

The Krach of 1882 and the Bourse de Paris

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The 1882 crash of the French stock market, precipitated by the collapse of l'Union Générale, was the worst crisis to hit the Paris Bourse in the late nineteenth century. Using archival materials and new data on the finances of the bourse, this paper examines how the crisis was amplified by the microstructure of the bourse, the second most important exchange in Europe. Fourteen of the sixty agents de change (stock brokers) appeared to be in imminent danger of failure. The closure of the bourse was only averted by an emergency from the Banque de France, mediated by a syndicate of bankers, ensured there was sufficient liquidity on the end of January settlement days.

This crash highlighted the weakness of the bourse's microstructure, in particular, its difficulty in managing counterparty risk. The exchange struggled to pay back the loan while it recapitalized its common fund for handling failed transactions. This disaster also emphasized the dangerous problem created by vague legal status of the futures market for securities. The crisis weakened the bourse at a critical time when it was facing increasing competition from the Coulisse (the curb market). After a long campaign, the government finally gave the futures market clear legal status in 1885, but the bourse was unable to sufficiently improve its microstructure, setting the stage for an even greater challenge from the Coulisse in the 1890s.

The Rules of the Exchange

After the demise of the ancien régime's stock exchange in 1791 when the Revolution swept away all old corporations and monopolies, stock broking was left to the free market (White, 2003). Although suppressed during the period of the terror, trading in securities was largely unregulated until Napoleon embarked upon his drive to create new institutions. In the case of the stock market, he based it on corporate model of the old regime.

The nineteenth century Paris bourse was founded by Napoleon's decree of 27 Prairial X (June 16, 1802). Combined with the law enacted on 27 Ventôse IX (March 19, 1801) and the Code de Commerce in 1807, it set the basic microstructure of the nineteenth century bourse. The law of 1801 and the Code gave the agents de change or stock brokers a monopoly of trade in government securities and other securities "susceptible" to being quoted.¹ The remaining securities were left to the free market, or the coulisse (curb) market.

The decree of 1802 specified that there would be a maximum of 80 brokers, initially selected by a committee, and afterwards nominated by their predecessor, and approved by the Minister of the Interior. Brokers were required to post a 60,000 franc bond, which was raised to 100,000 francs in 1805. These requirements made entry expensive, compared to the existing free market; there were fewer than expected brokers, and the number was formally reduced to a maximum of 60. The agents de change formed a corporation, the Compagnie des agents de change that was governed by a chambre syndicale, whose leader, the syndic, was elected.

¹ This definition led to a long struggle between the bourse and the coulisse over what securities the former had exclusive trading rights.

The brokers were forbidden to trade on their own account or act as counterparty to their clients by the Code de Commerce (Article 85).² Commissions were fixed and determined by the chambre syndicale. Yet, the Napoleonic laws had very little to say about the rules that would govern trading.³ Article 22 of the 1802 decree charged the brokers with the creation of the rules needed for “internal discipline.” These rules would then be forwarded to the Ministry of the Interior to receive government approval and thereby gain legal sanction.⁴ All new members promised to solemnly abide by the regulations of the Compagnie.

There was, however, one important restriction that Napoleon imposed on trading. Although the cash market for securities (marché au comptant) was left unregulated, the futures market (marché à terme) was not given legal status. Napoleon shared old suspicions that short selling fostered speculation and insisted that futures trading remain outside the law. The decree of 1802 enjoined brokers to have in their possession securities for selling customers and cash for buying customers before they engaged in trading. Nevertheless, the futures market, which soon became larger than the cash market, was not suppressed, leaving it in a legal limbo. In spite of many efforts by stock brokers, bankers and businessmen to change the law it remained in force until 1885, when it was repealed in response to the Crash of 1882.

By the third quarter of the nineteenth century, the cash and futures market had developed their own distinct rules for trading on the floor of the exchange. The futures market was the dominant market, where large investors and speculators typically operated. The cash market would take orders of any size, but the minimum size of orders from the futures market was in units of 25 shares.⁵ Poiteux (n.d.) noted that the cash market not a market where speed was essential to its customers, in contrast to the futures market.

The Cash Market

In the cash market, orders were given to the brokers at a fixed price (à cours fixe), a best price (au mieux) or the average price (au cours moyen), which were good until cancelled by the customer (Vidal, 1910, pp. 34-36). However, average price contracts were perhaps the most common, especially for smaller investors. At the end of the day, the highest and lowest of the prices were averaged to obtain the average price at which the orders au cours moyen would be executed.⁶ At the close, the agents de change returned to their offices and sent notices confirming their transactions.

The distinctive physical feature of the Paris bourse was the parquet or stockbrokers ring that consisted of an outer rail or barrier and the inner rail or corbeille. The latter was a latticed fence cushioned on the top with a mound of white sand in the

² The curb brokers were not prohibited from making a market, although they were legally obliged to notify their clients when they traded on their own account.

³ As Poiteux (n.d., p. 193), an early twentieth century commentator, observed “if we look in the Code Civil or the Code de Commerce for regulation of the bourse, we are surprised to find none.”

⁴ This authority was reconfirmed after Napoleon’s fall in the law of May 29, 1816.

⁵ See Décret of 1890.

⁶ If there was only one transaction, that price became the average price; and if there were no quotations the orders were not executed.

middle. The sixty brokers could thus all face one another in the process of trading. Orders could be delivered to them by their clerks, commission brokers (remissiers) and some well-known clients who gave their orders to the guards to hand to the brokers. While the clerks and remissiers directly communicated their orders to the brokers, clients sent them on a folded piece of paper with the name of the agent with the bid or offer written on the inside. The brokers then announced their orders to their colleagues around the corbeille, searching for a counterparty. As it often became difficult to be heard even across the corbeille, the brokers often relied on gestures to indicate their bids and offers. Brokers with offers would thrust out their hands, explaining, “J’ai...” and the name of the security and bid while those with bids would pull back their hands crying out “Je prends...” The broker or commis holding the house’s book of record (carnet) would then record the transaction, and the transactions were posted. In a market, where trades were made verbally rapidly, the guarantee of a broker’s word was essential. He was obliged to make the customer whole if the transaction failed, and the customer had recourse to the chambre syndicale in the case of a dispute. Furthermore, if the customer failed to produce the securities or cash, the broker was obliged to honor his obligation to his fellow broker. (Poiteux, n.d., p. 203)

The cash market was opened every day a process called the débrouillement de la cote or the matching of the quotation record, whereby the first price of the day, the premier cours was reached. The process began the day by setting the equilibrating price for the mass of orders that had accumulated since the close of the previous day. Before the opening of the bourse in the morning, the bids and asks received by each broker were written down on his feuilles d’opposition or matching sheets, which were delivered to the chambre syndicale at 11:15 a.m. These sheets were collected and distributed to the cash recorders (coteurs au comptant), one for each of the 27 divisions of the official quotation record (cote officielle), who wrote down in the matching books (livres d’opposition) the names of the brokers and the limit prices they were offering (Poiteux, pp. 209-211). At the opening of the market, the broker or his clerk (commis) immediately headed to examine these books. A quick discussion then ensued about what price would satisfy the greatest number of bids and offers, in the débrouillement. This agreed upon price became the first price of the day that cleared the registered trades. The clerks wrote down in their booklets (carnets) names of the counterparties so that the trades could be executed. After the opening, clerks took newly arrived orders to examine the matching books to see if there were some unexecuted bids or offers and then proceeded to call out to determine if there were any better offer or bids.

The time for delivery differed for securities that were registered (titre nominatif), which bore the name of the owner and bearer securities (titre au porteur), where the holder was presumed to be the owner. The delivery of a registered security was only considered to be good when the buyer had been entered as the owner in the registers of the company and a new certificate had been issued. Registered certificates had to be delivered to the purchaser the day after they were received in the broker’s office, and the proceeds from the sales were required to be delivered to the seller on the day following the completion of the transfer.⁷ For bearer securities, the certificates had to be delivered

⁷ If either the securities or money is not delivered after twenty sessions of the bourse, the customer has the right to recourse of the chambre syndicale, which will enforce the transaction.

on the day following delivery by the seller and the proceeds from the sale yielded two days after the securities had been handed to the broker (Vidal, 1910, pp. 42-45).

The Futures Market

To participate in the opening for the futures market (marché à terme), all orders were required to be received by the brokers' clerks before the opening bell. In this deeper market, the most serious and influential traders do not deliver their orders until the last moment when there was "a made rush of the young employees who run from their boxes and folding-seats to deliver their orders to the clerks holding the house book (carnet).” (Poiteux, p. 212). At the sound of the bell, the book holders called out their bids and offers. The recording clerk (coteur) noted the first price and raised or lowered the official quote until there was no offer below and no bid above the price. Then he announced the price in a loud voice, cutting his hand horizontally through the air, establishing official premiers cours or first price. Newly arriving orders were announced by the brokers and trades made, with the new prices called out by the recording clerk and marked on the board after the first price. Traffic on the floor of the exchange was heavy, as clerks moved back and forth from the parquet to the cabins and folding-seats of their houses to relay information about prices and receive new orders.

