Economic History Review, L, 4(1997), pp. 735–763

Central bank cooperation in historical perspective: a sceptical view[1]

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From the sometimes tedious business of using archives, economic historians nevertheless constantly face the possibility of being surprised. The surprise may come in many forms, but usually not as a clean 'discovery' where new bits of evidence immediately surrender to straightforward interpretation. More often, having travelled for a while in a new territory, they look back at where they have come from and realize that the formerly familiar landscape has suddenly become foreign.

This article deals with a surprise of this kind, that grew from a visit to the Rothschild archives, in the spring of 1993. As part of an investigation of the activities of Rothschild Frères in the bullion markets I opened a box that contained three files relating to gold advances between the Bank of France and the Bank of England.[2] These dealt with three important financial and/or exchange crises. The first concerned the 1847 episode where the Bank of England provided its French counterpart with much silver, and some gold, helping it to muddle through monetary difficulties that had origins in a series of bad harvests. The second dealt with the 1890-1 events that followed the Baring crisis, where this time France provided Britain with gold. The third was the 1931 failed attempt to support sterling, in a struggle that ended in Britain leaving gold and then the worldwide collapse of the gold standard. As time passed, I began to believe that this one-box combination of pre-classical, classical, and post-classical gold standard experiences of international action, with strikingly different outcomes reflected some higher principle, the sign that central bank cooperation was probably not decisive in the operation of the gold standard. This discovery seemed to lead in a totally different direction from that taken by other research, under Eichengreen's banner, during the 1980s. Economists, unhappy with the coordination problems that accompanied the general flotation of currencies in the 1970s, were becoming increasingly sensitive to the advantages derived both from

[1] I am grateful to Jerry Cohen, M. de Cecco, J. Foreman-Peck, E. Hochreiter, C. P. Kindleberger, Daniel Laskar, Ken Mouré, D. Plihon, L. Scialom, Pierre Sicsic, the editors and anonymous referees of this journal, as well as to participants in the ARC II seminar, Paris, and in the Evora meetings of the European Association for Banking History for their comments on earlier drafts. Critical comments from Philip Cottrell and Barry Eichengreen, who remained sceptical about my scepticism, were very useful. Cooperation of central banks (the archives of the Bank of France and of the Bank of England) and of private banks (the Rothschild archives, Paris) is gratefully acknowledged. I alone am responsible for the views expressed here.

[2] 'Relations avec la Banque de France', Archives Rothschild, 132 AQ 122.

cooperation[3] and from exchange rate stability. At about the same time, this latter concern also led to a sudden revival of interest in the gold standard. A substantial body of literature was then directed at understanding the 'success' of the pre-1914 gold standard and its later 'failure'. Eichengreen had one story for both parts. In a series of papers that culminated in the by now classic introduction to *Golden fetters*, he claimed that central bank cooperation had been the key to the smooth operation of the pre-1914 gold standard.[4] Central bank cooperation supposedly brought about exchange rate stability, and this in turn improved the regime's credibility, further facilitating its success. Inability to cooperate, by contrast, had led to the interwar collapse.[5]

Eichengreen sees the pre-1914 gold standard as having two functions. In 'normal' times, central banks altered their discount rate in response to shocks arising in their respective money markets.[6] In periods of crisis, however, the whole system operated in a totally different manner. Central banks supposedly realized that they had common interests, and instead of competing for gold through interest rate hikes, pooled their reserves in order collectively to improve their ability to avoid convertibility crises. Allowing each central bank to draw on the reserves of the others in emergencies created a kind of informal international lender of last resort.[7]

In Eichengreen's words:

> The credibility of the pre-war gold standard rested on international cooperation.... Major crises [were] contained through overt, conscious cooperation among central banks and governments. Central banks and governments discounted bills on behalf of the weak-currency country, or lent gold to its central bank. Consequently, the resources any one country could draw on when its gold parity was under attack far exceeded its own reserves; they included the resources of the other gold standard countries. This provided additional ammunition for defending their gold parity.[8]

[3] Hamada, 'Strategic analysis'.

[4] Eichengreen, 'International policy coordination'; *idem*, 'Credibility and cooperation'; *idem*, *Golden fetters*.

[5] Recently, Eichengreen's view on the topic has become a kind of conventional wisdom (see e.g. James, *International monetary co-operation*). Hints of dissent may be found in Mouré, 'Limits to co-operation', which claims that 'the pre-war gold standard offered neither justification nor opportunity for continuous central bank co-operation' (p. 260). See also Gallarotti, *International monetary regime*.

[6] Movements of the reserve, as well as knowledge of seasonalities, expected bullion imports and exports, and of course discount rate changes abroad conveyed information about these shocks, and served as a basis for decision making.

[7] This mechanism is reminiscent of that described by Gorton, 'Clearing houses', albeit in a wholly different context. Gorton argues that in the US, clearing houses fulfilled some lender of last resort functions (before the founding of the Federal Reserve Bank) by providing members with drawing rights in periods of crisis.

[8] Eichengreen, *Golden fetters*, pp. 7-8. Note that this view is more radical than Eichengreen's earlier analysis (e.g. 'International policy coordination'): 'The very actions of central banks suggest that their objectives were not in fact so easily reconciled by the operation of gold standard constraints. Discount rates tended to move together, not inversely as the "rules of the game" would suggest. Central banks sterilised international gold flows more often than they intervened to reinforce their impact on domestic markets. These and other actions resemble the outcome of a non-cooperative game, in which the participants act to neutralise rather than accommodate the efforts of their counterparts. Yet on occasion central banks and governments managed to achieve cooperative solutions to their problems, such as when they negotiated swap arrangements, earmarked gold, or extended international loans. Both central banks and governments clearly recognised their interdepen-

It is difficult to reconcile Eichengreen's claim with the elements found in the Rothschild archives. Had cooperation (in the shape of reserve pooling) been such an essential ingredient of the functioning of the pre-1914 international monetary system, how could it be that the substantial help (in monetary terms) brought by France to England in 1931 failed? Or conversely, if cooperation per se had not been enough to save the gold standard in 1931 was it so essential before 1914?

I thus started to investigate the record of central bank cooperation and, rather than limiting myself to the heyday of the gold standard, I decided to examine the broader nineteenth century which displayed a degree of exchange rate stability similar to that which obtained during the 'classical' period (1880-1913). My conclusion was that cooperation had been exceptional, never reciprocal, and always failed to institutionalize. The attitude of central banks towards each other was found to oscillate between hatred, neglect, and indifference. As a result, any attempt to build on cooperation a comprehensive interpretation of nineteenth-century monetary stability would not be convincing.[9]

In fact, what has been interpreted as cooperation was the product of the selfish interest of central banks: they helped each other only when this provided a direct benefit to them, instead of mutually adjusting towards some cooperative equilibrium as hypothesized by the cooperation view. Moreover, far from displaying a trend towards greater cooperation (as Eichengreen argued), the attitude of central banks towards each other exhibited important cycles. In practice, three main sub-periods can be identified, each characterized by drastically different outcomes in terms of international monetary order. To some extent, these variations in behaviour reflected the changing structure of the international monetary system. Specifically, the provision and allocation of liquidity, the existence of legal constraints on policy instruments, as well as the balance (or imbalance) of monetary power were responsible for the central banks' behaviour with respect to their reserves and in turn gave rise to varying degrees of cooperation with their counterparts in other countries.[10]

I

There are many levels at which the existence and extent of monetary cooperation could be examined. In particular, one should distinguish

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dence, if they did not always succeed in coordinating their actions' (pp. 139-40). The 'dual functioning theory' might be thought of as an attempt to reconcile this earlier view with later claims. And indeed, the dichotomy between 'normal times' and 'emergency behaviour' is important because it suggests that despite his claims, Eichengreen never really believed that cooperation was the normal state of monetary affairs, but was rather a mechanism put into action in exceptional circumstances.

[9] This echoes Viner's views of the mid-nineteenth century: 'Co-operation between central banks was during this period exceptional rather than an established policy. On the contrary, it appears that ordinarily the central banks either paid little attention during this period to what was going on in other money markets, or else engaged in competitive increases of their discount rates and in raids on each other's reserves at a time of actual or anticipated credit stringency': *Theory of international trade*, pp. 274-5.

[10] This conclusion echoes the view developed by Kenen (in *Managing exchange rates*) who, although writing about the contemporary era, expresses the same scepticism regarding the optimizing approach to coordination (i.e. the cooperation view).

between cooperation within structures and cooperation about structures. Most economists—apart from those who would describe themselves as political economists—believe that structures are somehow exogenous, or at least point out that the timing of their change is infinitely longer-term than that of variables such as agents' behaviour. Political scientists, by contrast, are keen to endogenize the rules of the game because they (rightly) believe that the way the rules are set influences the game's outcome. Rational decision makers should care at least as much about the way they define the rules of the game as about adopting a given policy stance.[11] Yet, as often happens, actions on structures (that is, changing the statutes) are not beyond the reach of agents concerned with day-to-day management, and thus are not included in their decision set.

In monetary matters, cooperation about structures thus relates to the (explicit or implicit) setting and definition of 'the rules of the game' by international actors who have the power to do so. Cooperation within structures, by contrast, refers to the formulation and implementation of the policy stance within those very rules. Given the nineteenth-century division of political labour, cooperation about structures would be the task of governments, while cooperation within structures would be the responsibility of central banks. Hence it is possible that cooperation occurred within central banks in the absence of explicit coordination between monetary systems—or vice versa.

