
DEBATES

Once More Unto the Breach - A Reply

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In a recent issue of this Journal Harry Miskimin responded to an earlier exchange between us.¹ Our debate started after I published, in this Journal, new data on French mint outputs for the period 1385-1415.² Many scholars characterize this period as a 'bullion famine'. The data I presented substantially increased French coin production levels for the period and challenged the view that this period constituted a bullion famine. Miskimin responded to the challenge by discounting the significance of my findings and my methods.³ I replied to Miskimin's specific arguments. Then, I used a simple statistical test to demonstrate that average annual minting volumes calculated from the new data I presented do not significantly differ from similar data compiled by Miskimin for the first half of the fourteenth century.⁴ Therefore, I argued that the fragmentary evidence available on French mint outputs does not allow us to label the period from 1385 to 1415 as a bullion famine. It was that reply that evoked Miskimin's recent article.

In this reply I will address some of Miskimin's substantive claims. The principal criteria guiding my choice was the provision of additional (beyond our previous exchanges) information for the reader interested in this debate.

I. Coin debasement and mint output.

Miskimin and I agree that debasement elevated the level of coin production in France. Debasements taken due to political and military factors, disturbed the pace of coin production that was driven by underlying economic forces. In a recent paper I show, based on primary sources, that the period of debasement from 1417 to 1422 brought significant revenues for the Dauphin.⁵ Therefore, these debasements should not be described as having «generally failed to attract

¹ Miskimin (1993).

² Sussman (1990).

³ Miskimin (1991).

⁴ Sussman (1991).

⁵ Sussman (1993).

extant coin or bullion to the mints». ⁶ Miskimin claims that since no debasement took place in the year 1339 one can contrast lower *average* annual minting levels recorded during the later half of the fourteenth century with the large volume of coin production in that year. ⁷ Indeed, no *further* debasement took place during 1339. However, between January 1337 and June 1342 the crown steadily debased the French currency: in 1337 the currency was debased by 50 per cent. ⁸ In October 1338 by 33 per cent, by 25 per cent in January 1340, in April 1340 by 20 per cent, in January 1341 by 17 per cent, in February 1341 by 14 per cent and a final debasement of 25 per cent in June 1342. During this period the cumulative debasement of the French silver coinage was 400 per cent! Miskimin claims, and I concur, that peak debasements were less effective than the initial ones in attracting bullion to the mints. ⁹ Therefore, 1339 does not belong to a period of stable currency, but belongs to the initial years of debasement when both of us expect higher than usual minting volumes. Figure 1 demonstrates that the 'bullion famine' period — 1385 to 1405 — occurred during a period of stable currency. This period is unfairly contrasted with mint outputs occurring during the first half of the fourteenth century that was plagued with debasements of the silver coins. Debasements and currency manipulation were prevalent in France from the turn of the thirteenth century right up until the monetary reform of Charles V in 1365. The reform lasted until March 1412 and for 47 years the silver currency was debased by a mere 12.5 per cent! ¹⁰

II. The appropriateness of my statistical test.

Given the different nature of the monetary regimes which prevailed during

⁶ Miskimin (1993) p. 407.

⁷ *Ibid.*, p. 406.