The chambre syndicale set the settlement dates (liquidations) for futures transactions, which determined the duration of the contracts. Unlike the cash market, these operations were settled semi-monthly on the 15th (liquidation de quinzaine) and the last day of the month (liquidation de ultimo), or the following day if it is a holiday. The exceptions were the French rentes, shares of Crédit Foncier, and railroads which were only settled at the end of the month. The day after the settlement day accounts were made up and forwarded. On the next two succeeding days debtor accounts were paid up followed by payments to creditors (Vidal, pp. 70-71).

Often the traders did not want to liquidate their position on the settlement day. Buyers might not want to take the securities if the price was unexpectedly too high and would desire to extend the maturity of the contract. A buyer could maintain his position by reconstituting his position by means of a report. If he had contracted to buy on the 15th of the month, on that date he would then buy at the agreed upon price and immediately resell the securities for the next settlement day with a new futures contract at a special price, the clearing price, or cours de compensation. The report would be executed for a fee. The cours de compensation was fixed on the settlement day by the syndic. To be able to buy the shares agreed to in the contract for this continuation procedure, a trader needed funds---borrowed funds. Funds to make reports (capitaux reporteurs) are obtained from investors who purchased the securities from the buyers on settlement day and resold them to the same party at the next maturity at the clearing price plus a charge for carrying over the securities (contango). If sellers wanted to prolong delivery, they could pay a fee or deport that allowed them to sell the shares on the liquidation date and immediately repurchase them for sale at the following settlement at the clearing price.

In this futures market, buyers and sellers agreed to exchange a fixed number of shares for a fixed price on the fifteenth or the end of the month. Bulls or haussiers would

buy à terme with the intention of reselling at a higher price. Their position was said to be on the high (être à la hausse), while bears (baissiers) expecting prices to fall were said to be on the low (être à la baisse). As securities and cash were not in hand at the time of the trade, futures trades could entail loss for the customer, and brokers often demanded a margin payment (couverture) in the form of a deposit in money or liquid securities.⁸

The high volume and rapid speed of this market, where trades verbal promises, required customers and brokers to be certain that their orders would be executed. Brokers guaranteed that their customers' bids and offers were good and the Compagnie guaranteed that the brokers would be able to execute their trades. If a customer was unable settle his account or carry it over to the next settlement, he was subject to a procedure known as an execution. The broker was obliged to complete the customers' transactions, buying-in and selling-out the securities, absorbing the loss if there was insufficient margin. (Article 69, Decret October 7, 1870). If a broker defaulted, the syndic, on behalf of the chambre syndicale, engaged in an execution against the broker buying-in and selling-out, leaving the creditors to enter their claims against the broker's assets.

In spite of the fact that the futures market dominated the cash market, futures contracts were not legally enforceable. Because no merchandise or cash changed hands, time contracts were treated as gambling debts. According to Article 1965 of the Code Civil, the state would not enforce a gambling debt (Vidal, p. 201.). This principle was tested several times. In a key case in 1825, the Cour de Paris and the Cour de Cassation maintained the established position. In 1842, the leading bankers sent a memorial to the government, pleading that the time market be made legal but were rebuffed. In 1867, an Imperial commission was appointed to investigate the question and concluded in favor of revising the law; but only when the crash hit was there a serious change considered. Futures contracts only became legally enforceable with the passage of the Law of March 28, 1885.

Counterparty Risk and the Futures Market

The risk that a customer or broker who guaranteed customers orders would default was present because unexpected changes in customers' net wealth affected their ability—or in the absence of legal enforcement, their willingness-- to meet their contracts. Default risk was not randomly distributed among customers because but was closely correlated over the business cycle due to common macroeconomic influences. Brokers might fail because a number of their customers failed. But there was an additional risk factor---counterparty risk. Given the nature of the futures market, counterparty risk was a central problem for the exchange. Between the time that a trade was agreed upon and it was settled, there was a risk that the counterparty broker would not be able to make good on the trade, delivering securities or cash. The longer the time of the contract, the greater this exposure to default, as potential shocks could cumulate. If the letter of the law of 1802 had been applied and trades were made with securities and cash in hand, there would have been no counterparty risk, but the time delay created an opportunity for this hazard.

⁸ In 1890, brokers were given the right to demand margin as the futures market had been legalized, Poiteux.

Counterparty risk would be high when a broker's trades are highly concentrated with a small number of counterparties.⁹ A high degree of interdependence among brokers could trigger a cascade of defaults on settlement day. A smaller number of brokers implies a higher counterparty risk. The contrast between exchanges is striking. While the Bourse de Paris had sixty agents de change in 1880, the New York Stock Exchange had 1,060 seats while the London Stock Exchange had just under 2,000 members. The danger of counterparty risk existed on the other exchanges. A substantial part of the minutes of the General Committee of the London exchange were devoted to questions of how to discipline defaulting members who presented counterparty risks to their colleagues (Neal, 2004). Although members on the London and New York exchanges were certainly less well-known to one another than their peers in Paris, creating potential monitoring problems, the magnitude of counterparty risk was small. Assuming a similar amount of capital, a default by one broker on the New York or London exchange would have been unlikely to bankrupt other brokers because their trades would have been widely distributed. The probability that a broker's orders were not highly concentrated was much lower. But on the Paris exchange, the small number of brokers meant there was much higher probability of concentration of orders and a much greater counterparty risk. The failure of one agent de change could easily bring down others; it was a serious problem that needed to be solved.

The Caisse Commune or Common Fund

Paris' solution was the assumption by all brokers of joint responsibility to guarantee the successful execution of all trades and the creation of a common fund, the caisse commune to pay for losses. This institution was absent from New York and London, as their structure did not require it. Furthermore, the competitor of the Bourse de Paris, the Coullisse or curb market, had no common fund as it had no limitations on the number its members, thus reducing counterparty risk. However, this solution also carried a cost, as the common fund represented a competitive burden on the parquet vis-à-vis the coullisse.

Beginning in 1818, the hottest question in the General Assembly's meetings was the question of whether to establish a common fund. Although the bourse of the ancien régime had maintained a small fund to pay for collective expenses, the caisse commune was established in 1822 as a mutual insurance fund that could provide temporary credit to an illiquid broker or in case of insolvency permit an orderly liquidation that would not tie up other agents operations' (Poiteux, p. 80-81).¹⁰ Given that a mutual guarantee was offered, moral hazard became a new problem and monitoring to limit increased risk taking was needed. Even though the small number of brokers facilitated mutual

⁹ Jarrow and Yu (2001) model counterparty risk for the pricing of defaultable securities using a double poisson process with jump terms to capture the interfirm linkages. They find that in the limit as firms hold well-diversified credit risk portfolios, the counterparty risk part of their default intensities (the likelihood of default per unit of time) declines and disappears.

¹⁰ See the Assemblées Générales Rapports 1852, p. 80 where the founding of the Caisse commune is discussed as it was reorganized on June 17, 1852.

monitoring, the chambre syndicale began to require twice yearly reports of brokers' income and capital.

To fund a mutual guarantee fund, the brokers taxed themselves. The funding of the internal operations of the Paris bourse from 1873 to 1907 can be seen in Table 1 and Figure 1. The Compagnie des agents de change secured income primarily from three sources. By far the most important source was a stamp tax imposed by on the special paper use by brokers to record their operations, the price of which was determined by the brokers in their General Assembly. Roughly, this was a tax on the volume of activity on the bourse and borne in proportion to the activity of the broker. Volume was not recorded, so this approximation to volume, was a tax that should have been related to exposure to counterparty risk. The greater a broker's share of activity, the greater his exposure to this risk. The year 1873 was fairly typical of a "quiet" year on the bourse. In 1873, the stamp tax yielded 4.1 million of a total of 5.5 million francs of revenue. The next most importance source of revenue was the brokerage fees (courtages) obtained from the Treasury's trading activities. In 1862, the Fonds Spécial des Trésoreries Générales was established to handle the orders to buy and sell French rentes for government's tax collectors (receveurs généraux), rather than have individual agents try to execute them. To manage this operation a special fund was created, with a precautionary reserve. The income from the fees on these trades was 922,425 francs in 1873. The last significant source of revenue was the interest earned on the common funds of the Compagnie from their employment in report operations. This activity brought in 399,845 francs.¹¹ If needed the chambre syndicale had the right to request that the fund be supplemented by extraordinary levies on members.

Expenses were well below revenues. Apparently to ensure that there was a sufficient buffer against counterparty risk, the Compagnie set its expected revenue much higher than its expenses. Some extra income could be transferred to the common fund but most was rebated to the members in normal years. Expenses for 1873 totaled 787,300 francs. The largest element of expenditures was on salaries for the bourse's personnel including the guards and concierges, which were 255,700 francs, followed by the entry for rent, taxes, and insurance of 78,308. Remaining expenditures included legal fees, clearing operations and telegraphy. The Compagnie was thus left with a large surplus of 4,728,619 francs, which could be added to the common fund or rebated to the brokers.

