	3.68	-
July	22.00	4.05	5.22	15.52	3.68	-
Aug.	22.00	4.05	5.27	15.37	3.68	-
Sept.	22.00	4.05	5.35	15.14	3.68	-
Oct.	22.00	4.05	5.38	15.07	3.68	-
Nov.	22.10	4.05	5.39	15.02	3.67	-
Dec.	22.38	4.08	5.33	15.28	3.64	-
Jan. 1695	22.77	4.11	5.36	15.33	3.61	-
Feb.	23.33	4.23	5.42	15.60	3.62	32.17
March	25.00	4.45	5.52	16.13	3.56	31.48
April	25.00	4.59	5.60	16.37	3.67	30.92
May	27.57	4.91	5.33	18.41	3.56	30.35
June	29.69	5.36	5.73	18.72	3.61	29.75
July	29.81	5.41	6.00	18.04	3.63	29.75
Aug.	29.73	5.42	6.20	17.48	3.65	28.10
Sept.	29.58	5.40	6.33	17.05	3.65	28.08
Oct.	29.40	5.34	6.17	17.33	3.64	28.21
Nov.	29.47	5.36	6.28	17.05	3.63	27.57
Dec.	29.56	5.40	6.42	16.83	3.65	29.33
Jan. 1696	29.50	-	6.02	-	-	30.20
Feb.	29.50	-	5.92	-	-	29.69
March	-	-	-	-	-	29.56
April	22.00	-	-	-	-	29.92
May	22.00	-	-	-	-	30.23
June	22.00	-	-	-	-	30.21
July	22.00	4.10	5.17	15.87	3.73	30.37
Aug.	22.00	4.10	5.17	15.87	3.73	30.88
Sept.	22.00	4.10	5.17	15.87	3.73	33.50
Oct.	22.00	4.10	5.17	15.87	3.73	34.47
Nov.	22.00	4.10	5.17	15.87	3.73	37.35
Dec.	22.00	4.10	5.17	15.87	3.73	37.63

Source: computed from weekly citations in Houghton 1692-1703

Finally, such price increases as did occur in 1695 were likely to disappear as soon as Parliament decided what to do about clipped money. Dwyryd Jones, whose understanding of the monetary unit that had persisted for seventeen or even seven years" (Hawtrey 1927, 294). Li concurs: "It should be noted that the rise of the market price of silver to 6s 5d an ounce was very recent, only of two or three month's duration, at the time he [Locke] was writing. To devalue a price of such recent origin would appear to be a little absurd" (Li 1963, 99).

English economy in this period is unsurpassed, believes the monetary disorders of that year started with a growing loss of confidence in clipped coin, instigated in turn by the prospect of legislation demonetizing this currency and uncertainty about who would be made to bear the resulting losses. Declining confidence in clipped silver coin affected in turn a) the price of guineas and gold bullion, b) the exchange rate, c) the price of silver bullion; and d) commodity prices in general (Jones 1988, 235-39). Guineas rose in value because they were the principal substitute for clipped silver coin and had retained their full weight (milled edges foiled would-be clippers).⁵ Jones notes that they first started rising when Parliament resumed sitting in November 1694 and began climbing in a serious way in January 1695 after the Commons appointed a committee "to receive Proposals how to prevent Clipping of the Coin of this Kingdom for the future; and the Exportation of Silver" (see Table 1). Since the Mint was still legally obligated to coin gold bullion into guineas upon demand and without charge, the domestic price of gold bullion rose in lockstep with guineas (no one would agree to sell it for the usual price when it could easily have been coined into higher-value guineas). Gold stopped rising in value in August 1695 not because the uncertainty came to an end, but because in that month the Treasury Lords directed Exchequer tellers to refuse to accept guineas at more than 30s.

Rising gold prices put downward pressure in turn upon exchange rates. As long as European gold prices remained relatively stable, it now paid very handsomely to import foreign guineas (many had passed into circulation overseas) and gold bullion (see Table 2). The

⁵ Full-weight silver coin could not rise in value to a similar extent because England was a silver standard country and the law of the land therefore prohibited public officials from accepting it at anything more than face value. By comparison, government offices always received and paid guineas at the going market rate, despite their (very nominal) official rating of 20s. It was relatively easy for the market rating of guineas to change, since (like all other English coins at this time) they bore no numerical designation of their official value. The various denominations were distinguished only by their size, weight, colouring and stamped images.

Table 2. Arbitrage round-trip ceiling rates of return, 1694-96

Month	Silver/Gold	Silver/Guineas	Bills/Gold	Bills/Guineas
Jan. 1694	0.02	0.01	-	-
Feb.	0.06	0.00	-	-
March	0.05	0.01	-	-
April	0.00	0.00	-	-
May	0.00	0.00	-	-
June	0.00	0.00	-	-
July	0.00	0.01	-	-
Aug.	-0.01	0.00	-	-
Sept.	0.02	-0.01	-	-
Oct.	-0.03	-0.02	-	-
Nov.	-0.03	-0.02	-	-
Dec.	-0.01	0.01	-	-
Jan. 1695	-0.01	0.02	-	-
Feb.	0.01	0.03	-0.05	-0.02
March	0.04	0.09	-0.01	0.03
April	0.06	0.07	0.00	0.01
May	0.19	0.24	0.05	0.09
June	0.21	0.24	0.12	0.15
July	0.17	0.19	0.13	0.16
Aug.	0.13	0.15	0.07	0.09
Sept.	0.10	0.12	0.07	0.09
Oct.	0.12	0.14	0.06	0.08
Nov.	0.10	0.12	0.04	0.06
Dec.	0.09	0.10	0.07	0.13
Jan. 1696	-	0.18	-	0.16
Feb.	-	0.20	-	0.16
March	-	-	-	-
April	-	-	-	-0.14
May	-	-	-	-0.13
June	-	-	-	-0.13
July	0.03	0.02	-0.12	-0.13
Aug.	0.03	0.02	-0.11	-0.11
Sept.	0.03	0.02	-0.03	-0.04
Oct.	0.03	0.02	0.00	-0.01
Nov.	0.03	0.02	0.08	0.07
Dec.	0.03	0.02	0.09	0.08

Source: See Appendix 1

problem for potential arbitrageurs was to obtain the overseas credits needed to buy gold in Europe. The most convenient solution was bills of exchange, by which English exporters contracted to sell their overseas credits to some local third party (who would in turn collect payment abroad by presenting the bill to the exporter's original debtor). With sharp increases in the demand for overseas credits, exporters could now insist upon lower exchange rates (i.e. could demand more English pounds payable in London in exchange for the overseas credits they had to sell). Exchange rates would also have been depressed by forces at work on the continent. Anyone there wanting to buy a bill of exchange on London (i.e. the right to collect a certain amount of English currency in that city) would insist on paying less in their local currency,

because of the option now open to them of using that purchase price instead to buy gold and export it for sale at the very attractive rates currently available in London.

Rising gold prices and falling exchange rates contributed to the rising price of silver bullion. Bullion exports offered another convenient means of obtaining the overseas credits needed to purchase foreign gold for import into England; silver was economical to transport and could be sold quickly and at fairly stable prices. Bullion exports also picked up whenever exchange rates declined enough to make it cheaper to purchase overseas credits with exported silver than with bills of exchange.⁶ Rising export-related demand for silver bullion would have pushed up its price. Further, given the high rates of return available to those exporting silver and importing gold, few knowledgeable merchants would have agreed to part with their silver bullion except at a considerable premium. So the market price of silver bullion rose with every increase in the market value of guineas.⁷

Finally, uncertainty and rising gold prices contributed to a burst of what Jones calls “inflationary hyperactivity”. The effective money supply increased with every increase in the price of guineas and with the influx of existing and newly-coined guineas (though the effect would have

⁶ With silver bullion at 5s. 4½d. per ounce it paid to export silver once the exchange rate on Amsterdam fell to 34.21 schellingen banco per English pound (Jones 1988, 77, 123). As the price of bullion rose during 1695, the silver export point dropped accordingly.