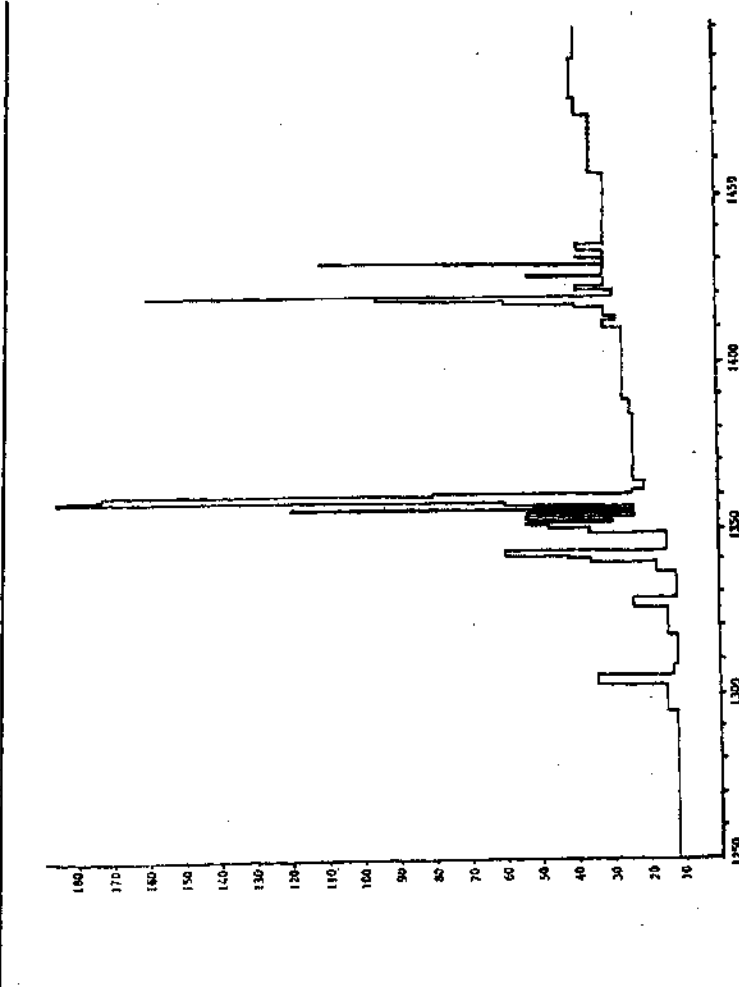
⁸ The debasement rates I use are the change in the nominal price of bullion denominated in debased coins. The numbers are calculated from Fournial (1970) p. 100.

⁹ Miskimin (1993) p. 407.

¹⁰ Miskimin (1993) p. 403 claims that I have attacked his «work without, in fact, reading it». I did not further cite his work since it was not directly related to our debate. However, by raising the issue of peak debasements, Miskimin requires me to refer to his statement that «First sharp debasement occurred in 1397-98 (see Graph III) and carried the nominal value of a kilogramme of silver from 28.2 livres tournois to 40.7 livres tournois in two years». (Miskimin 1986, p. 57) Mint documents I studied at the archives, Favier (Favier, 1971 p. 53), and Fournial (Fournial, 1970, p. 118-19) fail to note such a debasement. In fact, it never occurred. Rather, it is an artifact of inaccurate secondary sources such as Saulcy. This lapse did not escape other readers of the book such as Sorenson (1988 p. 248). If we read further in the same paragraph we learn that «Thereafter, output declined precipitously, falling to less than four kilograms in 1399. No gold was recorded as having been coined in either 1399 or 1400». Both these statements are proved to be wrong in Sussman (1990).

Figure 1

The nominal value of a marc *argent-le-roi* minted into French royal coins: 1250-1500



Notes:

1. Source: Favier (1971) p. 53.
2. Marc argent-le-roi equals approximately 245 grams of 95.8% fine silver
3. *Pied de la monnaie* is the price of a fifth of a marc *argent-le-roi* silver measured in *sous tournois*. For example a *pied* of 60 implies that a marc of silver is worth $(60 \times 5) / 20 = 15$ *livres tournois*.

the first (unstable) and second (stable) halves of the fourteenth century it is quite impossible to compare them at all. In my reply I did try to compare the two periods by conducting a statistical test of the hypothesis that average coin production levels for the period 1308-1343 do not significantly differ from those of the period 1384-1419. Since the first period included debasements I added four years of debasement (1415-1419) to the latter period to offset the debasement bias inherent in the first half of the fourteenth century.

Miskimin claims, correctly, that I did not include the subsequent years of that debasement period 1420 to 1422. However, if I had added them, as Miskimin suggested, the case for not rejecting the hypothesis that the two periods have the same annual average minting levels is strengthened. Total coinage for those three years is, respectively, 15,314, 9,292 and 6,926 kilograms pure silver.¹¹ The average for those years is 10510 kilograms pure silver. This exceeds the average annual mint production I used in my test (8420).¹² Adding the amount of coins minted between 1420 and 1422 to the amount minted from 1384 to 1419 would only have *increased* average annual minting from 8,420 to 8,585 kilogrammes of pure silver. Thus, Miskimin's argument is only weakened.

Miskimin argues against the appropriateness of applying this statistical test to medieval data. In my reply I already wrote that «I do not wish to use fragmentary figures and estimates in high-powered statistical analysis».¹³ However, I did use a simple statistical test only to «prove that based on incomplete evidence we cannot distinguish between these two periods».¹⁴ Miskimin argues that the standard deviation in the data is so high that the test is meaningless. I agree that the standard deviation in the data is high. However, this only strengthens my argument. If minting data from the first half of the fourteenth century show such volatility, how can we say that *average* minting levels during that period, as opposed to the minting level during *one* year chosen by Miskimin (1339), were significantly larger than during the period 1384-1422? It is precisely the high variance that reduces the *average* coin output for the period 1308-1343 compared with the volume of minting in *one* exceptional year such as 1339.