In their annual report to the General Assembly, the accounting committee for the common fund reported that on November 10, 1873, the common fund stood at 7,558,394 francs (See Table 2 and Figure 2). Each of the agent de change owned a proportional share of the fund, one-sixtieth of which was reimbursable by his successor agent. The fund was administered by the syndic, and it was monitored by an adjoint of the syndic and three agents de change appointed by the General Assembly. The largest component of the common fund, 6 million francs, was composed of the 100,000 franc security bonds deposited by the 60 brokers. To this was added the reserve of 644,304 francs for the Trésoreries Générales. More importantly, the revenues over the years had contributed to secondary reserve of 794,972 francs by the end of the previous year. With a surplus for the year 1872-1873 of 4,7228,619, the Compagnie added 108,620 francs to the secondary

¹¹ In addition, there was some occasional revenue from fees from the reception of a new agent de change, interest on loans from the common fun, income from the securities and property owned by the Compagnie, and seat fees levied on others attending the bourse. (Poiteux, p. 83-85.)

reserve for a total of 903, 592 francs and rebated 4,620,000 francs or 77,000 francs to each broker.¹² Most of the common fund was placed in reports, earning interest, except for the reserves for Treasury transactions that were held in rentes. A balance sheet of the common fund, would have thus shown these earning assets of 7.5 million francs set against an equal capital from diverse sources.

If a broker requested assistance, the Compagnie in its General Assembly decided by a two-thirds majority in a secret ballot, if a loan was to be made and the amount. The agent provided a guarantee from his security bond equal to the advance. The chambre syndicale could also provide an advance for maximum of six months of up to 100,000 francs at an interest rate it determined. Collateral was the broker's office or membership on the exchange. Any further extension of a loan required the permission of the General Assembly. If a broker failed, he could not obtain a loan from the common fund, and the chambre syndicale substituted itself for the defaulting agent to wind up his affairs and make good on his obligations. The years 1873 and 1874 were without incident with small increments to the common fund and most of the surplus revenues rebated to the brokers. But in 1875, the common fund was called upon to manage the failure of a broker.

L'affaire Jumel

The operation of the Caisse Commune can be seen in the failure of the broker Alexis-Alphonse Jumel. An agent de change since 1867, Jumel was forced to give up his office on May 7, 1875.¹³ However, the liquidation of his affairs was already proceeding. On August 23, the General Assembly had voted to pay out 1,590,000 francs to wind up Jumel's position. Of this sum, 250,000 francs represented the seizure of his security bond (this was a bond in addition to the 100,000 in the common fund), 340,000 francs from the seizure of his assets, and 1,000,000 francs from the reserves of the Caisse commune.¹⁴

Although little is known of the circumstances of his failure, Jumel's demise proved costly to brokers who had traded heavily with him. After the cancellation of his bond, the Compagnie paid one-third of the value of the outstanding debts to brokers. His trading apparently had been highly concentrated, and this partial compensation proved to be a large hit for those who had traded heavily with him. Paul-Alphonse Saint-Evron received a third of his total debt of 412,746 francs or 136,206 francs.¹⁵ The remaining brokers received one-third of the value of their claims or 814,625 francs, with 389,168 francs set aside for obligations coming due.

With surplus revenues of 4.1 million francs, the brokers in the General Assembly could have easily paid out all of Jumel's debts in full or 2,852,493 francs, but they did not. Instead, the common fund was allowed to drop from 7.9 to 7.4 million francs, and 4.2 million was rebated to the brokers. Why, the Assembly decided to saddle the brokers

¹² This rebate was distributed twice yearly after the liquidations of May 31 and November 30. (Poiteux, pp. 87-88) There was an additional 10,498 francs in the Common Fund, representing assets to be recovered.

¹³ Compagnie des agents de change, Filiation des Chares d'Agents de Changes près la Bourse de Paris (Paris: November 1961).

¹⁴ Assemblées Générales, Rapport de la Commission de Comptabilité de la Caisse Commune, December 20, 1875.

¹⁵ Saint-Evron was probably forced out of business by his losses, as he gave up his office on July 15, 1875.

trading heavily with Jumel with large losses is not known, perhaps, they thought they should have been more observant. Nevertheless, all the bourse's customers who had been on the other side of Jumel's trades were made whole, ensuring confidence in the bourse.

In 1876 when revenues, especially those from the stamp tax fell, secondary reserve was little changed, but as the syndic explained to the brokers in the General Assembly, the Compagnie was obliged to pay out an unexpected 340,000 francs to settle additional debts of Jumel.¹⁶ The next year, revenues continued to fall, and the dividend to brokers was cut to 3.2 million with a small additional decline in the precautionary reserve. Only in 1878, with revenues again on the rise was the common fund increased. It grew, as did the rebates; yet by 1880, it was still well below the level of 1873.¹⁷

Although the failure of an individual agent had produced substantial losses, the Compagnie seemed to believe that its common fund represented adequate protection against counterparty risk. However, the shock from the collapse of Union Générale overwhelmed this surprisingly fragile structure, and without assistance from the Bank of France, the bourse might have collapsed.

Origins of the Crash

The crash of 1882 is identified with the collapse of the investment bank (banque des affaires), Société de l'Union Générale, founded by Paul-Eugène Bontoux. An engineer who had attended the École Polytechnique and the École des Ponts et Chaussées, Bontoux had work from 1860 to 1877 for the Austro-Hungarian railroad company controlled by the Rothschilds, the Chemins Lombards or Südbahn. Union Générale began its operations in 1878 just as the long depression of the mid-1870s was ending and many new enterprises in industry, construction, commerce and transportation began to issue securities. New issues flooded the market, one estimate put the total new issues in the last two and a half years of the boom at 14.5 billion francs, when national savings were only 2 billion francs. At the peak of the boom in 1881, 125 new firms were listed on the Paris Bourse with a capital of 5 billion francs.

With his railway experience and deep knowledge of the political economy of Austrian and Hungarian railways, Bontoux left Südbahn to seek his fortune in the promotion of new securities. Bontoux organized a new financial network for the Austro-Hungarian Empire to channel French capital to Central Europe, aiming to challenge the position of the Rothschild-Creditanstalt group in Vienna. His plans also had a very strong political agenda. The early years of the Third Republic were a time of considerable frustration for French conservatives, especially legitimist nobility and clergy. He used Ultramontane and anti-Rothschild rhetoric to induce conservative Catholic investors to buy shares and deposit their savings in his banks. They hoped for profit and power to

¹⁶ Compagnie des agents de change, Assemblées Générales, Rapport la Commission de Comptabilité de la Caisse Commune, December 18, 1876. Debts were long remembered. When it was announced that the former broker, Augustin-Jean-Baptiste-Félix Pestel who had sold his office to Jumel and was thus probably one of his silent partner had made the final payment of 75,000.02 francs on his debts it was met with loud applause.

¹⁷ Expenditures rose by about 300,000 francs in 1880 due to 94,729 francs of work on a building, and other higher expenses.

counterbalance the liberal democracy now established in Paris. Working in Lyon, a conservative stronghold, Bontoux appealed to these disaffected groups. The newspaper *Cote Lyonnaise* (January 24, 1882) described Bontoux as attempting to establish a Catholic financial institution to rival the “numerous banks of Jewish origin.”¹⁸ He was active in politics and considered himself to be a “personal friend” of the Henri, Comte de Chambord, the legitimist pretender.¹⁹ When prominent banks, notably *Crédit Lyonnais*, were cool to his proposals, he found private investors in Lyon willing to support railroad, mining, and banking schemes. Over half of the two thousand subscribers to *Union Générale*’s capital of 25 million francs came from the region around Lyon and included many legitimist nobility and clergy, although there were also entrepreneurs, professionals, and even skilled workers.

Bontoux promoted his enterprises through a series of interlocking financial institutions. Vidal (p. 189) estimated that the capital raised by the bank and its affiliated enterprises to be one billion francs. At the center, *Union Générale* grew rapidly increasing its capital from 25 million to 50 million francs in 1879, then to 100 million francs in 1881, with a third increase to 150 million francs planned for January 1882.²⁰ Deposits also flooded in, growing from 22 million francs in December 1878 to 110 million in April 1881. Bontoux’s next most important creation was the *Österreichische Länderbank* established in 1880. In a coup that startled both Paris and Vienna, Bontoux gained official support for this new institution from the government in Vienna, which granted it all the privileges of the *Banque de France* except that of note issue. The *Union Générale* took a quarter of the *Länderbank*’s initial 100 million franc issue, and maintained its control when the Austrian institution’s capital was raised to 200 million francs. These two financial institutions became the Imperial Austrian government’s instruments to channel capital to railways that would enable it to dominate the Balkans politically.

Bontoux’s promotions focused on the enormous opportunities that arose in the late 1870s to create an integrated Balkan railway system that would link Vienna to Constantinople. Who would control this enterprise was up for grabs after the defeat of the Ottoman Empire. Its withdrawal from the Balkans produced a power vacuum, setting the stage for conflict between Austria-Hungary and Russia.²¹ Before the war, the *Staatsbahn* in Austria and the *Société Imperiale des Chemins de Fer de la Turquie d’Europe* in Turkey were positioning themselves build the network of linked lines. The *Staatsbahn* or *Compagnie des Chemins de Fer de l’État Autrichien* was a private company founded in 1855 by a Franco-Austrian group put together by the Péréire interests, including Protestant members of the Paris’ *Haute Banque*. In 1874, it was a solid enterprise with a capital of 225 million, with mines and forests and 1,646 kilometers

¹⁸ Bouvier, 1960, p. 22.

¹⁹ This relationship may have contributed to his departure from the Rothschild-controlled railway. See Bouvier, 1960, Chapter 1.

²⁰ See Bouvier, pp. 47-???. For a description of the various stock issues and their pricing.