⁷ The only exception was in May 1695, when the price of silver bullion fell back to its Mint rate despite rising guinea and gold bullion prices. This anomaly may have been connected with the statutory authorization granted to the Bank of England that month to export up to 700,000 ounces of silver coin to help finance the army in Flanders.

On my account of the forces acting upon the market for silver bullion, we might expect its price to have risen in the same proportion as that of guineas. That it did not do so probably indicates gold prices in Europe were rising (lowering the profit available on arbitrage trading and hence the premium that owners of silver bullion in England could demand for their commodity).

been offset in part as silver coin was melted for export). The velocity of circulation also quickened as everyone strove to pass off their clipped silver coin as quickly as possible. Commodity prices rose too because people grew increasingly reluctant to hold clipped coin or even guineas of uncertain future value and tried to move their wealth into goods of more stable value. Aggregate demand would also have surged as those arbitrageurs unable to obtain bills of exchange or silver bullion settled for commodity exports as the next best means of returning abroad the value of their gold imports. Indeed, as exchange rates fell and bullion prices rose, after a time commodity exports may well have afforded a better arbitrage profit rate (though this advantage would quickly have been eliminated by rising commodity prices).

All of these economic effects were bound to disappear not long after Parliament decided at what value to fix clipped silver coin (at least as long as the public was persuaded that Parliament had abandoned once and for all any thought of raising the coin). Very likely the premium on guineas would have dropped away in short order, putting an end to arbitrage trading and the resulting pressures on the exchange rate and the price of silver bullion. As the precautionary flight to commodities had lasted only a few months, it seems unlikely the resulting price increases had yet become built into the structure of wages and production costs. Were prices to return to their former levels there would not therefore have been much disruption to real economic activity, *ceteris paribus* (other than the usual post-boom slump).⁸

So it is inappropriate to approach the recoinage debate with the assumption that the value of money had fallen. Uncertainty about the future value of clipped coin had induced a merely temporary disturbance in the commodity price structure. There was no need to raise the coin if the goal were simply to avoid the economic pain of reversing a prior general price inflation.

⁸ The likely effect on prices and economic activity of a sudden drop in the money supply once clipped silver was demonetized and guineas fell back to their customary value is of course another story altogether. But this has nothing to do with reversing a prior inflation.

III. Melting and bullion exports

Lowndes offered nine reasons in all for raising the coin. Most of his case was built around the first, which accounted for eight of the eleven pages devoted to explaining his reasons. This was the argument that unless the coin were raised, any new coin would be melted for export as soon as it entered into circulation. The market value of silver bullion had risen to 6s. 5d. per ounce, but the official Mint standard stood at 5s. 2d. per ounce. Without a matching increase in the Mint standard (Lowndes' proposal to rate crowns at 6s. 3d. implied a new standard of 6s. 5½ d. per ounce), new full-weight coins would be worth a lot more as bullion than as specie (Lowndes 1856, 206-8).

In setting out this argument, Lowndes treated the high market price of silver bullion as a simple fact requiring no further investigation. But a little later in the section, while commenting upon Locke's analysis of the distributive effects of raising the coin, he did offer an explanation. The price of silver had risen because it was scarce, so much of it having already been exported to cover England's balance of trade deficit and its overseas military expenditures. Its value would remain high as long as the war continued, since the war was the primary cause of the current account deficit (Lowndes 1856, 210-11). This line of reasoning had been developed earlier and at greater length in a July 1695 submission by the Treasury Lords (Great Britain, PRO, 1935, 1144-47) to the Lords Justices (a council of seven appointed to rule in William's stead during the summer while he was away directing the military campaign in Flanders). The high price of gold and silver bullion was due to an adverse balance of trade. Either gold or silver had to be shipped to cover the difference. As merchants were currently importing large quantities of gold (owing to its superior value in England), the deficit was being covered in silver bullion alone. The resulting high demand for the commodity, it was implied, had pushed up its market price.

Locke replied that it wasn't necessary to raise the Mint standard in order to stop melting, for the current high price of bullion was little more than an illusion. It was in fact logically impossible for the value of silver bullion to rise. By common consent the value of all other things was measured by the quantity of pure silver for which it could be exchanged. Any two equal

quantities of silver must therefore always be of equal value (Locke 1695E, 1-3). Under normal circumstances an ounce of silver bullion couldn't possibly sell for much more than 5s. 2d., the amount of currency the Mint generated from an ounce of sterling silver. The market price of bullion in England had risen above 5s. 2d. only because clipping had reduced the metallic content of English silver coin. A larger number of coins were needed now to generate the ounce of silver in specie for which alone anyone would agree to exchange an ounce of their silver bullion (Locke 1695E, 24-25, 31). Bullion "would fall again to morrow to the price it was at before, if there were none but weighty Money to pay for it" (Locke 1695E, 36). There were only two circumstances under which it might prove profitable to melt coin for bullion: 1) when those with access to large amounts of cash had been able to cull out the few coins that happened by accident to exceed their proper Mint weight; and 2) when, owing to a balance of payments deficit, the exchange rate rose enough to make exporting silver a cheaper way of clearing foreign debts than buying bills of exchange. Once the Mint moved to machine-manufactured silver coin (which everyone knew would occur upon a recoinage), the first cause for melting would disappear; all coin would be very near to standard weight. The second cause would persist as long as did the war and the resulting adverse balance of payments. But raising the coin couldn't prevent this kind of melting. A reduction in the silver content of English coin would simply push up the exchange rate accordingly (since exchange rates were normally equal to the ratio of the pure silver contents of the two currencies being traded). It would still be cheaper to use bullion rather than bills to clear foreign debts. If there were not sufficient supplies of bullion available at prices near to the Mint rate, nothing could prevent merchants from melting their stores of coin to make good the shortfall (Locke 1695E, 34-39).

Since Locke's position was well known to the Treasury before Further considerations was published, Lowndes attempted a response in the Report (Lowndes 1856, 208-9). Only two of his five arguments bear repeating here (two others are extremely weak and the fifth pertains to the next section). First, even if the market price of silver bullion did subsequently rise above the proposed new Mint standard of 6s. 5½ d. per ounce, raising the coin would at least eliminate

most of the temptation for melting coin: the current gap of 14½d. per crown between the Mint and market prices. Second, there was an important difference between bullion exports to cover a payments deficit and for arbitrage purposes. “Goldsmiths, Refiners, or other Traders, ... getting great Quantities of Molten Silver into their Hands, know well enough (though by unlawful or Indirect Means) to convey the same beyond Sea, either to buy Gold there, which is afterwards brought hither and Coin’d into Guineas, passing at Thirty Shillings apiece; or to buy Prohibited Goods ... which Augment and Inhance that Balance of Trade between us and our Neighbours, very much to our Detriment”. Locke replied in turn (Locke 1695E, 40-42). The alleged profit of 14½ d. per crown from melting was a fiction — this was the price of bullion only in clipped money, not in full-weight crowns. There was indeed profit in exporting silver to import guineas and gold. But this profit derived from clipped coin circulating at face value and had nothing to do with the particular level at which the Mint standard was set.⁹ The profit from melting coin was the same whether the resulting bullion was spent on legitimate or prohibited imports; there were other ways to stop prohibited goods being imported and the subject was irrelevant in any case to the question of whether the coin should be raised.