To be sure, this distinction between rules and policies is partly artificial since the two levels are deeply interwoven. Still, it has an heuristic value, because it helps to map the various spheres in which international monetary action could take place. Besides, at a structural level there are grounds for believing that cooperation within the gold standard was a complete failure. As I have argued elsewhere, the very emergence of the gold standard was a typically uncooperative outcome that stemmed from a failure of coordination between the French and the German governments.[12] Similarly, Gallarotti emphasizes that the 1880-1914 period displayed (despite repeated international conferences) very little intergovernmental cooperation, and a general inability to find a coordinated solution to the period's single largest monetary problem—the fall in the price of silver on world markets which disrupted a previously stable world exchange rate system.[13] Such findings (which echo earlier claims by distinguished scholars such as Russell and Mertens are important because they seem to be at odds with the central bank cooperation view. In other words, proponents of the cooperation story should explain why and how

[11] Some economic historians, such as Douglass North, also emphasize the endogeneity of institutions and their historical dimension.

[12] Flandreau, 'French crime of 1873'.

[13] Gallarotti, *International monetary regime*. See Flandreau, *L'or du monde*, for a description of the pre-gold standard monetary order.

cooperative and non-cooperative behaviour could coexist—i.e. cooperation at the policy level along with non-cooperation at the structural level.[14]

This article focuses on the policy level rather than on the structural level, leaving the full study of the interactions between central banks and governments to future research. This approach seems natural given that the cooperation story was formulated in terms of central bank policies. But it is useful to keep the distinction in mind because, as will be seen, governments and parliaments often interfered with central bank actions, and might thus have to a certain extent influenced the cooperative—or, as was the case, non-cooperative—outcome.[15]

The structure of a specie standard can be presented in terms of a simple framework. While it will appear in the course of the article that the actual setting within which central banks implemented their policies could be more complex (most notably because a number of restrictions could be imposed on it), this will serve the purpose of clarifying the various concepts to be used.[16]

Consider a world where two (identical) central banks operate their respective monetary systems on a gold basis. Both face a trade-off between exchange rate stability and output. Raising the interest rate attracts reserves and thus helps to stay on gold, but has adverse effects on the economy. Moreover, since both countries are on gold, each central bank is affected by the decisions of its counterpart. If the two central banks pursue their targets independently, raising their interest rates competitively to attract gold, and are symmetrical, both will end up with identical gold reserves and a low output. This outcome is known as the competitive or 'Nash' equilibrium. In this case, central banks cannot rely on foreign help to maintain the gold standard, and the stability of the exchange rate can only be achieved through separate (deflationary) domestic policies.[17] Alternatively, central banks may realize that this is counterproductive and barter their way out of competition. Mutual adjustments of their policies towards Pareto improvements will bring them to the cooperative equilibrium, which, according to Eichengreen, characterized the gold standard. A well-known feature of this equilibrium, however, is that it can very easily break down, as it is to the advantage of each central bank to deviate from the agreed policy, thus going back to the competitive

[14] Russell, *International monetary conferences*; Mertens, *Naissance et développement*. As is often the case, the period was full of calls for increased international cooperation, which proved instead how limited effective cooperation was. For instance, Schumpeter, *Economic analysis*, p. 1077, remarked that during the 1892 international monetary conference 'Julius Wolf, a German economist, proffered a new idea, namely that an international gold reserve be deposited in a neutral country and that international banknotes be issued on the basis of this reserve—an idea that, although in an entirely different form, was to be partly realised by the international monetary fund of Bretton Woods fame.'

[15] This type of dichotomy is familiar to political scientists. For a different, but related perspective, see Putnam, 'Diplomacy and domestic politics'.

[16] For a more formal presentation of this framework, see Hamada, 'Strategic analysis'; Eichengreen, 'International policy coordination'.

[17] This analysis appears to be at the heart of Gallarotti's view of the gold standard as a pervasive or diffuse regime: Gallarotti, *International monetary regime*.

equilibrium.[18] A third possibility is the outcome where one central bank realizes that by lowering its discount rate (and thus by letting gold flow out) it will lead its counterpart to respond in kind: the fall in the foreign discount rate, by permitting further reduction of the domestic discount rate, may compensate the benevolent central bank for the initial loss of gold. But the trouble with this policy is that the bank which initiates the move (known as the 'Stackelberg leader') gains less than the one which follows, because the 'follower' wins on all counts: it increases its reserves *and* reduces its interest rate. This may lead to a game of 'chicken' with each central bank trying to induce the other to become the leader,[19] and this would bring the players back to the competitive equilibrium. The hegemonic theory of the international monetary system has been proposed as a solution to this dilemma.[20] According to the theory, the hegemon is willing to stabilize the world economy by its own efforts: for the sake of global stability, it agrees to gain less than other countries and is expected to defend the regime when necessary.[21] However, as Eichengreen emphasizes, it is not clear what should have encouraged Britain (the most likely hegemon of the time) to exercise leadership in the Stackelberg sense.[22]

II

The period before 1854 seems to have been characterized by a number of successful international actions involving the Bank of France and the Bank of England. At the time, England was on gold, and France operated a bimetallic standard. Moreover, abundant silver production had led the Paris market to operate chiefly on a silver basis (until the late 1840s).[23] Although arbitrage stabilized the gold-silver exchange rate within narrow margins, substitutability between the predominant reserve metal of Paris and London was imperfect. In London, gold was money. In Paris, by contrast, gold was melted down and exported as an asset. The opposite held for silver, a monetary metal in Paris, an asset in London. Hence the sensitivity of each money market to shocks arising abroad was *a priori* smaller than would have been the case under a pure gold standard.

Domestic constraints also limited the range of policy instruments in both countries, at least until mid-century. Official discount rate increases

[18] This effect can be mitigated in a dynamic framework where the short-term gains of deviating are smaller than the future losses from being trapped in the Nash equilibrium.

[19] Cooper, 'Economic interdependence'.

[20] Kindleberger, 'International public goods'.

[21] This one-way cooperation is fundamentally different from the two-way cooperation of the Pareto equilibrium. Kenen (*Managing exchange rates*) distinguishes between co-operation of the Pareto kind ('optimising') and unilateral support of the Stackelberg kind ('regime preserving').

[22] Eichengreen, 'Hegemonic stability theories'.

[23] Most authors (for instance Redish, 'Persistence of bimetallism') have incorrectly characterized the bimetallic system as exhibiting global switches from one metal to the other. Flandreau, *L'or du monde*, shows to the contrary that the bimetallic system was characterized by a regionalization of circulation of gold and silver monies in France. For instance, gold supply shocks tended to drive silver out of circulation in the regions that were most closely connected to international bullion markets (e.g. Paris). Only when such shocks persisted were other regions also contaminated.

were limited by legal ceilings, and other policies (such as rationing) were used consistently to tighten credit conditions. This was especially true for France, where usury laws formally prohibited, until 1857, the raising of interest rates above 6 per cent. In practice the Bank of France tried to keep its discount rate close to a long-run 4 per cent target. The same held, albeit to a lesser extent, in England where resistance to interest rate rises was political rather than statutory. As emphasized by Cottrell, ‘it was only with the “new” policy of competitive discounting after 1844 that Bank Rate fluctuated widely’.[24] But even then increases in Bank Rate met opposition both within and outside the Bank. In the two countries, public opposition to interest rate hikes remained strong and vocal. In both central banks, governors such as Weguelin or d’Argout still preferred a dose of ‘quantity rationing’ to interest rate changes: with legal, institutional, or ideological resistance to active discount policies, reserve pooling might have been a more likely outcome.

Early examples of central bank harmony included the 1825 London crisis, which was dealt with through the help of the Bank of France, which took silver from the Bank of England in exchange for gold, thus providing extra liquidity to both markets. In 1836, the Bank of France again helped the Bank of England, by agreeing that the latter draw bills of credit on Paris for a sum exceeding £400,000. In 1839, the London market was again in crisis and suspension of specie payments was considered. The governor of the Bank of France, the Comte d’Argout, happened to be at the time in London, and agreed to support the Bank of England in its attempt to seek assistance from the Paris market by arranging meetings with French bankers. The Bank of England objective was to obtain from French private banks a credit line on which it could draw in order to sell Paris bills on the market, thus turning the exchanges away from the bullion export point.[25] T. A. Curtis, a former governor of the Bank of England, travelled to Paris and met Delessert and Hottinguer, two leading figures in the financial community. Despite the abundance of idle balances that prevailed at that date in the Paris market,[26] Delessert and Hottinguer were cautious. They held that, given the importance of the projected rescue package, agreement and material support from the broader banking community and from the Bank of France were required. A meeting in the governor’s room at the Bank was then organized, with the governor and sub-governors and Thomas Baring (who had arrived in the meantime).[27] It was ascertained that the statutes of the Bank of

[24] Cottrell, ‘London, Paris and silver’, p. 134.

[25] As the final contract between the Bank of England and the French bankers stated that its aim was ‘de rectifier les changes avec le Continent, principalement avec Paris, et pour faire cesser les demandes continuelles d’espèces qui lui sont faites pour l’export’ (Bank of England archives, G4/62).

[26] Lévy-Leboyer, ‘Central banking and foreign trade’.

[27] Baring having missed the opportunity, Curtis began the negotiations alone with Delessert and Hottinguer, who ‘declared it would be impossible for them to give their names singly or even together for a transaction which involved such large sums and which might extend over a prolonged period. They said they did not want to provoke observation on the extent of their obligations; that Paris was a place where every transaction was known and canvassed, and that it would be impossible for them to conceal the extent of the operation; that therefore if the transaction was to take place

France would not admit of its lending money upon foreign bills or securities. But the Bank could discount bills with bankers who would lend to London through Baring's intermediary, as it had done in 1836.