²¹ A revolt against Ottoman rule in Bosnia-Herzegovina and Bulgaria broke out in 1875. In 1876, Serbia and Montenegro joined the anti-Turkish revolt, leading to the abdication of the Sultan, with Russia declaring war on Turkey in 1877. The collapse of the Ottoman Empire in Europe, opened a scramble for the Balkans and positions were initially settled by the Treaty of Berlin in 1878. Russia gained Bessarabia and Batum, Britain Cyprus, and Austria was allowed to occupy Herzegovina and the Sanjak of Novibazar (between Serbia and Montenegro). See Ferguson.

of rail. Initially, the Staatsbahn had been the instrument of Austria's Balkan policy, but it did not find support in Hungary, which with newly increased independence, refused to confer power on a company that was foreign and under Austrian control (Bouvier, pp. 72-78). The Société Imperiale, founded in 1869, was controlled by the Belgian Paris-based entrepreneur Baron Maurice de Hirsch who had planned to link up with the Rothschild controlled Südbahn for the first Vienna-Constantinople line. Hirsch tried to persuade the Hungarian government to concede a line from Pest to Semplin, impeding Staatsbahn's efforts to move South.

But the Ottoman railway concessions to Hirsch fell to the successor states established in 1878 by the Treaty of San Stefano: Romania, Serbia and Bulgaria. Alarmed by the expansion of Russia's influence, Austria sent garrisons deep into Bosnia and pressured Serbia to accept customs and commercial treaties that placed it well within the Austrian sphere of influence. The central political question turned on whether lines would run through the Austrian sphere of influence or the Russian. In this struggle, the Austrian government decided in 1880 that Bontoux, thoroughly versed in these issues by his experience in Südbahn, and his banks the Union Générale and the Länderbank, would serve to implement its Balkan designs.

The Bontoux Group faced two problems. To obtain control of the line through Hungary required the defeat of Staatsbahn and the acquisition of a Serbian concession. First, to persuade the Hungarian government that his railroad plans were aligned with Hungarian interests, Bontoux launched a new bank in 1881, the Banque Nationale Hongroise or the Ungarische Ländesbank Aktien Gesellschaft with a capital of 50 million francs. It was controlled by its principal shareholders, Union Générale, the Länderbank and other Bontoux enterprises. Then in May 1881, the Hungarian Parliament ratified a convention with the Ungarische Länderbank, which promised to lead a group of companies to fund the construction of the Hungarian portion of the government-owned railroad line. At the same time, a treaty between Austrian and Serbia in March 1881 included a 100 million franc bond issue managed by the Bontoux group for construction of the Belgrade-Nich-Vranja line.²² In addition, Bontoux obtained a concession to build the railway on highly favorable terms. For the 365 kilometers from Belgrade-Nich-Vranja, the Austrian government promised to pay between 198,000 and 225,000 francs per kilometer when Bontoux estimated the average cost to be 150,000 francs per kilometer. To run the Chemins de Fer de l'Etat Serbe, the government further promised a subsidy of 7,800 francs for two trains day and 7 percent of the total value of materials used and 2 percent of gross receipts (Bouvier, p. 98-99). In something of an understatement, Bouvier (p. 69) wrote "It is probable that the Vienna Rothschilds took umbrage at the multiple activities of their former clerk."

New investment opportunities seemed to beckon all over the Balkans; and Bontoux was not alone in seeking them out; enthusiasm centered in Lyon. One of new wave of banks created in France's second city was the Banque de Lyon et de la Loire, promoted by Charles Savary, he was married to the daughter of the Parisian agent de change Paul-Edmond Mahou (Bouvier, p. 120). Mahou was one of the more seriously compromised Paris brokers and was one of four who failed in the crash (Archives de la Bourse, dossier Mahou). The bank was launched in April 1881; Savary was president

²² While nominally paying 5 percent, the Bank bought the issue for 71.4 million, reselling them to the public at a higher price, yielding 3.8 million francs in profit.

and his brother-in-law Georges Mahou was on the board. The initial capital of 25 million was raised to 50 million in November, and it drew local depositors to its windows with high rates of interest. The bank promoted industrial enterprises, including many in Russia. To profit from the surging demand to finance reports, the Banque de Lyon et de la Loire formed an institution specifically to invest in loans to speculators in December 1881, a caisse de reports, the Caisse Lyonnaise with a capital of 20 million francs, with funds drawn from several brokers.²³ The bank itself invested heavily in reports, which rose from 18 million in October 1881 to 37 million francs in December 1881.

Most banks joined in the boom. Credit Lyonnais doubled its capital and acquired two insurance companies, launched two subsidiaries, the Societe Lyonnaise des Eaux et de l'Eclairage and the Société Foncière Lyonnaise (Bouvier, p. 113). Many banks focused not on new issues but on the provision of margin credit and reports. Visiting another new bank, the Credit Financier et Industriel de Lyon, with 20 million capital, an inspector from the Banque de France was informed that: "The greater part of our capital is employed in reports. This placement of funds appears to be the most advantageous, it is what our statutes strongly recommend, and it follows the example of many other banking houses in our city." (quoted in Bouvier, p. 125). The reports did offer a high and climbing return and the total funds absorbed may have reached 2 billion francs.

Speculators à terme borrowed on credit at the cost of the report and carried over their purchase at the liquidation price hoping to see higher price by the next liquidation. According the Bouvier (p. 131), the reports for blue chip stocks cost 4 to 5 percent at the end of 1880, 8 to 10 percent in the Spring of 1881, then 10 to 12 percent in late 1881. At the end of the year, a taux de report on the Lyon bourse was typically 50 percent. While the Banque de France had raised interest rates, these rates and even higher ones for more speculative stocks probably indicate that lenders were demanding a premium as the market moved higher.²⁴

The stock market boom swept the French market, but nowhere was it more intense than in Lyon, thanks in part to the promotional activities of Bontoux. The general rise in the market can be seen in stock market index for the Paris market in Figure 3 (Arbulu, 1998). At the end of December 1879, the market index, which stood at 156, began its ascent. By the end of the next year, it had reached 184, and peaked in December 1881 at 222, which it would not see again until July 1896, fifteen years later. Among the leading speculative issues was, of course, Union Générale, climbing from 500 francs a share in 1879 to over 3000 at its apogee.

The brokers found the market extremely profitable. Not only did they benefit from increased volume that yielded more brokerage fees, but they also became conduits for lending to lenders on the market, profiting from assisting in the reports. The rising value of their offices on the exchange is reflected in the price of the offices (prix de office) or seats on the exchange in Figure 4. Unlike the New York Stock Exchange, the market for "seats" on the Paris exchange was not a free, as witnessed by the round numbers. The price of an office was determined by the chambre syndicale, which

²³ In the aftermath of the crash, the caisse was dissolved in March 1882.

²⁴ See Rappoport and White (1994) for a discussion of a similar phenomenon on the New York Stock market in the 1920s. The premium and margin demanded on brokers' loans rose precipitously at the market neared its peak, indicating that lenders became apprehensive of a crash.

responded to enquiries by the office holders.²⁵ However, the chambre did consider market pressure. Prices had moved steadily upwards from the 1870s from 1.4 to 1.8 million francs.

Yet, in spite of their prosperity, many brokers became alarmed. On the Paris exchange, 163 new issues were listed in 1881, the syndic commented on the huge rise in trading. He was alarmed as the exchange was overwhelmed on the liquidation days, where there were long nights and long delays (Compte rendu, 1881, p. 1-2). In his 1882 annual report, the syndic, perhaps with some benefit of hindsight, described the madness that overcame with market, claiming that he had been appalled by the rise in speculation and had counseled prudence. He wrote, “It sufficed to announce a new company, sell it shares and launch a new one.” He blamed the press and bankers for inflaming the appetites of investors and compared the fever that hit Lyon with the madness of Mississippi Bubble. He wrote that some argued that the brokers should close their order books to halt the speculation, but he opposed this measure on the grounds that it would have only precipitated a crisis.²⁶ In October, one banker had warned him: “Take care, the market is illiquid.”²⁷

As prices climbed higher, the market became quite nervous. On December 19, 1881, when Union Générale climbed above 3000 francs, it cost 160 francs to reporter one share and 70 francs for a share of the Banque de Lyon.²⁸ By the December 22 cost of the reports were 140 francs and 100 francs respectively. More generally, interest rates were rising. A refinancing of the Italian debt produced a capital flow to Italy. Following the Bank of England, The Banque de France increased its lending rate to 3.5% on October 14, 1880, then to 4% on August 25 1881, and 5% on October 20, 1881. Some major institutions, like Credit Lyonnais began to curtail their lending and promotion of new issues (Bouvier, p. 282).

The Crash

The collapse began when the Austro-Hungarian government refused to give the Banque de Lyon et de la Loire a concession for the creation of a Banque Maritime de Trieste (Bouvier, pp. 142-6). When news reached the Bourse de Lyon on January 4, 1882, the bank’s shares fell from 1400 to 1040 francs, bouncing to 810 francs on the sixth, and then 540 francs on the thirteenth. Investors in the futures market who had purchased shares for the mid-January liquidation at 1800 faced huge losses. At the same time, the price of a share in the Suez Company on the Paris bourse fell from 3,440 on January 7 to 2,900 on the fourteenth. The thirty brokers on the Lyon bourse were deeply involved in the financing of their clients purchases. The procureur-général of Lyon observed: “In the last six month, Lyon has been seized by a fevered speculation.