⁹ Locke didn’t explain his reasoning in Further considerations. But it is evident in a small manuscript entitled “Guineas”, submitted to Secretary of State William Trumbull in July 1695 (Locke 1695A, 363-64). Imported guineas were being exchanged for thirty clipped silver shillings (this was never the price of a guinea, he implied, when payment was made in full-weight silver coin). The clipped coins were used in turn to purchase silver bullion for export abroad, providing the proceeds needed to repeat the arbitrage cycle. On this analysis, arbitrage profits could be eliminated simply by making clipped coins circulate at their value by weight. This seems doubtful if only because guineas at 30s. could have been exchanged for silver bullion directly. In his favour, Locke argued elsewhere that guineas would fall to 21s. 6d. as soon as clipped coins were made to circulate by weight — and this surely would have eliminated arbitrage profits.

Most commentators are silent on Lowndes' claim that the coin had to be raised in order to prevent melting. A few do concur, but again on the assumption that the general price level had risen. It bears repeating however that this hypothesis was no part of Lowndes' thinking. Confining ourselves to his actual propositions, it is hard to believe Lowndes and the Treasury were in earnest, so weak was the logic of their position. They claimed rising gold and silver bullion prices were due to a trade deficit. Yet in explaining why silver rather than gold had been used to settle current account deficits, Treasury officials began by presuming (without explanation) a high domestic price of gold. As even they acknowledged, the domestic supply of gold bullion was rapidly increasing; scarcity could not have been driving the increase in its price. The high price of silver bullion was due at base to uncertainty about the future value of clipped silver coin, not to a payments deficit.¹⁰ Once a decision had been made to demonetize clipped coin, the market prices of silver bullion and of guineas would soon have dropped back to somewhere near normal — eliminating most of the profits being realized by arbitrageurs. In the absence of a sustained general price increase, the prospect of melting could not legitimately be regarded as grounds for raising the coin.

On the other side, twentieth-century critics have found fault with Locke's argument that silver bullion could not possibly have risen in price. Some maintain it is simply incorrect; others concede the logic but maintain it was irrelevant to the situation at hand. According to the first approach, Locke failed to grasp the concept of money as an abstract unit of account and so the possibility that the price of silver bullion could change independently of variations in the Mint standard (Appleby 1978, 222-28; Fay 1932-34, 149; Feavearyear 1963, 147; Hawtrey 1927, 292-93; Horsefield 1960, 227; Li 1963, 93, 107; Mayhew 2000, 99). The rising prices of gold and silver were "merely symptomatic of a general rise in prices, or, in other words, of a fall in the value

¹⁰ According to the best available estimates, the balance of payments was in fact in better shape in 1695 than in either 1693 or 1694 (Jones 1988, 215; though see also p. 242-43, where the apparent payments surplus for 1695 is downgraded to a small deficit).

of the monetary unit" (Hawtrey 1927, 292-93). But Locke did indeed understand that the purchasing power of English coin could change over time independently of any change in its metallic content. Granted, there is nothing to indicate this in Further considerations itself. But in Some considerations, he asserted that "there is no manner of settled proportion between the value of an Ounce of Silver, and any other Commodity" (Locke 1692, 62). The value of money is determined by the "proportion" of its supply ("quantity") to its demand ("vent") and will vary with changes in supply or demand (Locke 1692, 49-55). In a private communication of late October 1695 to Sir John Somers, Lord Keeper of the Great Seal, Locke applied this theory to the problem at hand. If Lowndes and the Treasury were correct in their assertion that silver bullion was more scarce in England than it had been previously, the price of bullion and of commodities in general should have been falling, not rising (Locke 1695D, 385).¹¹ Locke's main point in Further considerations was not that the value of silver bullion could not change, but that it could not change relative to silver money. The possibility of melting coin for bullion prohibited this (as long as most coin was at its standard Mint weight). Were an inflation under way, it should have shown up not in a higher price for silver bullion, but rather in a reduced purchasing power of both silver bullion and silver coin over all other commodities. This brings us to the second line of criticism. It is allowed Locke was correct in claiming that the price of silver bullion could not have risen much had only full-weight coin been in circulation. But, his critics allege, the point is irrelevant. For Lowndes never claimed that silver bullion was selling in the market for 6s. 5 d. per ounce in full-weight coin; he implicitly assumed this was its price in clipped money. "It was the clipped coins in common circulation which must of necessity have acted as the normal means of final payment, and Lowndes had that practical justification for treating them as being the current standard of value" (Horsefield 1960, 60, drawing closely upon Fay 1932-34, 149-50). Unfortunately for

¹¹ Strictly speaking, Locke was exaggerating. Prices in general should have fallen; for the reasons he outlined in Further considerations (the logical impossibility of a change in the relative value of two equal quantities of silver) the price of bullion should have remained fairly constant.

proponents of this line of criticism, Lowndes did indeed assume that 6s. 5d. per ounce was the new market price of silver bullion even in full-weight currency. Certainly this was his primary rationale for raising the coin. New, full-weight crowns would continue to be worth 6s. 3d. as bullion; were they to circulate at a value of just 5s., there would be a “Temptation [of] ... Fourteen Pence Half-penny” per crown to melt them (Lowndes 1856, 208). He also explicitly asserted that an ounce of sterling silver bullion was selling for more than 5s. even when “delivered *bonâ fide* in Unclipt Shillings, or in a good Bill” (Lowndes 1856, 211). So neither of the two main traditional reasons for finding fault with Locke’s analysis appear well founded.

Still, his account did have genuine problems. First, there was indeed a third way of profiting from melting, one that potentially undermined his position. Had the domestic general price level risen considerably without comparable changes abroad, the greater purchasing power of silver in overseas markets might have induced merchants to melt coin for export as bullion (i.e. to expend their monetary stocks upon foreign rather than domestic commodities). Locke could still have advised against raising the coin — either on the empirical claim that a domestic inflation was not currently under way or by arguing that the problem would correct itself as domestic bullion supplies declined and foreign competition increased, forcing domestic prices down again over time. But the point is he never even considered relative changes in general price levels across nations as a possible cause of melting.¹² Also problematic was his attempt to trace the high price of silver bullion (and of guineas) exclusively to the diminished weight of English silver coin. It was common knowledge that the average metallic content of English coin had declined in a considerably greater proportion than the market price of bullion had increased — a point Locke conveniently neglected to mention at this juncture in his argument. Much later on in the book, commenting upon the arbitrage trade in guineas, he did offer what amounts to an explanation for

¹² For this Locke could be forgiven inasmuch as contemporaries did not have much reason to think an inflation was already underway at this time.

this disproportion. Clipped silver coin, he complained, retained a degree of purchasing power above that merited by its actual metallic content because it continued to be accepted at full face value by government officials and landlords in payment of taxes and rent (Locke 1695E, 94).¹³ The behaviour of Treasury officials was no doubt crucial in supporting the circulation of clipped coin at face value. But the weight of English coins had been falling for years; Locke's account cannot explain why the price of silver bullion should have started rising only in November 1694. The missing link is the effect of arbitrage trading in guineas and gold on the market for silver bullion.