A syndicate of the 12 most prominent Paris bankers was thus gathered.[28] Rothschild, who had been called on at the last minute (probably not accidentally), refused to come.[29] A first deal was struck, and submitted to James de Rothschild who declined to participate as he had not been involved in the negotiations. The deal was then discussed in the Conseil Général, and further problems (such as whether or not the credit line would be a revolving one) were debated. The ensuing meeting between members of the syndicate revealed centrifugal forces as one more banker tried to opt out.[30] Active pressure from Hottinguer was finally necessary to get the support of everyone, and the treaty between Baring, the Bank of England, and the Paris bankers was finally signed on 1 August. The episode (which provided £2 million in bills to the Bank of England) was reported as having made it possible to avoid the suspension of specie payments.[31]

The negotiation had also revealed that the Bank of France was a complex structure. Far from being a well-identified entity with clear goals and objectives, it was a club where the (conflicting) interests of the banking elite were brokered. Because it provided rediscounting facilities, the Bank of France as a whole had to be part of a deal that would lock some of its important members into a long position. But as soon as some members were in a position to benefit from the Bank of France's backing in granting credit to the Bank of England, other bankers would also compete to be part of the deal, and if excluded, might try to sabotage the whole scheme (as the exclusion of the Rothschilds and the ensuing difficulties had suggested). The perceptible tension, between the Protestant establishment on the one hand and the Rothschilds on the other, revealed that negotiations with Bank of France could be lengthy, and

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it must be done in conjunction with several Houses, a limit being placed to the amount with each House' (Curtis report, Bank of England archives, G4/62, 138).

[28] The initial syndicate included André and Cottier; Baguenault & Co; Delessert & Co; Davillier; D'Eichtal & fils; Rougemont & Co; De Rothschild Frères; Hottinguer; Jaques, Lefebvre & Co; Mallet Frères & Co; Perier Frères; Pillet Will & Co.

[29] Rougemont, being abroad, was also excluded from the negotiation. This attitude vis-à-vis Rothschild probably resulted from the competition between its network and Barings' in international credit. Indeed, N. M. Rothschild had been an intermediary for the earlier, more limited, credit lines that Paris bankers had granted to the Bank of England since 1836 (see Lévy-Leboyer, 'Central banking and foreign trade'. On bankers' competition in credit lines to central banks during the 1850s see Flandreau, *L'or du monde*, pp. 186-8.

[30] Hottinguer was reported to have said to Curtis that if the hesitant banker (whose identity was not disclosed) refused to sign, others would follow suit. It would be interesting to know to what extent the centrifugal forces can be traced to the exclusion of Rothschild from the syndicate.

[31] Technically, the syndicate accepted that Barings would draw on them. Annuities (of a value greater than the credit line) were supplied as collateral. The credit line (which brought French banks a 'commission' on top of the interest rate) could be renewed after three months, unless French banks announced their refusal to extend it one month before maturity. The elements presented here (on the basis of Bank of England archives) may be compared with secondary sources in Viner, *Theory of international trade*, p. 274, and the references provided there. Viner also reported that additional help came from Hamburg (the other large silver market) and brought an extra £0.9 million.

this was hazardous in emergencies: discussions had been drawn out over a period of more than 10 days.[32] Indeed, while Curtis, in his final report, praised d'Argout's 'influence and zealous activity [that] contributed to bring the matter in hand to a favourable consideration at the Bank of France',[33] he also called for an institutionalization of the relations between the two banks, that would avoid the dangers of dealing with a relatively large body of bankers at once:

> I may also state that the circumstances of this negotiation and to which my visit may have partially contributed have elicited the expression of a great desire on the part of the Bank of France to be able to establish a direct intercourse and interchange of good services between the establishment and the Bank of England, and the hope that in the approaching renewal of their charter they may be able so far to modify its statutes as to enable it to effect that object by special prescribed power. Such an arrangement might be of the highest advantage to the Bank of England in freeing it in the first place from the necessity of applying to individuals on business when it may be desirable to operate on the foreign exchanges in the second, and therefore in giving greater facility to the intended action, from the powerful means it would place at the disposal of the Bank of England, and thereby from the immediate and unobserved influence which such friendly and confidential relations between the two establishments would tend to produce when the situation of either Bank might require the aid and assistance of the other.[34]

While Curtis's hopes for a modification of the Bank of France's charter did not meet with success, the general climate remained favourable, and the complementarity between silver based Bank of France operations, and gold based Bank of England's operations was again displayed during 1846-7. This episode was an almost perfect mirror image of 1839. In December 1846, the Bank of France faced a dramatic fall in its specie reserve, resulting from bad harvests which forced the import of wheat. The Conseil Général decided to undertake specie purchases as a way of avoiding a convertibility crisis.[35] Hottinguer was mandated as an intermediary and, not surprisingly, he called on Baring, whose bank had to

[32] Between 20 July (when it was decided that Curtis would travel to Paris) and 1 August when the treaty was finally signed. This suggests that Lévy-Leboyer, 'Central banking and foreign trade', may have exaggerated when he wrote, summarizing the episode: 'Drain was halted, thanks to the £2 million loan negotiated in Paris by T. A. Curtis . . ., the more easily as Continental markets were oversupplied with gold and idle funds after the 1838 run on Belgian Banks and the pause in railway construction'.

[33] Indeed, the Bank of England 'resolved that the cordial thanks of this court be presented to the Count d'Argout Peer of France and Governor of the Bank of France for the kind readiness with which he undertook to accompany Mr Curtis to Paris, with the view of facilitating the arrangement contemplated by the Minute of the Court of the 20th and of the great interest he evinced in the success of the negotiation' (Bank of England archives, G4/62).

[34] Curtis report, Bank of England archives, G4/62. Curtis concluded: 'The difficulties which I have been witness of in the negotiations to which the Report refers bring me to the conviction that it [the interchange of good services] is both expedient and desirable as soon as it is possible by the re-arrangements of the statutes of the Bank of France. No time should be lost in concluding upon terms of agreement with that establishment.'

[35] The Bank had apparently first considered sales of Rentes as a way to obtain gold. It was feared, however, that this would further deplete the reserve, so that a more direct operation was found preferable. See Say, 'Crise financière'.

organize a syndicate of London bankers that would supply silver in exchange for 5 per cent Rentes.[36] It was probably expected that Baring's substantial business with silver-based Asia and northern Europe provided reliable information on how and where to collect silver.

The act of 1844 allowed the Bank of England to use a measure of silver as a reserve asset (valued at market price), and in practice the Bank was in the habit of buying or selling silver with a margin on market price.[37] Moreover, the Bank of England had recently experienced a £1.5 million rise in its silver reserve.[38] Hence Baring thought of operating through the Bank of England. This sounded plausible, because the Bank of England (unlike the Bank of France) could also hold foreign securities, and might thus consider favourably the possibility of swapping a commodity asset (silver) against interest bearing assets (French 5 per cent Rentes).[39]

Indeed the Bank of England did respond favourably, offering to provide 30 million French francs. According to the archives of the Bank of France: 'When the governors of the Bank of England learned that the proposed transaction was for the account of the Bank of France, they reacted with much kindness toward Mr. Hottinguer, and even offered to lower their selling price for silver (which they had held up for some time at $60\frac{1}{2}$ [per oz. standard]) down to $60\frac{3}{8}$. In addition, they opened a 20 days credit line to give the Bank of France the opportunity to get silver at an even lower price, if shipments expected from Mexico permitted'.[40] The Bank of France finally took 25 million French francs. According to Juglar, in March 1847, shortly after the deal was struck, the Imperial Bank of Russia offered to purchase Rentes with gold for up to 25 million francs.

[36] Kindleberger refers to 3% Rentes, apparently in error.

[37] As described by Viner, variations of the gold-silver ratio in London were too small to compensate a rational speculator for holding large quantities of silver. Hence the Bank of England had sought to obtain the right of note issue on the basis of silver, i.e. to collect seigniorage as a counterpart of its providing extra liquidity to the silver market. The Bank of England, however, would stop this practice in 1850, with a minor resumption in 1860 as part of the swap with the Bank of France recalled below.

[38] Ashburton, *Financial and commercial crisis considered*, p. 38.

[39] It resembled the Bank of France, however, in that its statutes prevented it from discounting foreign bills.

[40] Archives de la Banque de France, 'Opérations avec les banques étrangères'. See also Flandreau, 'Les règles de la pratique'. The Bank's archives provide an answer to a question raised long ago by Viner: 'It would be interesting to know whether the Bank of France consulted with the Bank of England before engaging in this transaction, as it came at a most embarrassing time for the latter.' Viner's speculation reflects the confusion that can be found in the literature on that topic. This results from a general lack of evidence from primary sources forcing a reliance on speculative secondary sources. Viner who (incorrectly) assumed that the Bank of France had purchased gold, not silver, also wrote: 'It does not appear however that the Bank of England was a direct party to this transaction, and it, in fact, indirectly gave assistance to the Bank of France in that year.' Moreover, the account here helps to clarify Kindleberger, *Manias, panics and crashes*, p. 205. 'The Bank of France borrowed 25 million francs from British capitalists in the second half of 1846, according to French sources (Juglar, *Des crises commerciales*); a British source states that the sum was borrowed from the Bank of England itself in January 1847. At that point the emperor of Russia offered to buy 50 million francs of the French 3 per cent Rentes to assist in financing the heavy imports of wheat needed by France (and Britain). France benefited, since the French used half the money to pay off the British advance.'