III. On the use of evidence from hoards to infer the share of the Dauphiné in French total coin output.

In the absence of coin output data for most of the mints in France, I resorted to using a distribution of coins found in hoards to evaluate the relative share of Dauphiné coinage out of total French coinage. The hoards I am

¹¹ Miskimin (1986) Table III p. 136.

¹² Sussman (1991) p. 680.

¹³ *Ibid.*

¹⁴ *Ibid.*, p. 679.

referring to were unearthed during the last 70 years and are documented in the *revue numismatique*. Full references are provided at the reference list at the back of my 1990 piece.¹⁵

While coins did not have dates stamped on them, one can classify them into 'emissions' according to their intrinsic content (weight and fineness) and the design stamped on them. Furthermore, each mint had a secret point stamped on the coin which allows the numismatists to determine the origin of the coin. During the period in question, the hoards mainly contain coins from two readily distinguishable emissions — the second emission (1389-1411) and the fourth emission (1411-1417). Thus, at best we can only obtain an *average* distribution of coins according to place of origin for the entire period. This information is insufficient for constructing annual data, hence I did not use these estimates in my 1990 paper. However, this evidence is useful for the exercise conducted in my reply since I was calculating an *average* minting volume for the entire period of each emission. What I did was to calculate the average share of coins originating in the Dauphiné mints out of the total number of coins found in all recorded hoards. I then took the average output level for the Dauphiné for the period 1384-1419 and multiplied it by the inverse of the share of Dauphiné coins calculated from the hoards to obtain an estimate of total French coinage.¹⁶

This procedure is accurate only if we are certain that the hoards are a representative and unbiased sample of French coin production. I cannot claim that the hoards recorded possess this quality. First, the hoards were usually found in the northern parts of France — the war zone — probably because their owners were unfortunately prevented from recovering them at that time. Second, I have used data from only 7 hoards. A bias could indeed be present. However, I have used additional sources that I documented in my 1990 piece and in a subsequent article that confirm the gross estimates I have used.¹⁷ My subsequent archival work tends to reinforce the picture represented in the hoards and other documents I used. The share of the Dauphiné in total French coin production was higher during the second emission than during the fourth one.

IV. On the use of treasury accounts to infer mint production.

Miskimin correctly argues that I did not use treasury accounts to infer conclusions for coin production in France. However, this was done neither

¹⁵ Miskimin (1933) p. 408, complained that I gave no references for these articles.

¹⁶ For example, if the share of coins originating in the Dauphiné out of the total number of coins found in the hoard is 25 per cent, and if the total amount of silver minted at Dauphiné mints was 1000 kg., then the estimate for total French coinage would be $1000 \times (1/.25) = 4000$ kg.

¹⁷ Sussman (1993) p. 57.

because unfamiliarity with secondary sources, as Miskimin alleges, nor because it would have damaged my case. Miskimin cites Fawtier (1930) but fails to cite Rey (1965). Rey reconstructed treasury accounts for seven full years and four half years for the period (1384-1411) in addition to the accounts reconstructed by Fawtier.¹⁸

However, it was not unfamiliarity with the reconstructed treasury accounts that prevented me from using them in my paper. Recently I studied the original treasury accounts in the Archives Nationales (Series KK 14 *recettes du tresor*). These accounts contain additional information for years not reconstructed by Rey. The series of mint revenues transferred to the crown is very difficult to use since it contains only the residual profits of the coinage occurred at the mint after all expenses and salaries were deducted.¹⁹ We have to know the exact amount of these deductions before we can calculate gross profits. In order to do this we need the actual mint accounts — if we had those accounts we would not need to consult the treasury accounts.

The second item listed in the accounts is the value of the coins contained in assay boxes sent to Paris. The mints were required to sample coin production and submit the sample in a sealed box to be assayed by the general mint masters in Paris. Ideally, if the series on the value of the coins contained in the boxes were complete and detailed, we could indeed reconstruct the coinage levels at each mint. Taking the number of coins in the box and multiplying it by the sample ratio we can arrive at total output. However, the treasury accounts list the value of the coins in the assay box not their number. If the mints were producing only one type of coin this would not present any problem at all. Unfortunately the mints produced several types of coins that were of a different denomination and sampled at different rates.