In sum, on the question whether the coin had to be raised to prevent melting, neither Lowndes nor Locke turned in a strong analysis. But on one major point Locke had the better of the argument. Lowndes claimed the price of silver bullion would remain high for as long as the war lasted and that raising the coin was therefore essential. Locke argued the price of bullion would fall as soon as full-weight coin came into circulation or clipped silver was made to circulate at its value by weight and so that England would suffer no disaster if it opted not to raise the coin. Most of the recent increase in the price of silver bullion was due to uncertainty about the value of clipped silver coin and would indeed have disappeared once the money was recoined or clipped silver demonetized. Insofar as Lowndes' case rested on the threat from melting (and much of it did), Locke was therefore right to have denied the need for a change in the Mint standard. It must be allowed however that he was right for the wrong reasons. He thought the price of silver bullion would fall because all prices were mechanistically determined by the metallic content of silver coin. In fact they would have fallen because once uncertainty came to an end, guineas and gold

¹³ This argument first appeared in the "Guineas" submission to Trumbull. "[I]t will be asked why does the Country man or farmer give as much corne or wool or other commoditys for half the weight of silver[,] that is half the value as if it were the full weight? That is plain he does because this imaginary value is kept up by the Exchequers takeing it again for his Taxes and so as it were authorizing or at least allowing it at that rate" (Locke 1695A, 364).

bullion would have returned to their normal values — putting an end to the willingness of arbitrageurs to pay a healthy premium for silver bullion.

IV. The money supply

Of the remaining eight reasons Lowndes offered for raising the coin, three others deserve mention (Lowndes 1856, 214-15). First, it would attract foreign bullion to the Mint for coining. As bullion was now selling in the open market for well above what the Mint was authorized to give, no one was bringing their silver to there to be coined. Raising the coin would make the Mint a competitive buyer again and attract domestic plate as well, helping to increase the supply of specie. Second, it would increase the effective money supply, making it “more commensurate to the general need thereof, for carrying on the Common Traffick and Commerce of the Nation, and to answer the Payments on the numerous Contracts, Securities, and other daily Occasions”. Finally, it would attract hoarded full-weight silver coin into circulation, which would “go a great way towards Supplying the Commerce and other Occasions, whilst the New Money is making”. The problem of hoarding, Lowndes subsequently explained, had gotten much worse after 12 April 1695 when the Commons approved a committee resolution to compensate holders of clipped coin for any losses they would incur upon a recoinage (Lowndes 1856, 232-33; Great Britain, Parliament, House of Commons, 1803, 302). In other words, the expectation of an increase in value had been created in the spring; only by satisfying it could speculators be induced to release their hoards of full-weight coin.

Locke dismissed the first two reasons quickly and with the same counter-argument. Coin was valued by the weight of silver it contained, not by its denomination. Raising its face value would simply cause everyone to demand more coins in exchange for a particular service or commodity. But if the general price level increased in this way, bullion would have no more real value than before and would not be attracted to England (Locke 1695E, 61-62); nor would the effective money supply be increased in any way (Locke 1695E, 64-67). If it were true that money could be made more abundant by raising face values, why not raise them by 100% or 1000%

instead of just 25% (Locke 1695E, 68-75)? Locke acknowledged that raising the coin would cause hoarded heavy coin to return to circulation. But, he countered, the same end could also be achieved simply by decreeing that clipped silver should circulate at its value by weight at the existing Mint standard of 5s. 2d. per ounce. This would effectively put an end to speculation that the coin was about to be raised and eliminate any incentive for making payments in clipped rather than full-weight coin (Locke 1695E, 104; see also Locke 1695C, 377).

For twentieth-century commentators, it is usually Lowndes' argument that raising the coin would increase the money supply that tips the balance in his favour and against Locke. A larger money supply, they maintain, would have eliminated or at least dampened the ensuing deflation. Locke, they allege, failed to recognize that a recoinage at the old Mint standard would entail a large reduction in the nominal money supply. The sharp deflation and near economic collapse that set in soon after the recoinage began was the predictable outcome (Eltis 1995, 22; Feavearyear 1963, 136; Hawtrey 1927, 293; Horsefield 1960, 28-32; Kelly 1991, 90-91; Li 1963, 107). This verdict assumes that Lowndes had in mind the positive effect of an increased money supply upon the general price level — that he was concerned to forestall a deflation consequent upon a recoinage that was bound to reduce the nominal money supply significantly (by wiping out half the face value of English clipped silver coin). But Lowndes never argued his case in this way. His expressed goal was to offset the sharp drop in the supply of circulating specie that would be caused by a recoinage, a decline that threatened to prevent otherwise viable economic transactions (no doubt he was thinking especially of tax payments and war loans) from being carried through. He certainly did not maintain that an increase in the money supply would help to sustain the general price level after a recoinage. In fact, he explicitly argued that raising the coin would have no effect on prices (Lowndes 1856, 209-11). The value of money would remain constant as long as silver bullion was in short supply (which was likely for as long as the war lasted, since its scarcity was due principally to wartime disruptions to foreign trade). Creditors and landlords receiving payment in raised coin would suffer a loss of purchasing power only at the end of the war.

Many commentators are dismissive of Locke's proposition that contemporaries valued coin by its metallic content rather than its denomination. It shows, they allege, that he lacked practical business experience and worked from a priori principles to which he held dogmatically (Challis 1992, 381; Feavearyear 1963, 135, 148; Horsefield 1960, 57, 68; Hutchison 1988, 67; Letwin 1963, 170; Mayhew 2000, 99). In one sense the verdict is appropriate; it seems unlikely that the public would have behaved in the manner Locke predicted. But elsewhere in the book Locke did offer a more cautious and sensible account of the mechanisms by which a change in the Mint standard might lead to inflation.¹⁴ It was "ten to one" that the general price level would increase in the same proportion that the coin was raised in value. The prices of all imported commodities would tend to rise in the same proportion for, as even Lowndes seemed to allow,¹⁵ foreigners valued English coin by its metallic content, not its face value. Grain prices were independent of changes in the money stock (being governed exclusively by demand and supply) and so, given a reduction in the silver content of English coin, would rise in an offsetting proportion. Since grain accounted for "almost all" of the budget of a typical labourer, most employers would be forced to increase nominal wages by 25%. And as labour was the principal production input, the average price of domestic goods and services would have to rise in a similar proportion (Locke 1695E, 51-53). Furthermore, Locke's thesis that prices are governed by the metallic content of the coin in the end gives the same result as a modern quantity theory approach — increasing the money supply tends to raise the general price level in the same proportion. This was surely a point worth

¹⁴ It must be granted that since this explanation still relies upon the premise that coin is valued by weight rather than denomination (particularly in its account of rising grain prices), it is not much better than the other.

¹⁵ This is implied by Lowndes' comment that in denying the potential for a change in the Mint standard to raise the effective money supply, Locke and his supporters "consider only the use of our Coin ... as it hath Relation to Foreign Exchanges or Remittances", but ignore its domestic uses, where it would indeed have the desired effect (Lowndes 1856, 209).

making. If he is to be faulted it should be for exaggerating the speed with which this long-term outcome would be reached (a trait not uncommon among quantity theorists). For the first few months at least, an increase in face values would probably have helped tide over the specie shortages certain to result from a recoinage. But Locke was at least correct in asserting prices would tend to rise after raising the coin: an effect Lowndes attempted to deny altogether.