This allowed the British to swap their Rentes holdings for gold.[41] Again, both Paris and London markets were eventually able to improve the liquidity of their market, thus avoiding a convertibility crisis.

Finally, it is hard to take the two episodes as illustrative of central bank cooperation, since help came in a context where monetary difficulties abroad did not have much domestic impact. It is clear that the good understanding between the two institutions was strongly influenced by the complementarities between the French and British monetary systems: each bank was attending to its own business. In other words, instead of reflecting the need to internalize the externalities generated by individual action, the good relations of the first half of the nineteenth century resulted from the limited spill-over between the two markets. Moreover, it is interesting to note that while central banks recognized in time that they could have similar interests, the successful dealings of 1839 and 1847 failed to institutionalize. This might have been partly related to the general political climate between the two countries, which was not overly favourable to such operations.[42] While the symmetry of the 1839 and 1847 episodes suggests that reciprocity could be expected, parliaments generally resisted. For instance, the 1839 episode was met with a French recommendation that assistance to the Bank of England should not be taken for granted in the future, and the renewal of the Bank of France's charter, on which the government had its say, did not bring the modification that Curtis had hoped for.[43] Opposition from the government certainly explains part of the secrecy surrounding the 1847 episode. Yet the importance of such resistance should not be over-emphasized. Government resistance to central bank cooperation had not proved insurmountable and it is precisely during the 1850s and 1860s (i.e. during the Franco-British 'honeymoon' that characterized the Second Empire and produced the trade treaties) that—despite the general 'good cordial understanding' between the two countries—central bank relations would begin to deteriorate.

III

The years of relative harmony were followed by a rather long period of conflict.[44] The transition did not take place overnight, but gradually. Yet in the mid-1850s a change was perceptible. The last instance of cordial

[41] Juglar, *Des crises commerciales*. My sources (either primary or secondary) do not fully explain whether the Baring syndicate held the Rentes and got silver from the Bank of England by discounting bills or whether the Rentes were in effect held by the Bank of England. This explains my prudent phrasing.

[42] See Flandreau, 'Les règles de la pratique', where the Bank of France's opinion of the 1847 episode is described.

[43] See the *Banker's Circular*, 19 Nov. 1841.

[44] The period that began with the Californian and Australian gold discoveries, instead of bringing about easier cooperation, opened a phase of violent disputes between the main European banks of issue. This comes as a surprise given that authors such as Kindleberger emphasized the part played as lender of last resort by new gold discoveries, since these brought extra liquidity to the system. However, Kindleberger also recognizes that 'In the 1850s international cooperation in crisis amounted to less' (*Manias, panics and crashes*, p. 205).

relations appears to have taken place in the spring of 1854. On 11 May the Bank of England raised its discount rate from 5 per cent to 5.5 per cent. The Bank of France, which at the same time was experiencing an upsurge in its bullion reserve, decided instead to lower its own rate, bringing it down (from 5 per cent where it had stood since January) to 4 per cent. While the move had not been coordinated or explicitly cooperative, Hubbard sent a telegram to d'Argout thanking the Bank for its action.[45] Cottrell has made much of this,[46] but it appears that the French decision had been motivated by domestic factors: the considerable improvement in the Bank's reserves along with political pressure from the French public and government to keep to the 4 per cent long-run target certainly proved decisive.[47] Yet the episode suggests that the central bank's interest in monetary developments on the other side of the Channel was growing.

Hostilities started soon afterwards, at precisely the time when Paris (as a result of its bimetallic system and of the California gold discoveries) started to operate on a predominantly gold basis.[48] In the late summer of 1855, the Bank of France found itself with a rapidly declining reserve and sought gold loans to support it without raising its discount rate. The operation was organized secretly with French bankers, suggesting that the Bank of France felt that the capital of good relations was not large enough to induce the Bank of England to help, or that London might be less willing to lend its reserve asset than it had been to tender silver in the past. In August 1855, the Bank of France asked a number of French banks and bullion dealers to collect bills of immediate usance payable in London. These banks had their correspondents cash the bills and send gold to Paris. This move failed to provide any durable relief. In late September, the Bank thus tried to expand its borrowing. But as the supply of sight bills declined, it turned to collecting bills of longer maturities, and having correspondents discount them. This, of course,

[45] The 11 May letter read: 'M. le Comte, à deux heures aujourd'hui j'ai communiqué par télégraphe l'intelligence que nous avions haussé le taux de l'escompte à 5½% et à 3 heures et quart, j'ai reçu la nouvelle que la Banque de France avait *baissé* le taux d'escompte à 4%.' (Bank of England archives, Cou/610, Hubbard to Comte d'Argout, 11 May 1854). Cottrell, 'London, Paris and silver', has based on the 1854 episode the view that central bank cooperation of the pre-1848 kind extended to the 1850s. According to Cottrell: 'Co-operation between Threadneedle Street and the Rue des Petits Champs was not a new development. . . . By the early 1850s co-operation, at least of an intermittent form, was a well-established practice. The two banks exchanged information and by 1854 telegraphed each other news of changes in their discount rates on a regular basis' ('London, Paris and silver', p. 132). This seems a little exaggerated: the telegraph between Paris and London was established only in 1852, and between 1851 and 1854 four changes in the Paris Bank Rate had taken place: there had not been much scope, in any case, for telegraphing each other 'on a regular basis'. Moreover, there is not much evidence, beyond the letter of May 1854, of 'regular' flows of information between the Bank of France and the Bank of England.

[46] Cottrell, 'London, Paris and silver'.

[47] Indeed, May was characterized by an improvement in both gold and silver reserves in both Paris and the Succursales (Flandreau, *L'or du monde*, p. 361: almost £2 million was gained!).

[48] Flandreau, *L'or du monde*. At the same time, however, silver dominated in other regions.

was bound to provoke a fall in the reserves of the Bank of England, by increasing the demand for credit in London.[49]

Not surprisingly, the Bank of England reacted to the drain that it experienced by raising its discount rate from 4.5 per cent to 5 per cent on 1 October, and again to 6 per cent on 6 October.[50] While the press linked the Bank of England's moves to the Bank of France's 'secret' operations, the British monetary authorities tried to minimize the conflict. In a message (dated 9 October) to the governor of the Bank of France, Weguelin emphasized that both past relations and current necessities impelled the two banks to 'unite their strength' rather than to fight. The outflows of gold from the reserves of both banks had, according to him, one single cause, namely the foreign expenditure of the French and British governments in waging the Crimean war.[51] The interest rate rises by the Bank of England had not (he claimed) been caused by the Bank of France's operations, but merely resulted 'from the increased demand for gold made upon [the Bank of England] at a moment when her available resource was on the decline' (but what was the effect of the Bank of France's secret operation if not precisely *increasing the demand for gold made upon the Bank of England*?)[52] Weguelin concluded with a call for intensified exchange of information, a clear indication that the Bank of England was not overly happy about the secretive behaviour of its French counterpart: 'If the Bank of England, M. le Comte can at any time provide you with information which you are desirous of knowing, I need not inform you of the perfect readiness with which it will be given'.[53]

The Bank of France apparently tried to use this overture to seek the Bank of England's active assistance, and the Belgian press mentioned that Charles de Rothschild (a member of the London family) had con-

[49] In London, it was quickly realized that the Bank of France was behind the drain that was taking place on the gold market. The identity of the intermediary was debated in the press: *The Times* argued that the first contract had been achieved by Saint Paul. According to the *Daily News*, the first contract was with Raphaël which would have declined a second one then taken by the Rothschilds. See Flandreau, *L'or du monde*, pp. 177-80.

[50] 'The unsettled state of our financial relations, produced to a great degree by gold purchases on account of the Bank of France, has naturally directed attention to the mode in which these operations have been carried out. At first, the severe drain caused by heavy remittances to Paris was attributed to other influences than those immediately connected with this movement, and Russia, as well as Austria, were alleged to be draining from us supplies of the precious metals to recruit their own exhausted resources. It is now, however, ascertained, that the great bulk, if not the whole of the bullion taken from the Bank of England and the public market, is for the Bank of France, whose specie reserves have latterly experienced a great and continuous declension. . . . Some small portion of gold and silver may have gone through Hamburg and Amsterdam to St Petersburg, and in the two former places sales of securities may have been arranged to augment the supply; but it is not probable that any large amount will be found to have disappeared through those channels, although it is understood that the Csar requires material assistance and would be only too glad to negotiate a loan for a much higher sum than he could ever hope to raise by these surreptitious means.' (*Banker's Magazine*, pp. 681-2)

[51] The French, by contrast, believed that a large portion of the drain was internal (see Flandreau, *L'or du monde*).

[52] Bank of England Archives, Cou/610. Weguelin to d'Argout.

[53] Ibid.

tacted the governors of the Bank of England.[54] Its archives indeed show that James de Rothschild and his son Alphonse (newly appointed Régent of the Bank of France) met the governor of the Bank of England, with a letter from d'Argout, asking to borrow between £2 million and £3 million in gold. In his reply to d'Argout, Weguelin politely but firmly refused to provide help, lecturing the French on the act of 1844, which, alas, prevented the Bank of England from using its reserve to support foreign currencies.[55] 'Allow me to add', he concluded, 'that it would have given me the highest satisfaction, if I could have had the mean[s] of conducting an arrangement in favour of the Bank of France similar to that in which the Bank of England was indebted to its assistance in the year 1839'.[56] Clearly, the British had failed to take advantage of the first 'pure' opportunity for cooperation. Indeed, the only reason that could have led the Bank of England to help its French counterpart was not, as in the past, the advantage of disposing of sterile silver (i.e. silver which produced no interest), but rather the positive consequences that providing France with gold might have had for England.