The major problem is that the boxes contained both gold and silver coins. The *blanc* — the common silver coin — had a face value of 10 *denier tournois* and was sampled at a rate of 1:1000. The *ecu* — the gold coin — had a face value of 22 *sous* and 6 *deniers* and was sampled (before 1398) at a rate of 1:500 and at a rate of 1:200 thereafter. For example suppose that the treasury accounts record the value of a box at 100 *livres*. Since we are facing one equation with at least two unknown variables, this could be the result of any possible combination of gold and silver coins. On the one extreme, if it were all gold coins, the box would contain 89 gold coins.²⁰ This would imply that the mint produced 44,500 gold coins (some 176 kilogrammes of gold).²¹ Conversely, if the box contained only silver

¹⁸ Rey (1965) pp. 81-89, 97-99.

¹⁹ See Sussman (1993) p. 59 for the complexity of the detailed breakdown of revenues and costs of the mint at Romans.

²⁰ 100 *livres* are equal $100 \times 20 = 2000$ *sous*. 2000 *sous* divided by 22.5 (value of the *ecu*) yield approximately 89 *ecus*.

²¹ Gold coin production was sampled at a rate of 1:500. Therefore if there are 89 coins in the box they would represent $89 \times 500 = 44,500$ gold coins. Since 62 gold coins were

blancs then there would be 2,400 coins in the box representing a total output of 2,400,000 blancs (3638 kilogrammes of silver).²² Each gold coin present in the box lowers the amount of silver coins in the box by 27. Put differently — each gold coin found in the box reduces the amount of silver minted at the reporting mint by 41 kilogrammes.²³

Therefore, if we do not know the distribution of coin production between silver and gold at each mint within each year, we cannot safely use the box values recorded at the treasury. My analysis of the Dauphiné mints shows the high variance and unpredictable relationship between gold and silver minting at the Dauphiné mints.²⁴ Therefore, we can not assume a fixed ratio between the two metals and between any two mints.

Despite these caveats, David Sorenson recently attempted to calculate the amount of silver minted in France based on these treasury receipts (from the original documents found at the Archives Nationales). Sorenson calculated that some 440 to 490 tons of silver were minted from 1385 to 1411 compared with 536 tons minted between 1325 and 1350.²⁵ Using Sorenson's estimates, even the use of treasury receipts could have undermined Miskimin's case.

Conclusions

In this reply I dealt with some of the criticisms levelled against me by Miskimin. My 1990 paper, which started this debate, intended to call attention to the fact that the French archives contain data that question the presumption that our knowledge on French minting statistics is as Miskimin still claims «substantially accurate».²⁶ I also argued that we must not rely on the main secondary source — De Saulcy — whose inaccuracy impeded many scholars. In a forthcoming paper I have already added new data from additional mints to the data I published on the Dauphiné.²⁷ The picture that emerges from these

struck from a *marc* (244.7 grams) of gold the 44,500 coins would equal $(44,500/62) \cdot 2.447 = 176$ kilogrammes of gold.

²² 100 *livres* equal $100 \cdot 240 = 24000$ *deniers*. Each *blanc* is worth 10 *deniers*. Thus if the value of the box is 100 *livres* (24000 *deniers*) it contains $24000/10 = 2400$ coins. Since *blancs* were sampled a rate of 1:1000, 2400 coins represent $2400 \cdot 1000 = 2,400,000$ coins. 74.25 *blancs* were minted from a *marc* of silver at a fineness of 46 per cent fine silver. Therefore 2,400,000 *blancs* represent $(2,400,000/74.25) \cdot .46 \cdot 2.447 = 3638$ kilogrammes pure silver.

²³ One *écu* is worth 22.5 *sous* which are equal $22.5 \cdot 12 = 270$ *deniers* that are worth $270/10 = 27$ *blancs* which represent 41 kilogrammes of silver. $(27 \cdot 1000/74.25) \cdot .46 \cdot 2.447 = 41$.

²⁴ Sussman (1990) p. 155.

²⁵ Sorenson (1988) p. 264.

²⁶ Miskimin (1993) p. 404.

²⁷ Sussman (1994).

sources is quite different from the one that could be inferred either from the Dauphiné data alone or Miskimin's theories. Rather than prolong the current debate I refer the interested reader to my forthcoming work addressing these issues.

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