While it might appear from his brisk dismissal of Lowndes' arguments that Locke failed to foresee the adverse effect of a recoinage upon the supply of specie, this was far from true. As his most recent editor has noted (Kelly 1991, 90-91), Locke worked very hard to secure a solution to clipping that would diminish the quantity of available specie as little as possible. First, throughout 1695 he recommended against a formal mass recoinage, arguing it would remove too much currency from circulation all at once. He proposed instead that the king issue a decree directing clipped coin to circulate at its value by weight. As this would make clipped silver a very inconvenient currency, it would be sure to return to the Mint for recoinage. But this would happen gradually and at the convenience of individual holders. Kelly maintains Locke was aware that making clipped coin circulate at its weight by value would mean a sharp fall in the money supply, but probably assumed this would be more than offset by hoarded coin returning into circulation. Locke warned that were the recoinage carried out with full compensation to the holders of clipped coin, at first little of the new-coined money would find its way into circulation. It would be snapped up by unscrupulous dealers to be melted down, fabricated into facsimile clipped pieces and re-submitted for "compensation".¹⁶ When Parliament did resolve upon a recoinage, Locke worked

¹⁶ "Methinks the silver does wisely not to come into England at this time where it is like to run a perpetuall circle of torment if it stay here. Into the fire it goes at the Exchequer and is noe sooner out but is committd to the tower there to goe into the furnace again to be brought to Standard and then to size and then be pressed in the mill. As soon as it get free out of the tower it is either lockd up in some Jaylors chest from goeing abroad or if it peeps out tis ten to one but the thriving company of Coiners and clippers put it again into the fire to be joynd with bad

together with two close friends in the Commons to add a clause for clipped coin to continue circulating by weight after the recoinage began (De Beer 1979, 584, 590, 592, 597, 617, 620). They worried that otherwise the country would suffer a “stop of trade” during the summer. These were not the actions of a dogmatic philosopher out of touch with economic realities. Kelly maintains that Locke can only be faulted for failing to recognize that under his proposal there would be a sudden uncompensated drop in the effective money supply when guineas dropped back to 21s. 6d. apiece. I suspect Locke had considered this problem; it is clear from his correspondence during the spring of 1696 that he was eager to see the value of guineas fall. If he was nevertheless opposed to raising the coin it may have been in part because he knew this would also shift the losses from clipping away from the current holders of clipped coin. But this touches upon a subject best left to the next section.

V. Public finance and politics

Modern commentary on the Lowndes-Locke controversy concentrates upon the implications of currency reform for the general price level. If distributive issues are raised, it is only in connection with prices; a deflation would have benefited landlords and creditors. But for contemporaries questions of distribution were central to the debate. Coming in the middle of a long and expensive war, the recoinage also had a significant political dimension. In this section I explore these neglected aspects of the debate.

Patrick Kelly, the editor of a recent and very fine edition of Locke’s monetary writings, believes the Report was not a statement of Lowndes’ own position, but an official Treasury document for which Lowndes was merely the appointed scribe (Kelly 1991, 106-109). Kelly’s case rests on three main propositions. First, the Report was written at the command of the

company. and then to be hampered and cut and so conveyed to the Exchequer to run the same Gantlet again” (Locke to Clarke & Freke, letter of 14 February 1696, printed in De Beer 1979, 540).

Treasury Lords and published by the royal printer. Second, its recommendations were very similar to those published in March 1695 in the report of the Commons recoinage committee (Great Britain, Parliament, House of Commons 1803, 11:265) — suggesting Lowndes may simply have been catering to the views of established political interests. Finally, in a private report submitted to the Treasury Lords in late January 1695 (Lowndes 1695A), Lowndes was highly critical of a recoinage proposal almost identical to the one eventually put forward in the Report. The plan had been submitted to Treasury by Lewis Gervaise, a private projector, in early January 1695; he later incorporated it into a pamphlet published anonymously in 1696. Gervaise had proposed that all clipped silver coin be melted down and made into new coins of the usual size and weight, but raised in face value to 6s. 8d. per crown pro rata until mid-1697, after which they would be lowered in two stages to the usual 5s. per crown (Gervaise 1696, 10-20). Lowndes complained that the plan would not eliminate the losses from clipping as advertised. The “residue of the said Loss will remaine in y^e high raised or imaginary value of his Pro[pose]d ... [increase] from 5s per oz. to 6s 8d per oz.” Losses would be “sensibly felt” once the coins were reduced again to 5s. per crown. Second, the plan would “diminish his Ma[jes]ties Revenues, Taxes and Loans”. For while domestic prices “might” remain stable “yet its likely that so much [royal revenue] as shalbee spent abroad will not goe or bee Exchanged but according to the reall or intrinsique value of the Silver”. Finally, the plan would also raise all import prices and affect “ye interest of ye Gent. and others who live upon ye rents reserved by long leases for lives or years w[hi]ch rents they cannot raise in ye like proporc'on” (Lowndes 1695A, 108v). This could almost have been written by Locke himself. If it was Lowndes’ honest opinion (which seems very plausible since his remarks were not intended for public consumption) then very likely he disagreed with many of the propositions being put forward in the Report.

This raises the obvious question why the Treasury would release a report containing recommendations with which its own author apparently disagreed. One possibility is that Lowndes, a faithful civil servant, was merely expressing the views of the Treasury Lords rather than his own. But a more probable answer lies in the political situation.

A recoinage clearly stood to affect the government's financial position. First, it would be difficult for anyone to pay their taxes while the country's entire stock of clipped silver coin was being melting and recoined. Second, a recoinage would dramatically improve the prospects for revenue collection and so the state of short-term public credit. For scarcity of good silver coin and uncertainty about the future value of clipped coin and guineas, had caused the "Receipt and Collection of the Publick Taxes, Revenues, and Debts ... [to be] extremely retarded, to the Damage of His Majesty, and to the Prejudice of a Vigorous Prosecution of the War" (Lowndes 1856, 233-34). Without adequate supplies of specie, the Treasury was finding it difficult to support the circulation of tallies; in summer 1695 they were being discounted by as much as 25% and refused outright by some military suppliers (Great Britain, PRO 1935, 1409; England & Wales, Treasury 1695B, 80, 110-11; 1695C, 283-84, 324-25; 1695-96B, 63, 67, 268). As Lowndes himself acknowledged, it would be highly improper to undertake a recoinage during wartime were it not for the fact that it was "indispensibly necessary, to render effectual the very Ways and Means, which in Parliament may be Resolved upon, in reference to Aids or Supplies for Carrying on of the same War" (Lowndes 1856, 230). Third, if holders of clipped coin were to be compensated in any way, a recoinage would carry a heavy cost for which the Commons would have to find the necessary funding. Finally, were silver coin restored to its proper state the exchange rate was sure to rise, reducing the English-currency cost of supporting an army overseas.

Consequently a parliamentary debate upon recoinage was bound to become entangled in the politics of party and court. In particular it offered opposition politicians a chance to damage the administration's financial and military prospects under cover of a purportedly public-spirited concern to protect England's stock of silver coin from melting. The Commons recoinage committee report of March 1695 was the tip of this political iceberg. The committee was dominated by opposition politicians. Its central recommendation, that English coin be raised to 5s. 6d. per crown pro rata, was sure to induce speculative hoarding of full-weight coin and thus slow tax collection and loans to the crown. The report was published before it had been

approved by the Commons. This highly unusual departure from standard parliamentary procedure was the result of high politics. In February leading Whig ministers learned that Trevor Guy, the Commons Speaker, had accepted a large bribe from the Tory-connected East India Company. He was promised immunity for turning informant on an even larger Company bribe paid to the Duke of Leeds, William's foremost Tory minister. Though Guy delivered, the Whig ministers went back on their word; in early March he was about to be forced from office and subjected to a parliamentary inquiry. Locke's two friends in the Commons explained that Guy's decision to publish the committee report was a parting shot at the government — "a testimony of his affection" (John Freke & Edward Clarke to Locke, letter of 14 March 1695, printed in De Beer 1979, 292). Guy's choice of this particular document indicates that he expected it to be very damaging to the government. The timing of the report is also significant. In late 1694, a few months after its inception, the Bank of England had begun handling "foreign remittances" (the business of supplying the foreign exchange needed to pay the army in Flanders) for the Treasury. On 8 March 1695 the Bank entered into a new 3-month contract with the Treasury to remit funds at a fixed rate of 32.2 Flemish schellingen per English pound (the going exchange rate at that time).¹⁷ The Commons recoinage committee report appeared four days later, causing an immediate and predictable sharp decline in the exchange rate. The tactic appears to have worked, for later that month Richard Hill (Deputy Paymaster General to the army in Flanders) reported that the Bank had stopped supplying foreign exchange in Antwerp. It was no longer buying up bills of exchange in London as it now stood to lose money on every transaction. Hill believed it would no longer be possible to supply military funds by the usual means. William promptly proposed a series of new financial measures (England & Wales, Treasury 1695A, fo. 88r); this was the occasion for instance for the Bank's new "Antwerp Agency" — a project