With cooperation out of the question, the fight for gold appeared to be the only solution, and the Bank of France replied in kind, raising its discount rate from 4 to 5 per cent and subsequently to the 6 per cent ceiling to meet the British policies.[57] At the same time, it kept borrowing gold on an even greater scale. Contemporaries clearly perceived that these moves had offsetting consequences, leading each bank to further action. In London, for instance, Bagehot remarked: 'Few persons venture to anticipate that the export of gold will be stopped by the present further rise in the value of money, but it is generally considered that a wholesome influence will be exercised in that direction, *although the movement of our bank is to a certain extent counteracted by that of the Bank of France*.'[58] And so the efforts of the Bank of France were counteracted by those of the Bank of England especially because the latter did not limit its action to interest rate hikes but reportedly sought to discriminate against the

[54] *Indépendance Belge*, 21 Oct. 1855, reported in Plessis, *Politique de la Banque de France*. Charles de Rothschild was in charge of the London Mint, which was one more reason for having regular contacts with Rothschild Frères.

[55] 'Sir, We had the honour of receiving from the hands of M. le Baron James de Rothschild who was accompanied by his son M. Alphonse de Rothschild your letter of [12 this month?]. I beg to assure you that nothing could be more [acceptable?] to the Bank of England than the [tone?] of this communication and the intermediary that you were good and [right?] to choose. . . . [We discussed?] the possibility of co-operating with the Bank of France in financing £2 or 3 million of bullion. By the Act of Parliament which regulates the issue of Bank of England notes, it is practically speaking incumbent on the Bank of England to maintain, under all circumstances, a stock of about £9 million in bullion, [plus?] the actual amount with which the Bank has to deal to all financial purposes, and at a moment of considerable mercantile excitement, a figure of about £2.5 million. This position, without further aggravation is one of so much insufficiency that the board of directors has today decided to raise the rate of discount to 6 per cent for bills having not more than 60 days to run, and for those exceeding that term and under 95 days to 7 per cent. This restriction has come without reference to the purposed operation of the Bank of France, which was not communicated to the board' (Bank of England archives, Cou/610, Weguelin to d'Argout).

[56] Ibid.

[57] Bagehot, 'Gold purchases', p. 681.

[58] Ibid. (italics added).

class of bills that the Bank of France had bankers purchase and discount abroad.[59] The competitive equilibrium was undoubtedly being reached.

Yet, with no room for further interest rate increases, and England's refusal to cooperate, the situation of the Bank of France was becoming critical. But the position of the Bank of England was no better, as its reserves were repeatedly raided. The counter-productivity of this equilibrium was identified by some economists who started to advocate a cooperative outcome. Bagehot spelled out the basic argument for an informal international lender of last resort: 'In the present cordial good understanding between France and England, it becomes the duty of both, to unite their strength in every way, not to divide it. *I have often thought that an intimate correspondence upon emergencies between the two Banks of France and England might be beneficial to both*; and if the existing charters of either do not now admit it, an alteration or power to accomplish that object might be given for their mutual advantage'.[60] In retrospect, Bagehot's analysis sounded like a sad echo of the hopes that the Curtis report had raised.

Thus the Bank of France kept purchasing gold on an extensive scale in 1856 and 1857.[61] It did so in the face of fierce criticism from the British public and financial press, which portrayed the Bank of France's refusal to move its discount rate beyond 6 per cent as not legitimate. These attacks sounded paradoxical, since in the past the Bank of England had been quite happy with attempts by the Bank of France not to move its discount rate. They were also unfair, for without help from England and with no possibility of raising the discount rate further, the Bank of France had no other choice than to seek gold advances at a rate at least as high as the fall in its reserve. They were finally unsound, because from a legal perspective, the Bank of France faced no other choice. Yet it remains the case that the policies of the Bank of France (this 'dangerous and losing game' as a correspondent of *The Economist* described them)

[59] Interestingly, Newmarch and Tooke regarded this attitude as sophisticated. This is indicative of the non-cooperative state of mind that prevailed at the time: 'The directors of the Bank of England were not backward in protecting their own establishment, not merely by raising the rate of discount in order to render the Paris operations more costly; but also by adopting other precautions against the class of bills known or believed to be employed as a means of artificially withdrawing gold to the Bank of France': Newmarch and Tooke, *History of prices*, VI, section 20: 'System pursued by the Bank of France in 1855-56 for the purpose of procuring temporary artificial addition to its bullion reserve'.

[60] Bagehot, 'Gold purchases', p. 684. The article was signed W. B., but the flavour of the argument is more than a hint. Bagehot was discussing the views of 'one writer, whose opinion on any financial question would at all times command attention'. A similar tone may be found in the following quotation from Somers (quoted in Viner, *Theory of international trade*, p. 275): 'The manner in which the various commercial nations deal with the great mediums of exchange seems dictated by caprice rather than by any intelligent principle, and so far from adopting some general system in the interests of all, their monetary policy is conceived in hostility one to another.' However, Viner argued that in this specific case what Somers termed monetary policy was the choice of a monetary regime, rather than day-to-day operations, i.e. 'policies about structures' rather than 'policies within structures' (ibid.).

[61] On the self-defeating effects of these measures, see Flandreau, *L'or du monde,* ch. 5.

could work only if the Bank could induce Paris bankers to tighten credit, which it did to some extent.[62]

Relief was finally provided by the removal in France of the interest rate ceiling. This occurred in the midst of the 1857 worldwide financial crisis which European central banks entered in a totally uncoordinated manner. While the monetary difficulties of the past two years had led the Bank of France to be relatively prudent and thus comparatively better prepared than other banks, it was certainly not ready to help London out, and in October 1857 the Bank of England had to suspend the act of 1844.[63] The regime of credit rationing and occasional foreign support was giving way to a new period of competitive interest rate increases.[64]

Failure of cooperation between France and England was accompanied by more cordial, if occasional, relations within the periphery of the silver bloc, between Hamburg and Austria. During the 1850s, Hamburg had become the main intermediary in trade between northern Europe and England, granting credits to Scandinavian or north German importers from England. With the advent of the crisis, Scandinavian importers were caught short of being able to pay back their credits. Hamburg houses that had accepted bills were now called upon to take up their acceptances. Insolvency threatened.[65] Bankers thus turned to the Bank of Hamburg to cash their bills, and its reserves collapsed. Suspension of specie payments was under way.

Help was first sought from Berlin whose market was closely related to Hamburg, but the Bank of Prussia (itself caught in the crisis) refused to provide specie—still another example of failure of cooperation.[66] Rescue came from Vienna. After years of unbalanced budgets and seigniorage finance, Austria was in a regime of inconvertible paper and fluctuating exchange rates, which partly insulated it from shocks on convertible countries: the specie reserve of the Bank of Austria was thus useless and could be profitably used in foreign support: 10 million marks *banco* in silver were lent by the Austrians (presumably through a transfer of bonds) to the Bank of Hamburg. A train (the *Silberzug*) was sent to provide relief and, simply by its arrival, calmed markets down.[67] The loan was immediately absorbed by the houses worst affected by the initial pressure

[62] Flandreau, 'Les règles de la pratique', studies the informal regulation of the money market that the Bank of France was able to implement.

[63] On the more limited impact of the 1857 crisis on France than on other countries, see Evans, *Commercial crisis*; and Juglar, *Des crises commerciales*.

[64] The change in monetary policy was not confined to France. Other continental countries such as Belgium also modified their interest rate laws in the aftermath of the 1857 crisis.

[65] As Evans wrote: 'soon discount became impossible, and so completely had the bill of exchange . . . lost its value in the estimation of the public, that a payment in hard silver was regarded as alone legitimate': *Commercial crisis*, p. 39.

[66] Juglar, *Des crises commerciales*, p. 493. According to Böhme, *Frankfurt und Hamburg*, support was also sought from Paris, London, Amsterdam, Copenhagen, Dresden, and Hanover. All declined to help.

[67] Kindleberger, *Manias, panics and crashes*.

and a general collapse was avoided.[68] Again, what might look like cooperation was in fact the successful investment of specie holdings, by the central bank of a country with inconvertible paper currency.

The record of the 1860s was no better, although the decade seemed to open with a ceasefire, brought about by the swap of gold and silver that was decided in November 1860 between the Bank of France and the Bank of England. The deal had been engineered by the British, in the wake of persistent gold purchases by the Bank of France on the London market. Tensions on the London money market were becoming acute as the gold drain to France was supplemented by a silver drain, for Europe then experienced recurrent deficits against silver-based India and China. This was creating substantial difficulties for the City, which played a key role in mediating between Asia and Europe.[69] The British observed that the Bank of France, which was fighting to increase its gold reserve, also held a sterile silver reserve which could not be used in payments without triggering a run because silver was now undervalued in Paris.[70] The Bank of England thus realized that a swap might be possible, and would temporarily check French attempts at draining gold from London. It offered the Bank of France an exchange of 50 million French francs in silver for 50 million in gold. The way the French were approached, however, helps to portray the atmosphere of distrust in which these dealings occurred. A message was sent to the Conseil Général stating that if the French asked for a swap, the British might accept. The Bank of England had found a way to mitigate the bully's action by waving a red rag in a direction that suited London, but it did not want to beg.[71] The British had correctly anticipated the Bank of France reaction: indeed, the French jumped at this opportunity to improve the composition of their reserve. The deal, initiated in the last weeks of 1860, was carried out until mid-1861.