²⁵ An example of the formalized response: “Sur la demande de M. Roblot, elle arrête l’estimation du prix de son office à 1,700,000 francs, cette somme ne comprenant ni le cautionnement, ni le fonds de la caisse et de réserve, ni le fonds special de reserve pres la Caisse commune lequel est évalué à 250,000 francs compensation faite de toutes eventualities differents à ces fonds.” Chambre syndicale Séance du 8 Février 1886, Vol. 27, p. 13.

²⁶ Compte rendu 1882. The syndic indicated that a crisis had been precipitated in 1853 by a similar action.

²⁷ ‘Prenez garde, la place est inliquidable’ me disait un banquier des le mois d’Octobre!’”

²⁸ At an compounded annually, the implied rate was 286 percent for Union Générale.

Scandalous fortunes have been made in a few days. It appears that the stock brokers have forgotten their professional duties and knowingly lent their assistance to activities that are pure gambling.” (January 1882, quoted in Bouvier) Already on January 12, two Lyon stock brokers stopped payments when they were not able to settle debts of numerous clients trapped by the fall in the price of the Banque de Lyon and Suez shares. Three more agents were in serious trouble, and the Lyon chambre syndicale sought to guarantee payments for the upcoming January 15 liquidation with its common fund.

In this gathering storm, the price of Union Générale on the Paris bourse began to collapse. Although its condition only became clear later, it too was compromised by serious financial irregularities. The bank had not succeeded in selling all its capital and gave fictitious subscriptions to bolster demand for its successive capital increases. In the final issue of 50 million francs in 1881, the bank held back 31,389 shares out of 100,000, representing 26.6 million francs. Thus, Union Générale did not have the capital that it reported, and was trading heavily in its own stock. Furthermore, the bank appears to have falsified its quarterly report of September 1881, showing a fictitious profit of 34 million. On January 5, the first cash price of a share was 3040 francs, with the futures price hovering between 3020 and 3060 for the upcoming liquidation. The cumulative bad news brought both prices down to 2800 by January 14. But, on January 18, the Banque de Lyon was hit by a run and closed its doors. Cash and futures prices of Union Générale, which had drifted down to 2390 and 2400 francs by the 18th, collapsed to 1400 and 1300 the next day. Bontoux desperately tried to bolster the price of the stock. He managed to obtain five loans, totaling 18.1 million francs on January 19 from a consortium of banks. But when these funds were exhausted on January 28, the consortium refused to any increased and Bontoux was forced to close the bank on January 30. By the January 30, the cash and futures price of Union Générale had fallen to 500 and 600 francs.

Even shares of the Banque de France took a drubbing, dropping from 5700 in the cash market on January 5 to 5450 francs on January 30. Overall, the Paris market, as represented by the index in Figure 3, fell 7.3 percent from December 1881 to the end of January 1882. It continued to drift down, until the end of the year, sinking to 15 percent of the peak.

Crisis on the Bourse

When the Krach hit, the Paris bourse faced its gravest challenge since its recreation in 1802. The bourse had been struggling with competition from the coulisse, which had grown in the number of issues quoted and volume of trading. While the overall decline in the market appears to have been modest, the involvement of agents de change in the financing of some speculative stocks exposed the whole of the Lyon and Paris bourses to an extraordinary level of counterparty risk and failure. After the collapse of the Banque de Lyon, the chambre syndicale of the Lyon bourse estimated that it would require 33 million francs to carry out the next settlement. The chambre decided that the exchange should cease operations on the evening of January 19; the agents closed their books on the twentieth and sought out assistance in Paris.

On the Paris exchange, many of the speculators in the futures market for Union Générale were unable or unwilling to cover their rapidly growing losses as the end of January settlement approached.²⁹ Vidal (1911, pp. 211-214) reported that “many persons occupying a certain social standing did not hesitate to refuse to meet their obligations” as the law permitted a plea of gambling to avoid payment of a futures contract. This behavior was denounced and on February 8, 1882, the Paris Chamber of Commerce passed a resolution calling for the government to change the law.³⁰

As the bourse and its brokers were obliged to carry out the orders placed with them, an enormous liquidity crisis loomed. Furthermore, many banks were creditors of the brokers who provided credit to their customers for the reports. The key question that beset both the Paris and Lyon exchanges was what would be the cours de compensation. Typically, this rate was set by the Paris chambre syndicale on the first day of the settlement, using the cash price on the first day of the month. It was the mandated price for reports and exchanges between agents, permitting clearance without the transfer of money and certificates. The cours was passionately discussed in January, both in Paris and Lyon where the market had closed down. Would the cours be the price of securities before or after the collapse of the market? The reporteurs, the bankers, and the bears (baissiers) demanded that the cours de compensation be the February 2 price. The acheteurs à terme—the bulls (haussiers) wanted to use the prices on January 19 when the Lyon brokers shut down their market. The higher the price the smaller the loss they faced---and the differences were staggering. A purchaser of a futures contract of Union Générale on January 9 promised to pay 3075 francs a share at the end of the month. The prospect of reselling at the January 19 cash price of 1300 francs was painful, but it would be worse if the February 2 cash price of 400 francs was the settlement price. Although the baissiers lobbied hard for across-the-board high prices---some hoping for a 2000 franc price for Union Générale—neither Allain-Targé, the finance minister nor his successor Léon Say gave them any hope. In the revulsion against speculation, Paris chose the February 2 price of 400 francs for its cours de compensation (Bouvier, pp. 195-197).

Meanwhile, the question of how to finance the upcoming settlement loomed. Many customers and certainly some brokers would not be able to honor their commitments, upsetting an orderly settlement. To meet this crisis, the Compagnie held an emergency General Meeting on January 25 and gave the syndic the power to contract an 80 million franc loan to meet upcoming settlement. It was understood by the government that the bourse would obtain credit from the Banque de France, intermediated by private bankers and financial institutions because the Banque could only provide a loan upon collateral of bankable paper that the brokers did not possess. The Chambre Syndicale would create 160 bonds of 500,000 francs carrying 5 percent interest, reimbursable at par in 10 years. In turn, the bankers would receive these bonds and issue three-name, three-month paper that could be discounted at the ordinary rate of interest with the Banque de France.

On January 30, 1882, this operation was carried out and the Compagnie des agents de change borrowed 80 million francs to ensure that its members’ obligations were honored, thereby preventing “an immense disaster that could upset all of Europe’s

²⁹ Brokers clients were said to be unable to “regler les differences.”

³⁰ Legislative changes moved very slowly, and only on April 8, 1885 were marchés à terme legalized, repealing the law that obliged agents to have on hand securities for sales and cash for purchases.

financial equilibrium.” The bankers consortium contributed the 80 million francs accordingly: the Rothschilds 10 million and 2 million each from Heine, Gunzburg, Stern, Hensels, Camonds Vernes, Cohen, De Machy et Silliere, Gillet, Hottinguer, Marnard, and Mallet frères. One million francs was provided each by Hannadex, Péreire frères, Mirabad, and Donon, Alberti. Five million were provided by Credit Foncier, the Comptoir d’Escompte, the Banque de Paris et des Pays Bas, Société Générale, Credit Lyonnais, and the Banque d’Escompte; 3 million from the Société de Credit, 2.5 million from the Société de Depots et Comptes Courants, and 1 million each from the Banque Hypothecaire, Credit Mobilier, Credit Mobilier Espagnol, Banque Ottomane, Banque Franco-Egyptian, Credit General Francais, and the Banque de Constantinople (Compte rendu, 1882).³¹

On the first settlement day, 14 agents asked for assistance. Not only did the Chambre have to provide this aid but it also had to help facilitate the reports. All totaled 66,800,000 francs were requested, leaving 12,000,000 left from the loan. Combined with the remaining 7 million from the Common Funds, there were only 19 million francs left. This sum did not suffice for the second settlement day and the syndic obtained a second 18 million loan from the Rothschilds.³²

Having surmounted the liquidity crisis, 50 million francs of the 80 million were quickly repaid. The syndic, Ferdinand Louis Moreau hoped that the remaining eight indebted brokers would soon be able to repay the advances they had received (Compte rendu, 1882). In a letter of July 28, 1882, he reported that the debt now stood at 29,250,000 francs, which appeared as a liability of the Common Fund. He believed that they would soon be able to pay off the remaining 20 million. Moreau found this indebtedness humiliating, waiting and hoping that the liquidation of Union Générale would bring in more funds. He begged the members to consider each one raising 350,000 francs for the common fund from their own pockets and those of their partners.

While the Paris stock brokers were bailed out on January 25, no such aid was forthcoming for Lyon. Between January 20 and 30, the president of the Chamber of Commerce, the head of the Société Lyonnaise de Dépôts, and three stock brokers, including the syndic, headed to Paris where they visited the Banque de France, the Minister of Finance, the leading bankers, and the President of the Republic. They were told that the government would not “intervene in private calamities.” (quoted in Bouvier, p. 193). This hesitancy reflected the center-left government, which showed little interest in assisting the conservatives of Lyon. The situation of the Lyon brokers was desperate; there were enormous inter-broker debts and debts between brokers and their clients. The net debt of the brokers was 63.7 million francs; when combined with the other debts, the sum totaled 191 million. In the absence of any aid to resolve the liquidity crisis, the Tribunal de Commerce announced the liquidation of the exchange, naming a liquidator on January 28. In the liquidation that followed, nine brokers proved to be insolvent.³³

³¹The curb market in Paris was also provided with aid from the leading banks of approximately 20 million in advances to the leading firms. According to Bouvier, a total of 175 million francs was required in Paris (including the loans to the brokers of the parquet and coulisse) in order to finance the reports.