¹⁷ The contract actually specified a rate of 10 guilders 2 stivers per English pound. Since a stiver was 1/20th of a guilder and 1 guilder = 6 schellingen, this was the equivalent of 33.7 schellingen. Assuming an agio of 4.5%, this amounts to about 32.2 schellingen banco.

designed to raise local credit for the army. But the crown's financial problems only got worse as the year progressed. By July the Bank was reporting that with guineas at 30s. arbitrageurs were absorbing all available bills of exchange on Antwerp, making it impossible to remit funds for the army (Great Britain, PRO 1935, 1146; see also England & Wales, Treasury 1695-96A, 4).

Given the setting it is entirely possible that Lowndes' call for a change in the Mint standard was a highly-calculated political move. By adopting as their own a premise that had until now been the exclusive preserve of the opposition (namely that a recoinage at the present standard would cause all new silver coin to be melted by depraved merchants and speculators hoping to export it for their own selfish gain), the Treasury Lords may have been trying to make the best of a bad situation. In proposing to raise the coin they could hope to steal the opposition's thunder in the new session (which began in November 1695) and secure speedy approval of a recoinage bill. The goal of minimizing opposition to the bill probably also lay behind the decision to recommend that "the loss [from clipping], or the greatest part of it ought to be born by the Publick, and not by Particulars". For as Lowndes warned, those in possession of clipped coin, "being very Numerous will be prejudiced against a Reformation for the Public Benefit, if it is to be Effectuated at the Cost of particular men" (Lowndes 1856, 235-36). This may have been a veiled reference to those MPs who were themselves goldsmiths and financiers or politically connected with them; having large stores of (other people's) money, bankers would suffer significant losses if clipped money were demonetized without compensation. Goldsmiths would also have favoured an increase in face values if they possessed stores of guineas and full-weight silver coin. For Lowndes proposed that the latter remain in circulation and be raised in value along with the new silver coins. And everyone expected that raising the coin would stabilize guineas at 25% above their former value — a boon to bankers who had received them for deposit at any value below 26s. 10½ d. Conversely it would also minimize losses for those bankers who had received guineas at a higher value. Finally, it would ease the task of managing the Commons when it came time to devise a tax to cover the impending losses from clipping. Lowndes estimated there was £4 million of clipped silver coin in circulation. Since by September 1695 these coins had

fallen on average to half their proper Mint weight, a recoinage would eradicate £2 million worth of face value. If face values were raised 25%, the recoinage would produce £2.5 million worth of new coin, generating the first £500,000 toward the requisite compensation fund (Lowndes 1856, 227-28).

Though raising the coin would have cost the Treasury down the road by increasing the charge of supporting an army overseas, it would also have had some immediate and very significant benefits for the Treasury. First, as the Report noted, it would release into circulation any heavy silver coin that was being hoarded in prospect of an increase in face values. The Treasury Lords sorely needed access to good-quality coin in order to pay off some of their creditors, thereby removing the discount on Exchequer tallies and restoring them to circulation. Second, a change in the Mint standard would encourage loans of silver specie to the Exchequer. One of the advantages of his proposal, Lowndes pointed out, was that it could easily be reversed; English coin “may be Lowered again by the Wisdom and Authority of Parliament, when the Wealth of the Nation shall (by God’s Blessing) be Re-establisht without Trouble or Charge of Re-coining or Cutting the Silver Pieces into other Sizes” (Lowndes 1856, 217). While certainly true, this was also an implicit inducement to wealthy English citizens to offload their currency holdings before a revaluation should occur. One obvious way of doing this would have been to lend them to the Exchequer, which would be obligated to repay the nominal value even after the coin should be lowered again. Finally, raising the coin would also have helped with a planned major new Treasury undertaking. Pending during the parliamentary session of 1695-96 was a measure to establish a competitor to the Bank of England, the so-called National Land Bank, on condition that its subscribers contributed a war loan of £2.5 million (over a third of the total revenues to be raised by the Commons that session). Guineas at 26s. would have been an implicit subsidy to potential investors in the new enterprise, helping to ensure its target capital level could be raised quickly and in full. William later learned this lesson well. Once Parliament resolved upon a recoinage at the existing Mint standard (in January 1696), he pressed to have guineas reduced to 22s. His likely aim was to increase the foreign purchasing power of domestic tax revenues (much

of which was now being received in guineas). The Commons eventually complied with the king's wishes, though only under considerable pressure. But in June 1696, as it became increasingly evident the Land Bank project was destined to fail, William confessed to the Earl of Shrewsbury, a Secretary of State: "I now see, too late, that I was in the wrong, and there appears to be no remedy for obtaining credit, but the acceptance of guineas by the Treasury at 24 or 25 shillings, and giving a premium of interest [on loans to the crown]" (Coxe 1821, 118).

Certainly Locke was very supportive of King William and his war and concerned for the administration's financial position. In a private memorandum delivered in September 1695 to Secretary of State Trumbull, he observed that "the great and pressing mischief [of the currency crisis was that] the Kingdom will not be able to supply the Kings necessitys for the carrying on of the Warr the consequences whereof are too visible as well as too dreadfull to be mentioned" (Locke 1695B, 365). But Locke maintained that changing the Mint standard would actually worsen the crown's position. The value of any specific (as opposed to ad valorem) revenues would decline with the inflation he was sure would follow. The Exchequer would find it difficult to secure new loans, having effectively robbed its existing creditors of 20% of the value of their former loans (Locke 1695E, 12-13, 109). Leaving it to the Commons to appoint a compensatory tax opened the possibility that no solution would have been found by the end of the session, keeping the nation in a dangerous state of disorder for another year (Locke 1856, 370). Locke was certainly aware of the connection between raising the coin and the proposed National Land Bank. But he seemed to think it unnecessary to offer a premium to potential investors for he delighted in the news that the Commons had defeated a measure to fix guineas at 25s. apiece. "The subscribers will not now be able to put off their Guineas at an high rate to the cost of the Government" (Locke to Clarke, letter of 25 March 1696, printed in De Beer 1979, 579). Nor did Locke share Lowndes' worry about getting a recoinage bill through the Commons without a simultaneous change in the Mint standard to buy the support of MPs connected with the financial community. "I wish it were well weigh'd, which of the two ways the greater number of men would be most dangerously prejudic'd against this Reformation" (Locke 1695E, 106).