This operation was accompanied or followed by a number of similar deals with other institutions. Throughout 1861, the Bank of France kept reducing its inconvenient silver reserve, swapping it with the Italian Banca Nazionale (9 million francs) and the Imperial Bank of Russia (31 million francs).[72] Yet contrary to what has often been argued,[73] these operations had nothing to do with the basic motive of the cooperative model. Swaps did not result from the enlightened perception that they provided some

[68] Once the dust settled, London provided complementary relief to the Scandinavian money market. A second loan of 5 million marks *banco* was provided on 29 December: Pressburger, *Oesterreichische Notenbank*, p. 91.

[69] Hughes, *Fluctuations in trade, industry and finance*.

[70] Flandreau, *L'or du monde*; Kindleberger, *Manias, panics and crashes*.

[71] Cottrell rightly emphasizes that the existence of intermediaries with insider information on the difficulties faced by both banks proved essential in the scheme. See e.g. the letter of 4 Dec. 1860 (B. Dobree to Germiny): 'Permit me to say that the presence of your colleague M. Charles Mallet tended largely to bring about a speedy and happy termination of the mission.' However, Cottrell is wrong to analyse the operation as evidence of cooperation.

[72] Plessis, *Politique de la Banque de France*, also mentions the purchase of 15 million French francs in gold from the Banque d'Amsterdam, the Dutch 'central' bank. The deal with the Bank of Russia took place between January and June 1861, that with the Bank of Italy in August-September 1861.

[73] Cottrell, 'London, Paris and silver'; Kindleberger, *Manias, panics and crashes*.

kind of public good. As a matter of fact, the operation with the Bank of Russia (whose intermediary was Banque Dutfoy Kinen) almost failed when the Czar attempted to block it, apparently for political reasons.[74] This led the Bank of France to carry on its swaps with private banks, such as Rothschild Frères (which had acted as intermediary for the Bank of England-Bank of France exchange): in these latter instances, the Bank of France was selling the appreciated metal to the bankers in exchange for coins made of the depreciated metal, thus sharing with them the benefit of the arbitrage with private bankers.[75] That the Bank of France performed essentially similar operations with both private and central banks shows that such dealings are appropriately described as those of merchants who find mutual benefits in exchanging assets, rather than as landmarks of international fraternity: indeed, aside from its possible macroeconomic impact, the swap with the Bank of England had brought an arbitrage profit of 8,919 French francs. This was clearly perceived by contemporaries who, as in *The Times* of 22 November 1860, merely saluted 'an act of simple courtesy'.

But while it might have been that the Bank of England had to some extent hoped that the 1860 swap would serve as a first step in a return to cooperation, the Bank of France renewed its raids immediately after the swap was completed. In the second half of 1861 and again in 1864 it went back to its old tricks, purchasing London bills through a number of French banks and then using those bills to acquire gold.[76] In addition, between October and December 1861, it used a sterling credit line granted by a number of French banks (Rothschild, Fould, Mallet, Pillet-Will, and Durand) to intervene on the foreign exchange markets in order to foster gold imports into France.[77] As in the past, the continued purchases by the Bank of France repeatedly led the Bank of England, once the cause of the drain was identified, to raise its discount rate, thus forcing the Bank of France to follow suit.[78]

After 1865, the tension on the Paris market receded. The reserve of the Bank of France surged. Increased silver production led to an inflow of that metal to France, thus again limiting the sensitivity between the two markets. But the conflict of the previous years had led each bank to disregard its counterpart's difficulties: the 1866 Overend Gurney panic was met with splendid indifference by the Bank of France, although the abundant liquidity of the Paris market at the time might have rendered

[74] Flandreau, *L'or du monde*.

[75] On these operations, see ibid.

[76] Ibid.

[77] See Plessis, *Politique de la Banque de France*, pp. 245-6. The credit line allowed the Bank of France to draw indirectly on the London correspondents of the French banks (notably Barings and Hambro) for up to 50 million French francs. Plessis reported that the scheme did not cause great concern to the Bank of England. In fact, only 10 million French francs were actually used, causing a mild depreciation of the sterling exchange rate. On the French side, some argued that these interventions could not have any effect because market participants expected the sales of sterling to be followed by sales of francs when the Bank of France would have to close its position. Flandreau, *L'or du monde*, develops a similar 'Ricardian view' of central bank interventions.

[78] This mitigates the claim by Plessis that the gold-silver swap with the Bank of England brought the '*guerre des banques*' to an end.

cooperation feasible. Indeed, the Bank of France then enjoyed reserves at a record level. From the total absence of evidence of official contacts in both archives and newspapers, it seems that the British did not care to ask. As for the French, they did not bother to propose.[79] This was certainly not cooperation.

The early 1870s were characterized by important transformations in the shape and structure of the international monetary system, but non-cooperative patterns seemed to persist. Germany's 1871 decision to move to gold and exploit France's bimetallic system as a way of disposing of its silver Thalers in exchange for gold led the French administration to retaliate by limiting silver coinage.[80] However, with the proceeds of the war indemnity that Germany had imposed on France and which had been paid mostly through international bills, Germany had in any case acquired the means to get gold from London, either by directly discounting British bills in London, or by acquiring British bills in exchange for Dutch, German, or Belgian ones and then getting gold from London.[81]

Although the Bank of Prussia (which was in charge of these operations) attempted to obtain gold indirectly through purchases in the open market (rather than buying bills and discounting them at the Bank of England), London soon experienced the effects of Germany's policies. Indeed, since the Germans were bidding for gold, fewer deposits were made at the Bank of England, thus rendering the reserve more sensitive to other withdrawals.[82] This became especially perceptible when the growing financial distress in the United States developed during the autumn of 1873, bringing a second source of drain. As a result the Bank of England raised its discount rate to check current demands, domestic and foreign.[83] The effect of these increases (which the Bank of England was ready to push as high as 9 per cent in mid-November) was quickly felt.[84]

[79] Interestingly, partisans of the bimetallic system in France would use the crisis of 1866 as evidence of the superiority of France's monetary system to Britain's gold standard.

[80] Flandreau, 'French crime of 1873'.

[81] See e.g. *The Economist*, 23 Aug. 1873: 'If that government [Germany] wants gold from this market [London], it can take it quite independently of the general exchange account between this country and the rest of the world. It can take it by means of the proceeds of the indemnity . . . which will provide for what is required.'

[82] According to *The Economist* (23 Aug. 1873), the Germans '[avoided] a direct withdrawal from the Bank but [bought] bullion in the open market to such an extent as to prevent any influx into the Bank, so that a slightest demand from other quarters is afterwards sufficient to produce a great effect.'

[83] '[Germany] is bidding actively against us for the supply of bullion in the markets of the world. We have to pay more than usual to attract money from abroad, because abroad that same money is wanted more than usual': ibid., 8 Nov. 1873. It seems that the Bank of England adjusted its interest rate on the basis of the expected permanent demand that it would face: 'We do not say the [German] demand [for gold] will revive, but it would be prudent to expect it and provide for it. . . . We must remember that its demand will assuredly recur before long, and as soon as better times arrive': ibid.

[84] 'The operation of a high rate of discount has never been seen more clearly than during the past week. The effect, like that of all rises in price, is intensified by the electric telegraph: every country which has money is now instantly warned that money is very valuable here, and every country which is likely to draw money from here is also warned how costly an operation will be': ibid., 15 Nov. 1873. Thus it is possible to get gold not only from the continent but also from Australia and Canada.

These moves seem to have led the Bank of Prussia to moderate its purchases for fear of adverse effects that the German market might have to suffer as a consequence of massive rises in the discount rate. As *The Economist* described it: 'The German money market is already exceedingly perturbed, and it quickly sympathises with ours here. If, therefore by a sudden demand for a large sum of gold the German Government were to cause a perturbation [in London], it would soon find that it had inflicted great difficulties on its own people, and it would be greatly blamed. We may be sure, therefore, for the present that this government will not act rashly'.[85] And again a few weeks later commenting on the decisions to limit gold purchases it said: '[Purchases have] almost avowedly been suspended from a desire not to hurt the English money market and through it the German. If the Berlin Government had taken £1,000,000 of gold a fortnight ago (and it possessed cash and securities by which it could easily have done so) the first result would have been a panic here, and the second a recoil in Germany, which would have caused vast evil there. To avoid this, the Berlin Government suspended its operations; but it may be taken for granted that it has only suspended them'.[86]

Again, the whole episode had nothing to do with the cooperation story. In fact, cooperation was explicitly rejected by the main actors: for instance, Kindleberger reports that the Bank of England was at the same time dismissing the 'ridiculous rumour' that it had thought of applying for a loan to the Bank of France.[87] Similarly, the Germans, instead of learning through Bank Rate about the Bank of England's decided policy, might have preferred to coordinate directly with London. Indeed they suggested a reserve pooling solution: they offered to provide the Bank of England with an automatic credit line that would give greater security to the London market, thus moderating interest rate increases there. But the German overture, which is recalled by Clapham, was met by rebuttal: 'The Bank is not nor has it been in want of such aid and need not avail itself of the arrangement you so kindly suggest'.[88]

In conclusion, the spread of the gold standard, in the 1860s and early 1870s, far from starting a heyday of central bank fraternity, sounds more like the rehearsal of the difficulties of the interwar years. The prevailing spirit was one of competition, not of cooperation. But this was hardly surprising, because the spread of the gold standard also meant that with more countries on gold, sensitivity to foreign shocks was bound to increase, not recede. In fact, this view had been the theme of Disraeli's Glasgow speech, where he blamed the golden sirens who, by popularizing the (to him, wrong) idea that a gold standard regime was desirable for the world at large, had led to the current dramatic increases in Bank

[85] *The Economist*, 8 Nov. 1873.
[86] Ibid., 13 Dec. 1873.
[87] Kindleberger, *Manias, panics and crashes.*
[88] Ibid.