³²The Compte rendu indicates that the 18 million loan was quickly repaid.

³³A new chambre syndicale was created with a new syndic on May 13, 1882, but by July 6, only 16 brokers’ offices were open. The price of a Lyon broker’s office fell from 800,000 to 60,000 francs.

Creditors received bonds from the chambre syndicale that were slowly redeemed over the next decade.³⁴

The market correction was needed as it was generally conceded that basically sound securities had been overpriced. Although he had engaged in fraud, Bontoux's enterprises had a grounding in the development of the Balkan railroads; in bankruptcy of his enterprises eventually paid out over 80 of their liabilities.³⁵ After the crash, the Comptoir d'Esompte de Paris picked up the pieces, and the Vienna-Constantinople line via Belgrade opened in 1888. (Bouvier, p. 104, 229). In the November 1882 issue of the Journal des Economists, Léon Say wrote about Union Générale: "It was not surprising that a bank that had speculated in its own shares could not meet its commitments on the Bourse. The essential problem was that for two years, France had placed its savings in imaginary or unprofitable enterprises, which it lost. If the crisis had not been produced by this bank it would have occurred by another means. If speculation had not ventured through this channel it would have gone down another.....The country had to liquidate the vast losses it had experienced."

Bad Debts

Having made it past the end of January settlement, the liquidity crisis was over but the Compagnie in Paris was left with bad debts. Details in the archives about the nature of these liabilities are sketchy. While the personal dossiers of most brokers are complete, all brokers' twice yearly reports of income for the years of the crash are missing. This material appears to have been removed at the time of the crisis, as a lawsuit soon after the crisis indicates there were no relevant documents present. The dossiers of the individual brokers who failed were apparently cleaned up, but they still provide some evidence.

Four brokers immediately failed as a result of the crash and they formally gave up their offices on the same date, March 29, 1882. They were Paul-Edmond Mahou who became an agent de change in 1854, Augustin LeGrand who started in 1868, Denis-Paul-Alfred Sucedé who took office in 1873 and Albert-Marie-Henri Ramel who joined the bourse in 1865. Two additional agents gave up their office on April 24, 1882, Phillippe-Adolphe Evrard (1868) and Marie-Philippe-Adolphe Tollin (1870). Whether these departures or that of Leon-Edouard Lehoux (1862) who left office on May 29, 1882 were connected to the crash is unclear.

Typical of the empty dossiers is the one for the broker Mahou. He was deeply involved in the speculative ventures that had been launched in Lyon, notably the Banque

³⁴ The stockbrokers of Nice were caught in the panic and their parquet was suppressed by decree in 1889.

³⁵ In February 1882, Union Générale went into bankruptcy, then in March 1883, the Cour d'Appel de Paris condemned Bontoux to five years in prison for having fraud. While on appeal, Bontoux fled France. (Bouvier, pp. 214-218). Bontoux claimed that the Jewish and Freemason (Protestant) bankers wanted to see him fail. His defenders claimed that he was a victim of a "syndicat à la baisse" a bear pool run by the Jewish bankers, Crédit Lyonnais, and the Banque de Paris et des Pays-Bas. The press on the right took up Bontoux's claim that Jewish finance and freemasons in the government had conspired to bring down Union Générale. This idea gained wide currency, and was spread by non other than Emile Zola in his novel L'Argent. This this novel young financier Saccard with clerical sympathies and his Banque Universelle are destroyed by the Jewish banker king, Gundermann. (Ferguson, 1999, pp. 262-263.).

de Lyon. Unfortunately, Mahou's dossier does not allow us to reconstruct his demise as there is considerable missing material. What information that is available is limited. Between 1867 and 1880, the staff of his office had grown from 21 to 28. The income reports are only for 1863, and the partnership agreements only exist up to 1878. When Mahou began the total capital of his partnership was 1,450,000 francs, of which he contributed 352,500 francs. By 1878, total capital had increased to 2,250,000 francs, where he had provided 800,480 francs.³⁶

Sucède's dossier had more information. He contributed 1,001,250 francs to the capital of his partnership of 2,225,000 when he began as an agent de change in 1873. Two of his partners were Isacc and Eugène Péreire who contributed 333,750 and 445,000 francs, in addition to a M. Guastalla who provided 445,000. The presence of the Péreires suggests that he too was tangled up with speculative ventures in Lyon and further east. The reports of income indicate that his brokerage, operated with a staff of about 18, was quite profitable up to the crash. Except for a bad second semester in 1875, brokerage fees yielded the partnership earnings of roughly 260,000 a year on capital of 2,225,000. Although he had ceased to be a broker, Sucède continued to pay his debts to the Compagnie, remitting 285,000 francs to the syndic on April 11, 1882, noting an additional payment of M. Sabatier of 15,000 to his account. In his dossier, there is also undated draft of an agreement between the syndic and Sucède on how to resolve his debt. Owing a sum of 537,946.52 that had been advanced to him by the Common Fund on February 1882, he proposed to extinguish this debt with a cash payment of 200,000 francs and a transfer of the ownership of 12,000 francs of 3 percent rentes (nominally worth 400,000 francs).³⁷

Although some of the brokers like Sucède could pay off a portion of their bad debts, payments were slow and fell far short of the sums immediately required. Most of the 80 million franc loan from the bankers' consortium had been paid off, but 29.3 million francs remained in July 1882, declining to 27.4 million by the end of the year. The bankers were anxious to be repaid, and the brokers feared for the future of their monopoly if they remained in debt. Thus, the question was how would the brokers who were collectively responsible bear the burden? There appears to have been considerable dissension, even with as few as sixty brokers some had much stronger and more profitable offices. In the meeting of the Chambre on October 13, 1882, the syndic Moreau offered several choices.³⁸ The Compagnie could obtain a long-term loan and slowly pay it off, but this was felt to be politically undesirable if not financially impossible. Alternatively, the brokers would have to raise the money themselves. They argued over whether they would each have to pay an equal amount or figure out some way of allocating it proportionally. They settled on a fixed contribution of 300,000 francs for each of the sixty brokers.³⁹ This raised 18 million francs, which combined with the 8.7 million francs in the Common Fund, just covered the repayment of the

³⁶ The rise in capital was attributable to a 500,000 increase in the price of the office, a 125,000 increase in the surety bond, 25,000 for the caisse commune, and 150,000 for working capital.

³⁷ The agreement indicated that a certain Madame Waille would continue to receive interest on the rentes for her lifetime. (Dossier Sucède)

³⁸ Chambre syndicale, *Séances*, Vol. 26, October 13, 1882.

³⁹ One agent appears to have borrowed 500,000 from a private source to pay this sum and continue with business. Many others appear to have renegotiated their contracts with unhappy partners.

consortium's loan. This internal loan appears in Table 2, first combined with the security bonds and then the secondary reserve.

The mid-1880s were lean times for the brokers, a stunning reversal of the earlier prosperity. When the General Assembly had met on the eve of the crash, on December 19, 1881, they basked in their good fortune. Revenues for the Compagnie had jumped from 5.0 to 7.5 million francs. Even though trades of government securities had declined, the booming market with surging volume had raised receipts from the stamp tax and the reports. The brokers took some precautions, creating a new category of secondary reserves (Reserve No. 3) to bolster the secondary reserves of the Common Fund. This portion of the fund rose to 1,282,770 francs, finally exceeding the level of 1873. The brokers were also generous to themselves, raising their rebates from a total of 3,960,000 francs in 1880 to a round 6,000,000 in 1881.

The crisis crushed the bourse; there would be no rebates, as the surplus income had to pay the huge debt. As volume fell on the exchange in 1882, revenues to the Compagnie plummeted. Even though they were offset some by the temporary doubling in revenue from interest on reports, income was down to 6.2 million. Expenses were in line with previous years, except for the 1,528,356 francs in interest on the loans to the Chambre syndicale. The syndic Moreau reported on the state of the Common Fund on November 10, 1882. Nominally, the Common Fund stood at 29,712,277 francs. This sum was composed of the 6 million francs in brokers' security bonds to which was added 17.7 million loan (soon to be a complete 18 million when the last broker made his 300,000 franc contribution) for a total of 23.7 million. The secondary reserves were 1.3 million, and Treasury reserves, 1.2 million francs. However, the Compagnie had few available funds to meet any new crisis, as the consortium loan had been used to bail out the Common Fund when it paid off the bad debts. The records point to the fact that 27.4 million francs were granted as "advances" to brokers. Shown in Figure 2, the net capital of the Common Fund, available for any new losses was only 2.3 million. From Tables 1 and 2, it is clear the whole of the surplus 3.2 million francs from the Compagnie's revenue was transferred to the amortization account to begin the process of accumulating the funds needed to pay off the loan.