It may be however that Locke was predisposed to overrate the crown's financial prospects in the absence of an increase in face values. For he recognized that raising the coin would redistribute the nation's wealth in ways he disliked. The benefits would go to "those ... and those only who have great Sums of weight Money ... hoarded up by them. To those by the proposed change of our Money will be an increase of one fifth added to their Riches, paid out of the Pockets of the rest of the Nation. For what these men received [from their depositors] for Four Shillings, they will pay [out] again for Five" (Locke 1695E, 47). The gains to hoarders, bankers for the most part, would come mainly at the expense of the gentry — already carrying a disproportionately heavy share of the burden of the war (the administration's main revenue source during most of the war years was a land tax that appropriated 20% of rental incomes). For landlords (and creditors) would lose 20% of their real incomes if prices rose in the same proportion as the Mint standard (Locke 1695E, 9-10, 46-54).¹⁸ In a private memorandum to Trumbull he noted that making clipped coin circulate at its value by weight "taxes mony[:] exactly a thing which the parliament has aimed at these several sessions and could not reach" (Locke 1695B, 372-73). For it would effectively impose most of the losses from clipping on bankers, the principal holders of clipped coin. To Locke's mind this was a just solution, for bankers were responsible for most of the hoarding and had already profited from it. "For, by that means all the current Cash being light, clip'd, and hazardous Money, 'tis all tumbled into their Hands, which gives credit to their Bills [viz. deposit notes], and furnishes them to trade for as much as they

¹⁸ Locke denied that any benefits would flow to tenants or debtors. For the former case he offered no explicit explanation. As for debtors he argued that anyone trying to borrow specie to pay off existing loans could be forced to pay the new higher rates (Locke 1695E, 48). This ignored the effect of higher wages and agricultural commodity prices on the nominal incomes of many debtors and tenant farmers respectively.

please, whilst every body else scarce Trades at all" (Locke 1695E, 104).¹⁹ Distributive considerations also lay behind Locke's objection to Lowndes' proposal for a public tax to compensate the holders of clipped coin. This would take money from the gentry "only to be bestowed on Men in their, and the common Opinion, no better deserving of their Countrey than themselves; (unless growing exceedingly rich by the publick Necessities, whilst every body else finds his Fortune streightned by them, be a publick Merit, that deserves a publick and signal Reward)" (Locke 1695E, [A4r]). This echoes a comment in his memorandum to Trumbull. "It seems unreasonable that the Country should out of its pockets by a Tax make those yet richer who have got vast Estates by engrosseing and handling the Money of the Nation" (Locke 1695B, 366).²⁰

Locke's opposition to the Treasury's coinage reform proposal seems to have derived in large part from his perception that it was being driven from behind the scenes by private interests.

¹⁹ Locke made the same point a few pages earlier. He claimed that all of England's monetary troubles could be traced to the practice of accepting clipped money at face value. This habit would continue, he complained, as long as "the Goldsmiths and Bankers receive it; and they will always receive it whilst they can pass it over again [in loans] to the King with advantage, and can have hopes to prevail, that at last when it can be born no longer, but must be call'd in, no part of the loss of light Money, which shall be found in their hands shall fall upon them, though they have for many Years dealt in it, and by reason of its being clip'd have had all the running Cash of the Kingdom in their Hands, and made profit of it" (Locke 1695E, 97).

²⁰ The same diagnosis appears in a letter of 31 July 1696 from Edmund Bohun (for a time the royal censor under William & Mary) to the Bristol merchant John Cary. Bohun had printed a broadside supporting Locke's proposal that no compensation be given to the holders of clipped coin. "This would not serve the interest of the bankers and moneyed men, so the king, the body of the nation, the gentry and nobility were to be sacrificed to them that had plainly brought this mischief on the nation, and so it was" (cited in Challis 1992, 387).

From their private correspondence it is clear the Locke's circle of friends believed goldsmiths and tax officials (who also had access to large quantities of specie) were manipulating the currency crisis to their financial advantage and sought a change in the Mint standard as a way of lining their own pockets further (see for instance De Beer 1979, 507, 540, 542, 552, 561-62, 597-98, 631; Davison & Keirn 1988, 235-36). One letter is particularly memorable. Early in 1696, after Parliament had decided against raising the coin, Locke's friend Pawling reported that Exchequer officials and goldsmiths were trying by underhanded means to offload their guineas while they still retained a high value. "[T]ruly," joked Pawling, "twas time for you to be gon, for you have attempted the ruine of their Diana and put a stop to that craft by which such K[naves] have got their gain" (letter of 2 January 1696, printed in De Beer 1979, 500). The reference is to Acts 19.23-41. Two of Paul's disciples were almost killed by an angry mob in Ephesus. The mob had been stirred up by silversmiths specializing in shrines of the goddess Diana, whose divinity Paul had called into question.

VI. Concluding remarks

Commentators prefer Lowndes over Locke because they focus on the question of the general price level. They implicitly assume that Lowndes recommended raising the coin in order to avoid a deflation and fault Locke for having failed to grasp the likely deflationary consequences of his recommendation to retain the existing Mint standard. But the contemporary debate turned upon questions of another order. Lowndes' major argument in favour of raising the coin was that unless this were done England's new silver money was bound to be melted for export as bullion. He did pay some attention to the effects on the money supply, but he recommended a change in the Mint standard in order to alleviate the scarcity of specie in some absolute sense and certainly not in order to avoid a deflation. Against such arguments Locke actually provided a solid rebuttal. While his analysis was not without its shortcomings, he was surely right that it wasn't necessary to raise the coin in order to prevent melting. And while he acknowledged that a change in the

Mint standard might have some positive effects on the supply of specie, he took care to argue that the same goal could be achieved by other means.

This is not to suggest that Lowndes was a poor economist. He probably knew parts of his case were weak but was not saying what he really thought. His ultimate objective was to improve the Treasury's prospects for collecting taxes and restoring its short-term credit. As it would not have done to declare this openly, he defended his proposal instead upon grounds he may very well have known to be spurious — that it was necessary to prevent melting. This provided the political cover needed to buy the support of several key interest groups in the Commons and so ease the Treasury's task in managing the House during the session of 1695-96. Locke may have overstated his case, but he was not mistaken in asserting that the proposal to change the Mint standard was intended to benefit England's "monied men". The Treasury Lords seemed to be willing to pay this price to secure their own ends. Locke may have been right in principle that their goals could have been achieved by other means. But given the hard realities of the political and financial situation, his position was probably politically naïve or at least unduly optimistic. Perhaps he let his strong antipathy toward the monied interest get the better of him. The Treasury Lords, in any case, could not afford his principles and idealism. They worked behind the scenes to secure a change in the Mint standard, knowing that in this lay their best chance of success.

Appendix 1: Calculating arbitrage rates of return

Bills of exchange to Antwerp were priced in schellingen banco per English pound. (The schelling banco was the currency unit for accounts at Dutch exchange banks, where all bills of exchange for more than 300 schellingen banco had by law to be cleared.) Exchange dealers charged a “brokage” fee when selling bills, but normally it was so small as to be unimportant. Agents deducted a standard commission of 0.5% of the value of any bills handled on behalf of their principals (Scarlett 1682, 18). Schellingen banco ran at an average premium of 4.75% over schellingen proper (McCusker 1978, 48). The normal market price in Amsterdam (and I assume in Antwerp too) for pure gold bullion was 377.2 florins per Dutch mark (Jones 1988, 77) and a florin was the equivalent of 3.3 schellingen. Jones estimates the cost of insuring and transporting bullion one way between Amsterdam and London at 1.5% of the weight of the shipment (Jones 1988, 78); I assume the same rate applied for bullion shipments to and from Antwerp. A Dutch mark weighed the same as 7.91117 English ounces troy.²¹ The market price per ounce troy of English gold bullion referred to crown gold, which was 91.66667% pure. So every schelling banco purchased in London by way of a bill of exchange on Antwerp ultimately netted 0.00705 ounces of crown gold back in London. As the English Mint coined 3.70833 guineas from every ounce of crown gold, a schelling banco could also be converted into 0.02613 guineas back in London. Arbitrage rates of return for arbitrage between bills of exchange and guineas or gold bullion can then be calculated using the exchange rates provided in Table 1.