Rate.[89] Disraeli certainly perceived that a common specie standard, by increasing the substitutability between national monetary assets, might render competition even more frequent.

Yet contrasting the Anglo-French disputes of the 1850s and 1860s with the Anglo-German struggle of the 1870s also reveals a change of climate. Indeed, while the Bank of England had appeared unable to dissuade the French from raiding London gold, it had successfully deterred the Germans from behaving precipitously. To some extent, the German attempt at moderating its gold purchases in order to avoid hurting London and, in return, Berlin is not inconsistent with a kind of unilateral cooperation of the Stackelberg type, i.e. the Germans chose their policy by taking into account London's reaction. The resulting equilibrium, while obviously not mutually cooperative, was not fully competitive either. And, as will be shown, this state of international monetary relations would be characteristic of the heyday of the gold standard.

IV

The disputes of the 1850s, 1860s, and 1870s were followed by a long period of mutual neglect. The French crash of 1882, which resulted from stock market speculation, left other centres relatively untouched, and in fact did not really threaten convertibility either at home or abroad. Occasional difficulties in the late 1880s in France and in England were dealt with separately. International monetary action had to wait until 1890 to experience some revival in the midst of the collapse of Barings.

Before disclosing the position of Barings, the Bank of England made a number of international arrangements. In particular, it obtained £3 million (approximately 75 million French francs) in gold from the Bank of France and £1.5 million from the Bank of Russia. The French help came through the discounting of British bills, and since the Bank of France could not directly discount foreign bills, the Rothschild bank was used as an intermediary—ironically, as Barings had performed this role in the past.[90] France's short-term advance was renewed until Febru-

[89] *The Economist*, 13 Dec. 1873: 'The cardinal fact is that which Mr Disraeli admirably popularised at Glasgow, the operations of the German Government have caused a scarcity of gold throughout the world; and as almost all the large financial business in the world is transacted in gold this scarcity causes incessant difficulty; and as also the whole banking community have much to pay—that is, are under a heavy contract to deliver gold if required—there is a difficulty in finding gold enough to maintain a reserve in support of the obligation, and credit is strained in consequence. For the moment, Germany is not buying gold in the market. . . . But as far as is known or is probable, her coinage of gold is not nearly at an end.'

[90] Rothschild archives, Paris, 132 AQ 122. See also *The Economist*, 15 Nov. 1890: 'Early in the week, it was announced that arrangements had been made by which its stock of gold would be increased by £3,500,000. Of this amount £1,500,000 has been obtained by the sale to the Russian Government of Treasury bonds held by the bank, while through the good offices of Lord Rothschild, the Bank of France has agreed to lend the Bank of England £2,000,000 of gold for a certain definite time. The transaction with the Bank of France is supposed to have taken this shape because that institution is debarred by its statutes from buying securities in the same way as the Russian Ministry of Finance has done; but, be that as it may, the French institution has manifested an accommodating disposition in regard to the loan, which has been made on very reasonable terms.'

ary 1891, when it was finally repaid.[91] According to Patron, the 75 million French francs provided by the French were enough to reassure markets and were never actually *used*.[92] They supposedly made the return journey in unopened boxes.

As had been the case before 1848, the help provided in the Baring crisis was met by political resistance. As Kindleberger describes it, William Lidderdale (governor of the Bank) and the City had been uneasy about asking for Gallic (and Russian) support. Kindleberger quotes Clapham: 'Suppose that for some political-financial reason, they had been unwilling to oblige?'[93] On the French side, the operation resulted in hostile interpellation in the chamber of deputies. But the minister of finance replied that such help had been necessary to prevent harmful repercussions for France of a deeper crisis in London.[94] This rationalization was reminiscent of the logic that had led the Germans to moderate their gold purchases in the early 1870s.

To some extent, the Baring episode was a transition between an old regime and a new one. While opening a period of more regular contact, it also seemed reminiscent of the pre-1848 instances where interventions had to operate through the agency of one or several international bankers.[95] This type of indirect arrangement, however, while still mandatory because of the legal restrictions that limited the ability of leading central banks to develop international business, would be simplified gradually as central banks introduced measures that facilitated direct interventions in foreign markets.[96] This movement has to be related to a worldwide trend in the international monetary system, by which an increasing portion of central bank reserves were held in foreign bills.[97] While this might have been motivated initially by a desire to save on non-interest bearing gold holdings,[98] it certainly also reflected the perception that diversifying the reserves' components might limit international conflict.

This evolution took a specific turn in the case of France, for its central bank had accumulated a considerable amount of gold, allowing it to adopt a countercyclical policy, letting gold flow out in periods of international monetary unrest, and getting gold back when pressure receded. Such policies were further facilitated by France's monetary system, a

[91] Sayers, 'Supposed continental support', argues that the Russian loan had been repaid at about the same time.

[92] Patron, *Bank of France*.

[93] Kindleberger, *Manias, panics and crashes*, p. 208; Clapham, *Bank of England*, 2, pp. 329-30, 344.

[94] *Journal Officiel, Débats Parlementaires*, 5ème leg., session ordinaire, 1891, I, p. 16 ff.

[95] Although, as suggested by the Rothschild attitude during the 1839 episode, this help could be subordinated to complex strategies between competing banks. See Governors' statement, 20 Nov. 1890: 'The Bank is greatly indebted to Messrs N. M. Rothschild & Sons for using their influence with the Bank of France to induce the governors to part with so much gold, and for the assistance they gave in carrying out the transaction of the specie': Bank of England archives, G4/113.

[96] Flandreau, 'Was the Latin Union a franc zone?', argues that it was the reluctance of the Bank of France to discount foreign bills that caused the smaller integration of the Latin Union members' money markets between 1860 and 1880. By contrast, the Bank of Belgium and, more generally, the central banks of smaller states, did discount foreign bills on a regular basis.

[97] Lindert, *Key currencies*.

[98] Eichengreen and Flandreau, 'Geography of the gold standard'.

bimetallic regime by law, but a gold standard in practice, with the Bank of France being able to sell gold at varying prices: this setting permitted the Bank of France to avoid using the discount rate on a regular basis. To a certain extent, the Bank of France found itself (although for different reasons) back in the pre-1855 situation. As a result, it began repeatedly to help out foreign banks, central or commercial, either through discounting or by not tightening credit when French banks were lending abroad.

Such actions began in 1898 when the Bank of France agreed with the Bank of England to provide German private banks with gold as a way of easing the pressure in the Berlin money market.[99] In 1902 and 1903, the Bank of France decided, this time unilaterally, not to react when gold was shipped abroad. According to Billoret, this experiment marked a psychological upheaval in the Bank of France's position regarding the international effects of its domestic policies.[100] The Bank's annual report for 1903 mentioned that 'by letting a few dozen of millions flow out (this representing a tiny fraction of our reserve), we could manage to avoid a more substantial loss, a tightening of the London money market, and through the solidarity of financial centres, an eventual increase of our discount rate'.[101] Again, the same motivation that had led the French to provide gold in 1890 seemed to prevail, suggesting that co-operation was once again unilateral.[102]

Interestingly, the Bank of France would come to reiterate these policies: between 1906 and 1910, and again in 1911, it supplied gold to London on a regular basis, through the channel of direct discounting of British bills. And this was accompanied by a remarkable change in the Bank's statutory constraints: foreign bills discounting, at first tacit, became official policy in 1909, and statutory in 1910.[103] This new breed of interventions acted at two levels. First, by standing ready to discount foreign bills, the Bank of France could behave as an international lender of last resort, holding its discount rate for foreign bills lower than the foreign rate of the market on which they were payable. Second, by active open market interventions (e.g. in 1906, 1909, 1910), the Bank of France could help to contribute to the fine tuning of the global money market, thus reducing the risk of a panic.[104]

The crisis of 1907 illustrated the full thrust of the machinery at work.

[99] See Billoret, 'Système bancaire', pp. 442-54. See also *Revue d'Economie Politique*, XIII (1899), p. 165; Bloomfield, 'Monetary policy under the gold standard', p. 57.

[100] Billoret, 'Système bancaire'.

[101] Banque de France, 1903 annual report and accounts, p. 5.

[102] However, Sayers, 'Supposed continental support', p. 113, emphasized that the Bank of England never *asked* for French help.

[103] See Archives Rothschild for some elements of the technical aspects of foreign bills discounting. In England the Bank of England could and did hold foreign securities, but no bills. 'Opinion of Freshfield that there is no law against the Bank discounting or investing in Foreign bills or securities: it is a question of policy and not of law', 17 July 1867, Bank of England archives, book 3.13.

[104] For instance, in 1906, the Bank of France discounted £3 million in English bills at a rate 1 point above the Paris bank rate, but below the London rate. Contrary to Sayers, 'Supposed continental support', Billoret argues that this was done at the request of the Bank of England ('Système bancaire', pp. 452-3).

When the pressure from New York became acute in the autumn, the Bank of France supplied London with 80 million French francs in gold Eagles. At the same time, the Bank started heavy discounting of London bills, which it took at a lower rate than Bank Rate in England. While this allowed the Bank of France to make a profitable investment in sterling bills, it also contributed to calming the storm that threatened to extend to the French monetary system.[105] Similarly, the Bank of Austria (whose gold standard was more flexible as that country did not adhere to strict gold convertibility) was helping the Reichsbank to weather the consequences of the international monetary crisis.