The crash also took its toll of the officers and brokers. The syndic Moreau retired immediately after seeing the bourse through the crisis. He had been a broker on the exchange since 1853 and the syndic for 21 years. He was careworn and died shortly thereafter.⁴⁰ He was succeeded by August Fernando Hart, who had been a broker since 1856. The value of the bourse as financial institution was impaired and openly questioned in Parliament. Even though, the chambre syndicale was loathe to allow a drop in the price of brokers' offices, its quote fell from 1.8 to 1.7 million francs between January and February 1882.

In 1883 and 1884, the revenues of the Compagnie continued to decline as the stamp tax fell with volume, and expenses remained high because of interest costs, legal fees and publicity. In addition to lower revenues, collection of debts proved sometimes difficult. In his 1883 annual report, the syndic reported that the Compagnie was not treated the same as other debtors of Union Générale.⁴¹ Even the welcome 1885 law, legalizing the futures market did not do so retroactively, preventing the chambre

⁴⁰ Compte rendu 1884, p. 1.

⁴¹ Compte rendu 1883.

syndicale from going after defaulting clients.⁴² However in 1884, the collections of debts in addition to ordinary revenues permitted the reconstitution of the common fund (the 6 million in the security bond column in Table 3) and the reimbursement of three million of the brokers 18 million franc loan (Compte rendu, 1884). Interest on the 18 million franc loan contracted by the Chambre syndicale cost the Compagnie 900,000 francs per year. This loan was “added” to the bonds of the brokers, so that instead of being recorded as 6 million, they had 24 million in 1883, though accounting shifted the figures to the secondary reserve in 1884, showing 15 million. Together with amortization charge of 6,544,026, growing to 9,926,708 in 1884, this brought the total Common Funds account to 33,063,918 francs in 1883 and 32,397,821 in 1884. Advances to brokers stood at 25,651,805 in 1883 and 25,098,467 in 1884.

Business remained slow and the number of securities on the Cote officielle continued to fall until 1886. In 1885, revenues and expenses were little changed, and the surplus was diverted to the amortization charge in the Common Fund, which rose to 12.6 million francs. The syndic Ferdinand Louis Hart complained that it was painfully difficult to repay the loan (Compte rendu, 1886). The loan had fallen from 18 million to 15 million in the first half of 1885 and 12 million in the second half of the year. The amortization charge grew to 15.9 million, with the loans to brokers dropped to 23.4 million. By 1887, revenues had recovered to 6.6 million, producing a surplus of 4.6 million. The Common Fund stood at 26.8 million, of which amortization accounted for 20.6 million, with loans of 22.5 million francs to the brokers.⁴³

In 1888, revenues were slashed by the absence of the collection of the stamp tax in the first half of the year—a development unexplained by the annual report. This change left the Compagnie with a very small surplus. Revenues rose to 4.4 million francs in 1889, yielding a surplus of 3.2 million francs. The surplus from the years 1882 to 1890 totaled 22.4 million, enough permit the repayment of the loan and recapitalize the Common Fund by the end of 1889. The syndic Hart commented that the “this felicitous result of the complete amortization of the account for Loans to Brokers has allowed the rebates of the stamp taxes to begin.” Metaphorically referring to the departure of occupying troops after the Franco-Prussian war and the payment of reparations, he considered the repayment a solemn date for the Compagnie when she could celebrate the “liberation of her territory.”

The annual report for 1890 showed a surplus of 3.6 million, allowing the secondary reserves of the Common Fund to increase to 4.4 million. The fund reached a total of 10.6 million francs, well above the pre-crisis level; and rebates could begin once again after an interval of eight years. The Common Fund continued to modestly increase until 1893 when a decline in revenues coupled with a very large and unexplained expenditure of 1,113,155 francs caused it to decline.⁴⁴ From 1894 to 1897, the secondary reserve was allowed to slowly shrink. The last substantial increase in the Common Fund came from the security bonds of the ten new brokers, adding 10 million francs in 1899.

⁴² Compte rendu, 1885.

⁴³ The broker Vuaflart appears to have defaulted. Check “L’affaire Vuaflart,” Chambre syndicale, Séances, Vol. 27, pp. 94ff.

⁴⁴ The relatively modest building reserve of 200,000 francs was depleted in 1894 and 1895.

Long Term Consequences for the Bourse

The crash and inability of the exchange to carry out the settlement in January 1882 without assistance from the Banque de France exposed the bourse to an attack on its privilege. The syndic Moreau described the situation:

at the moment when it seemed all would crumble around us, when the exchange in Lyon fell into bankruptcy from which it could not rise, and the coulisse closed its counters, following their habit in troubled times, only we remained imperturbable with our will to preserve our honor and not give up a minute or a centime....Irritated by our solidarity that highlighted their weakness, our enemies sought to injure us. In the overexcited Chamber of Deputies, many representatives demanded the suppression of our privilege, a word that sounded wicked to the ears of that republican chamber. If the voice of M. Say, Minister of Finances, had not been raised at that moment to render homage to our loyalty, not a word would have been spoken in our favor.” (Compte rendu, 1882).

In spite of Moreau efforts to make the brokers look like the heroes of the crisis; it was the brokers who needed to be rescued. Bourse de Paris' dominance of the securities market suffered an extraordinary blow in the Krach of 1882, from which it did not recover. Figure 4 shows that January 17, 1882 marked the hide tide of office prices for the Paris brokers, and implicitly the value of the exchange as an institution. Although the chambre syndicale tried to maintain high prices and resisted lowering them, prices moved only downwards in the next three decades in spite of a booming market for securities in the 1890s.

While politicians hesitated to assault the privileges of the agents de change, the Coulisse did not. The brokers operating on the coulisse had also found themselves in illiquid positions during the crash. Casual references indicate that they received a short-term loan of 20 million francs to unwind their positions. But it seems that the coulisse suffered less because there were far more brokers, causing counterparty risk to be more diversified. Some curb brokers may have failed; but the survivors did not bear the burden of repaying collective debts, like their competitors on the bourse, and vigorously sought new business.

While the rise of the Coulisse in the early 1890s to a position where it had a greater volume than the Parquet has been described but not well explained. The curb brokers did not bear the costly obligation to repay a large debt, nor did they have to maintain a common fund. The greater number of brokers on the Coulisse prevented a concentration of counterparty risk. These advantages enabled the Coulisse to take over business from the weakened bourse and successfully challenge its dominance by the end of the century.

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Table 1
Revenues and Expenditures of the Compagnie des agents de change de Paris
1873-1907
(francs)

Year	Total Receipts	Stamp Taxes	Interest on Reports	Treasury Fees	Other	Total Expenses	Surplus	Reimbursed to Agents	To the Common Fund
1873	5,525,920	4,128,162	399,845	922,425	75,488	797,300	4,728,619	4,620,000	108,619
1874	5,244,029	3,769,235	333,934	1,073,522	67,338	742,642	4,501,387	4,560,000	-58,613
1875	5,585,136	4,287,462	219,370	1,011,890	66,414	1,477,885	4,107,251	4,200,000	-92,749
1876	5,103,606	3,878,635	106,195	1,058,981	59,795	633,075	4,470,530	4,200,000	270,530
1877	4,219,873	3,123,385	20,875	1,023,104	52,509	799,873	3,420,000	3,420,000	0
1878	4,408,746	3,209,235	86,845	1,066,589	46,077	748,746	3,660,000	3,660,000	0
1879	5,042,788	3,787,019	204,687	975,900	75,182	728,762	4,314,026	4,260,000	54,026
1880	5,022,464	3,781,175	208,276	913,170	119,843	1,062,464	3,960,000	3,960,000	0
1881	7,452,967	6,222,483	344,216	782,475	103,793	1,452,967	6,000,000	6,000,000	0
1882	6,204,923	4,641,979	682,479	789,373	91,092	2,948,026	3,256,896	0	3,256,896
1883	5,270,763	4,316,647	86,617	769,265	98,234	2,033,883	3,236,880	0	3,236,880
1884	4,330,153	3,385,659	146,762	738,922	58,810	1,990,971	2,339,181	0	2,339,181
1885	4,226,892	3,304,611	119,112	735,685	67,484	1,818,701	2,408,191	0	2,408,191
1886	4,570,201	3,650,435	109,951	742,626	67,189	1,450,792	3,119,409	0	3,119,409
1887	6,698,759	5,693,092	110,874	746,871	147,922	2,101,842	4,596,917	0	4,596,917
1888	1,599,595	625,171	120,387	742,537	111,500	1,021,071	578,524	0	578,524
1889	4,408,479	3,405,579	222,598	687,156	93,146	1,188,810	3,219,669	0	3,219,669
1890	4,726,823	3,768,665	210,875	658,711	88,572	1,080,723	3,646,100	2,484,986	1,161,114
1891	4,637,277	3,577,679	288,220	665,713	105,665	1,349,808	3,287,469	3,189,968	97,501
1892	4,160,280	3,263,328	183,642	635,548	77,762	1,981,922	2,178,357	2,046,647	131,710
1893	3,905,562	2,918,978	194,249	716,649	75,686	2,477,519	1,428,043	1,760,287	-332,244
1894	4,470,524	3,476,114	204,240	659,168	131,002	1,657,110	2,813,414	2,087,029	726,385
1895	4,156,048	3,250,667	251,009	545,498	108,874	1,524,590	2,631,457	2,793,017	-161,560
1896	3,399,420	2,468,414	198,777	545,498	186,731	1,461,292	1,938,128	2,029,613	-91,485
1897	3,377,260	2,451,896	202,372	539,742	183,250	1,972,640	1,404,620	1,531,118	-126,498
1898	3,516,853	2,548,826	251,867	480,547	235,613	2,836,080	680,773	1,325,883	-645,110
1899	5,264,872	4,074,968	581,174	465,423	143,307	1,684,490	3,580,382	2,310,000	1,270,382
1900	4,876,248	3,992,695	305,209	441,931	136,413	1,733,645	3,142,603	2,800,000	342,603
1901	4,328,911	3,486,249	238,069	465,860	138,733	2,108,340	2,220,571	2,598,158	-377,587
1902	4,511,802	3,566,020	334,195	460,762	150,825	1,947,984	2,563,818	2,099,999	463,819
1903	4,690,622	3,734,439	377,167	470,191	108,825	2,182,886	2,507,736	2,520,001	-12,265
1904	4,087,629	3,355,403	320,235	295,870	116,121	2,351,200	1,736,429	1,820,000	-83,571
1905	4,945,275	4,190,658	173,164	397,765	183,688	2,541,665	2,403,610	1,959,999	443,611
1906	4,705,014	3,927,683	228,205	406,497	142,629	3,087,157	1,617,857	1,680,001	-62,144
1907	5,602,893	4,250,204	454,325	378,052	520,312	2,719,347	2,883,546	2,240,000	643,546