²¹ All numbers in this Appendix were rounded to the fifth decimal point. But the results reported in Table 2 were generated using all the numerical accuracy available in floating point calculations. Anyone trying to replicate my results will therefore note small differences in the fourth and fifth decimal points.

English silver bullion prices referred to sterling silver, which was 92.5% pure. The Amsterdam Exchange Bank charged a fee of 0.75% by weight for converting bullion into Dutch coin (Jones 1988, 123). Since at this date the Dutch coined 25.1 florins from a mark of pure silver (Jones 1988, 29), it required the equivalent of 15.02789 ounces of pure silver to buy an ounce of pure gold (at the customary price for gold bullion). So an ounce of sterling silver exported to Amsterdam ultimately netted 0.06466 ounces of crown gold back in London. At the current Mint standard for guineas, an ounce of sterling silver bullion could also be converted into 0.23978 guineas. Arbitrage rates of return for arbitrage between silver bullion and guineas or gold bullion can then be calculated using the prices provided in Table 1.

Table 2 reports ceiling rates of return as it assumes the market price of gold on the continent remained throughout at its normal level. But with arbitrage rates of return of this magnitude, the demand for European gold must have been very great, and continental prices probably would have risen somewhat.

Bibliography of Works Cited

- Appleby, Joyce Oldham. 1978. Economic thought and ideology in seventeenth-century England. Princeton: Princeton University Press.
- Challis, Christopher E. 1992. A new history of the English Mint. Cambridge: Cambridge University Press.
- Coxe, William (ed.). 1821. Private and original correspondence of Charles Talbot, Duke of Shrewsbury, with King William, the leaders of the Whig party, and other distinguished statesmen; illustrated with narratives, historical and biographical: from the family papers in the possession of her grace the Duchess of Buccleuch, never before published. London: Longman, Hurst, Rees, Orme and Brown.
- Davison, Lee; and Keirn, Tim. 1988. "John Locke, Edward Clarke and the 1696 guineas legislation". Parliamentary History 7:228-40.
- De Beer, E. S. (ed.). 1979. The correspondence of John Locke. Volume 5: Letters Nos. 1702-2198. Oxford: Clarendon Press.
- Eltis, Walter. 1995. "John Locke, the quantity theory of money and the establishment of a sound currency." The quantity theory of money: from Locke to Keynes and Friedman, ed. Mark Blaug, pp. 4-26. Aldershot: E. Elgar.
- England & Wales. Treasury. 1695A. Copys of minutes taken at the Treas'ry relating to the returns of money for payment of the forces in Flanders before 1 May 1695: delivered by Mr. John Taylor, Aug. 14 1695. British Library, Lansdowne MS 1215, ff. 79-91.
- _____. 1695B. Treasury papers, Volume XXXII, January to April 1695. PRO T 1/32.
- _____. 1695C. Treasury Papers, Volume XXXIV, October 1695. PRO T 1/34.
- _____. 1695-96A. Copys of minutes relating to remittances of money for payments abroad for ye Committee of Account pursuant to Mr Tollers letter dated 8th 8ber 1696. British Library Additional MS 70517.
- _____. 1695-96B. Minute book, from 12 April 1695 to 4 September 1696. Public Record Office T 29/8.

- Fay, C. R. 1932-34. "Locke Versus Lowndes." Cambridge Historical Journal 4:143-55.
- Feavearyear, Albert. 1963. The Pound Sterling: a History of English Money. 2nd ed. Oxford: Clarendon Press.
- [Gervaize, Lewis]. 1696. A proposal for amending the silver coins of England, and the possibility of it, without any great charge to the nation: demonstrated in two different ways. London: author.
- Great Britain. Parliament. House of Commons. 1803. Journals of the House of Commons. Vol. 11: From November the 7th 1693, in the fifth year of the reign of King William and Queen Mary, to November the 23d 1697, in the ninth year of the reign of King William the Third. London: House of Commons.
- Great Britain. PRO. 1935. Calendar of Treasury books, preserved in the Public Record Office. Vol. 10: January 1693 to March 1696. London: H.M.S.O.
- Hawtrey, R. G. 1927. Currency and credit. 3rd ed. London: Longmans, Green & Co.
- Horsefield, John Keith. 1960. British monetary experiments, 1650-1710. Cambridge: Harvard University Press.
- Hutchison, Terence W. 1988. Before Adam Smith: the emergence of political economy, 1662-1776. Oxford: Blackwell.
- Jones, D. W. 1988. War and economy in the age of William III and Marlborough. Oxford: Basil Blackwell.
- Kelly, Patrick Hyde. 1991. Introduction. In Locke on money, by John Locke, pp. 1-121. Oxford: Clarendon Press.
- Letwin, William. 1963. The origins of scientific economics: English economic thought, 1660-1776. London: Methuen.
- Li, Ming-Hsun. 1963. The great recoinage of 1696 to 1699. London: Weidenfeld and Nicolson.
- [Locke, John]. 1692. Some considerations of the consequences of the lowering of interest, and raising the value of money: in a letter sent to a member of parliament. London: Awnsham and John Churchill. Reprinted in Locke 1991, 209-342.
- _____. 1695A. Guineas. Unpublished manuscript, printed in Locke 1991, 363-364.

- _____. 1695B. A paper given to Sir William Trumbull which was written at his request September 1695. Unpublished manuscript, printed in Locke 1991, 365-373.
- _____. 1695C. Propositions sent to the Lords Justices (carried to the Lord Commissioners 23 October 1695). Unpublished manuscript, printed in Locke 1991, 374-380.
- _____. 1695D. Answer to my Lord Keeper's queries (delivered 30 October 1695). Unpublished manuscript, printed in Locke 1991, 381-397.
- [_____]. 1695E. Further considerations concerning raising the value of money: wherein Mr. Lowndes's arguments for it in his late *Report containing an essay for the amendment of the silver coins*, are particularly examined. London: A. and J. Churchill. Reprinted in Locke 1991, 401-81.
- _____. 1991. Locke on money. 2 vols. Ed. and Intro. Patrick Hyde Kelly. Oxford: Clarendon Press.
- Lowndes, William. 1695A. May it please your lordships. Unpublished manuscript dated 29 January 1694/5. British Library Harleian MS 1243, fo. 108.
- _____. 1856 [1695]. A report containing an essay for the amendment of the silver coins. London: Charles Bill & Thomas Newcomb (royal printers); reprinted in A select collection of scarce and valuable tracts on money from the originals of Vaughan, Cotton, Petty, Lowndes, Newton, Prior, Harris and others, ed. James Ramsay McCulloch, London: Political Economy Club.
- Mayhew, Nicholas J. 2000. Sterling: the history of a currency. New York: John Wiley & Sons.
- McCusker, John J. 1978. Money and exchange in Europe and America, 1600-1750: a handbook. Chapel Hill: University of North Carolina Press.
- Scarlett, John. 1682. The stile of exchanges: containing both their law and custom as practised now in the most considerable places of exchange in Europe. London: John Bringham.
- Schumpeter, Joseph Alois. 1954. History of economic analysis. Ed. E. B. Schumpeter. New York: Oxford University Press.
- Vickers, Douglas. 1959. Studies in the theory of money. Philadelphia: Chilton.