It is disturbing to find the Bank of France as the 'Stackelberg' leader of the international gold standard: conventional stories of the period usually feature the Bank of England in that role. And indeed, while the French claimed proudly that they were responsible for global stability, a fraction of the British public even denied that the Bank of France ever provided support.[106] Yet this conclusion is perhaps less surprising if we recall that the 'Stackelberg' leader gains less than the 'follower'. In other words, a powerful hegemon might be expected to force other players to adopt unilateral support policies, while itself not behaving in a cooperative fashion. A leading power is not necessarily the benevolent player portrayed by those who emphasize the role of international public goods: by behaving as a Stackelberg 'follower' the hegemon is able to reap more gains than the other players. The burden of cooperating in this case is placed upon less powerful members.[107]

Consider, for instance, a country (England) that places a smaller weight than other players on the adverse effects of interest rate hikes. It is clear that this country will be ready to push its discount rate much higher than other countries, thus deterring them from moving towards competitive policies: if this country is prepared to raise interest rates as high as necessary, while others are not, it will be able to lead these to tender their gold and behave as 'Stackelberg' leaders. These 'leaders', however, are really implementing unilateral policies that benefit the non-cooperative hegemon. If in addition, some competitor (France) holds so much gold that temporarily losing some of its reserve is comparatively inexpensive, unilateral support, with that country supplying bullion to the hegemon, is a natural way out of the competitive equilibrium. I believe that this was exactly what Sayers had in mind when he claimed that the 1907

[105] Significantly, while Eichengreen has made this episode the focal point of his cooperation thesis (*Golden fetters*, p. 52), Sayers argues that helping England was actually in the interest of the Bank of France which could thus 'pose very gracefully as a fairy godmother' of the international monetary system ('Supposed continental support', p. 115). However, it must be recalled that the cooperation thesis predicts that if only one player adopts a cooperative attitude he will lose from that. This is the essence of the free-rider argument. Obviously Sayers and Eichengreen did not have the same model in mind.

[106] See Sayers, 'Supposed continental support', where the existence of a 'continental' support to the Bank of England is examined with a touch of doubt.

[107] Note that this is known by political scientists as the 'coercive strand' of the hegemonic theory: see Snidel, 'Limits of hegemonic stability theory'.

episode really reflected the Bank of England's ability to induce other central banks to tender gold.[108]

This clearly shows that the 1907 crisis was not the prelude to a period of increased cooperation. Rather, it reflected that (contrary to what had happened in the 1850s and 1860s), the Bank of France did not feel like challenging the Bank of England. True, the visions of people such as Luzzatti who campaigned for some kind of institutionalization of the ad hoc cooperation that had taken place in 1907 have much appeal for economists of the post Bretton Woods period. Luzzatti went so far as to envision an international division of cooperation, where Austria would help Germany, where Italy, Russia, and France would help Britain, and where Britain would help the United States. This westward flow of specie was, according to him, the best way to provide for the observed eastward flow of financial distress, which he called a monetary Gulf Stream.[109] But this view missed the essential point, namely that the alleged cooperation had benefited only one of the parties.

In any case, economists and politicians alike were not prepared to endorse Luzzatti's proposal.[110] Economists such as Raffalovich responded that his scheme would encourage moral hazard, so that systematic cooperation and automatic credit lines would only destabilize the international monetary system: discipline was necessary.[111] At the political level, deep tensions were also perceptible during the run-up to the First World War. Eichengreen implicitly suggests that the whole period 1907-14 should be included as part of the same movement towards increased cooperation. But it is difficult to subsume the years preceding one of this century's most deadly conflicts in a supposed era of international cooperation. British leadership was coming under attack, revealing the fragility of the gold standard. The Agadir crisis, followed by the wars in the Balkans, reflected the increasing rivalries. And these rivalries had monetary implications as the 'structural level' again interfered with the 'policy level'. Central banks in France and Germany were induced by

[108] Sayers, *Bank of England*, I, p. 59: 'It was the Bank Rate that had done the trick: among other ways by persuading the Bank of France to help.'

[109] Luzzatti's proposal appeared in the *Neue Freie Presse* of Vienna (see Schloss, *Bank for International Settlements*), and in French as '*Une conférence internationale pour la paix monétaire*'. Other versions doubtless exist.

[110] Note, however, that according to Billoret, 'Système bancaire', the attitude of the Bank of France during the 1907 crisis also contributed to popularizing the idea that a lender of last resort was a desirable feature of any modern banking system, and thus was indirectly responsible for the creation of the Federal Reserve System.

[111] Of course, this view was not new. It had been expressed in the past, for instance by Thomas Hankey, albeit in a national context. Hankey, a director of the Bank of England, had warned against the consequences of implicit insurance in the banking system: Capie et al., *Future of central banking*, p. 10. According to Raffalovich, automatic drawing rights 'diminueraient la responsabilité des coupables . . . qui doivent . . . payer leurs fautes et ne guérir qu'à leurs propres frais' (quoted in Luzzatti, *Une conférence internationale*, p. 243). Similarly, the fear of having one country exploiting the others through automatic credit line systems (the famous inflationary bias of decentralized clearing systems) discouraged proposals to develop reserve pooling arrangements. Such a scheme, which had failed between Belgium and France in the 1890s (Kauch, *Banque Nationale de Belgique*), had met with success only in an 1886 arrangement of the Scandinavian monetary union. However, the fear of being exploited by debtors led the Scandinavians to set upper boundaries to drawing rights (1905) before charging fees on debtor positions (1910).

their governments to accumulate a war chest that could be used in case of conflict. Generosity with regard to gold receded. France became more reluctant to discount foreign bills, and in fact, French banks suddenly called back their Berlin holdings. And the liquidity crisis in Berlin was avoided only through the help of US capital.[112]

V

Three important conclusions can be drawn from this story. First, it should be clear that central bank cooperation was definitely not the predominant pattern in the pre-1914 period. Hence one must reject the view that central bank cooperation was an essential ingredient of exchange rate stability at the same time. This in turn weakens the case for central bank competition as the only source of interwar difficulties. Of course, it could be that less cooperation was needed before 1914, and more afterwards. But it remains true that the link between exchange rate stability and cooperation, provided that one considers a large enough sample, is a vanishing one.[113]

The evidence reported here suggests some possible interpretations of the conditions that led to the emergence or avoidance of conflicts. Several factors appear to have mattered. One is the allocation and substitutability of reserve assets. The 1839 and 1847 episodes, for instance, seemed to result from the fact that the monetary metal in London was not the one predominantly used in Paris. That Russia was inconvertible in the late 1840s certainly made it more inclined to take French Rentes in exchange for gold. The only serious example of cooperation between 1850 and 1880 was that of Hamburg on a silver standard and Austria with an inconvertible paper currency. The swaps of the 1860s were used by London to check the eastern drain and provided gold to Paris. The help given by Austria to Germany in 1907 had a similar tone, for Austria, although it had by then stabilized its exchange rate in terms of gold, did not actually give specie in payment, and thus was ready to swap bullion for bills. Finally, France's help to Germany or Britain, after 1890, was certainly motivated by the fact that the French central bank held at the time a considerable reserve, thus allowing it to disregard the short-term fluctuations of its specie holdings.

Second, the analysis in this article suggests that the 'periphery' of the gold standard made a much more substantial contribution to the regime's stability than is usually acknowledged. This took place at two levels. Because it tended to find itself on an inconvertible, or imperfectly convert-

[112] Eichengreen, *Golden fetters*, p. 52.

[113] True, it could still be argued that it is hard to generalize on the basis of case studies, for such an approach has an inherent selection bias. However, the importance of this objection should not be exaggerated: first, cooperation was usually initiated by informal contacts. Only when these preliminary communications succeeded did negotiations proceed further; at this stage, they usually left a written trace. Thus this investigation of the archives of the two leading central banks is likely, if anything, to bias the case towards cooperation rather than towards conflict. And yet we have seen that it was inappropriate to characterize our sample as illustrative of cooperation.

ible regime, the periphery could on several occasions provide the centre with the specie it needed. On the other hand, this 'natural' help could also be supplemented by coercion, because less powerful countries realized that they would suffer from rash policies implemented by the centre. To various degrees, this was true for France vis-à-vis England, for Austria vis-à-vis Germany, and so on.[114]

A third factor relates to the legal restrictions on the range of instruments available to central banks. The non-availability of discretionary discount rate policies before the 1850s in France, or their possible avoidance after 1885, due to the specific nature of France's gold standard were certainly important factors. Similarly, the modification of the statutory constraints on the class of bills that the Bank of France could discount was an absolute prerequisite for the development of flexible policies directed at providing the London market with liquidity. It would be interesting, however, to determine the extent to which these institutional changes were exogenous: for instance, it seems that the change in interest rate legislation in 1857 in France had certainly been in part motivated by the growing conflict with the Bank of England, thus forcing the French to give more leeway to their central bank.

In all cases, international help had *not* resulted from the bilateral realization of common interests. In its most favourable form, it was a consequence of the unilateral perception of the possible gains associated with unilateral support. This might explain why what has been called, perhaps too quickly, 'cooperation' took place on an ad hoc basis, sometimes succeeding, sometimes failing, but in any case never becoming the keystone of the international monetary system. In a pre-1914 mirror, the alleged collapse of central bank cooperation, which according to Eichengreen took place in the interwar period, looks very much like business as usual.

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[114] de Cecco, 'Central bank co-operation', also introduces a distinction between cooperation at the centre and on the periphery, albeit for a different period.

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