Source: Rapports de la Commission de Comptabilité de la Caisse Commune en Assemblée générale de la Compagnie, 1873-1907.

Figure 1
Revenues and Expenditures of the Compagnie des agents de change de Paris
1873-1907

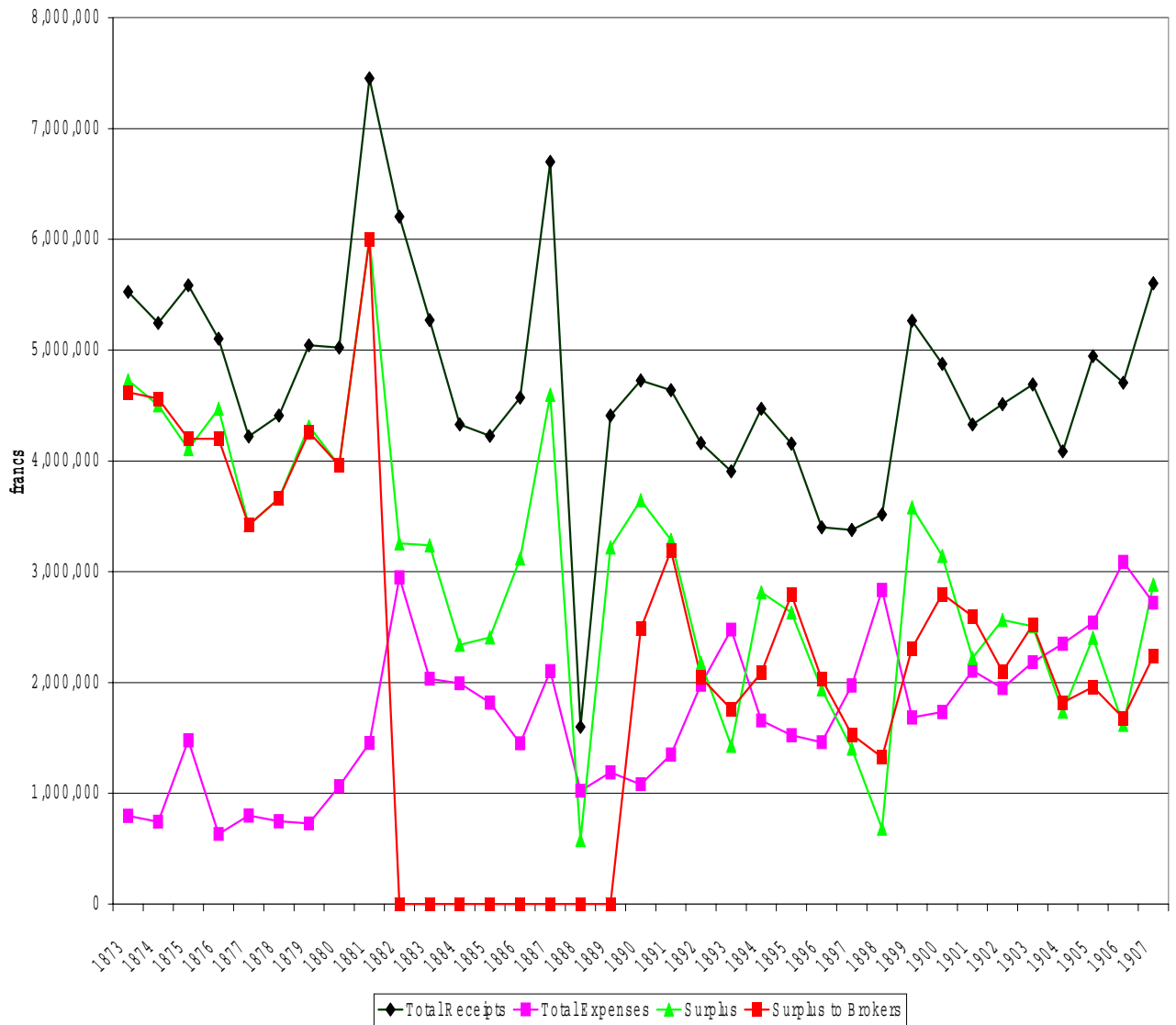


Table 2
Assets and Liabilities of the Common Fund
1873-1907
(francs)

	ASSETS			LIABILITIES					
	Total	Reports, Rentes and Cash	Advances to Brokers	Total	Security Bonds	Secondary Reserves	Treasury rESERVES	Building, Printing Other	Amorti- zation of Loan
1873	7,558,394	7,558,394		7,558,394	6,000,000	903,592	644,304	10,498	
1874	7,880,174	7,880,174		7,880,174	6,000,000	859,130	743,560	277,484	
1875	7,378,326	7,378,326		7,378,326	6,000,000	556,943	821,382	1	
1876	7,501,148	7,501,148		7,501,148	6,000,000	580,795	885,353	35,000	
1877	7,599,904	7,599,904		7,599,904	6,000,000	564,998	926,135	108,771	
1878	7,801,960	7,801,960		7,801,960	6,000,000	636,066	1,029,450	136,444	
1879	7,929,245	7,929,245		7,929,245	6,000,000	674,071	1,118,297	136,877	
1880	8,117,527	8,117,527		8,117,527	6,000,000	714,548	1,202,529	200,450	
1881	8,726,625	8,726,625		8,726,625	6,000,000	1,282,770	1,201,481	242,374	
1882	29,713,277	2,324,600	27,388,677	29,713,277	23,700,000	1,354,812	1,161,568	240,001	3,256,896
1883	33,063,918	7,412,113	25,651,805	33,063,918	24,000,000	1,052,122	1,227,770	240,000	6,544,026
1884	32,397,821	7,299,354	25,098,467	32,397,821	6,000,000	15,000,000	1,231,112	240,001	9,926,708
1885	29,093,277	5,274,692	23,818,584	29,093,277	6,000,000	9,000,000	1,244,852	240,001	12,608,424
1886	28,144,871	4,720,824	23,424,046	28,144,871	6,000,000	6,000,000	0	240,000	15,904,871
1887	26,841,531	4,311,478	22,530,053	26,841,531	6,000,000		0	240,000	20,601,531
1888	27,665,105	5,533,440	22,131,665	27,665,105	6,000,000		0	240,000	21,425,105
1889	9,487,994	9,487,994		9,487,994	6,000,000	1,954,447	1,293,547	240,000	
1890	10,649,108	10,649,108		10,649,108	6,000,000	3,072,774	1,336,334	240,000	
1891	10,746,609	10,746,609		10,746,609	6,000,000	3,169,958	1,334,791	241,860	
1892	10,878,319	10,878,319		10,878,319	6,000,000	3,262,963	1,372,131	243,225	
1893	10,546,075	10,546,075		10,546,075	6,000,000	2,939,834	1,363,016	243,225	
1894	11,272,460	11,272,460		11,272,460	6,000,000	3,733,243	1,401,502	137,715	
1895	11,110,900	11,110,900		11,110,900	6,000,000	3,692,710	1,374,762	43,428	
1896	11,019,415	11,019,415		11,019,415	6,000,000	3,631,970	1,387,445	0	
1897	10,892,917	10,892,917		10,892,917	6,000,000	3,479,412	1,407,622	5,883	
1898	10,997,807	10,997,807		10,997,807	6,750,000	3,168,057	1,079,750	0	
1899	12,518,189	12,518,189		12,518,189	7,000,000	4,519,289	998,900	0	
1900	12,860,792	12,860,792		12,860,792	7,000,000	4,862,802	997,990	0	
1901	12,483,205	12,483,205		12,483,205	7,000,000	4,488,365	994,840	0	
1902	12,947,024	12,947,024		12,947,024	7,000,000	4,965,624	981,400	0	
1903	12,934,759	12,934,759		12,934,759	7,000,000	4,962,179	972,580	0	
1904	12,851,188	12,851,188		12,851,188	7,000,000	4,878,258	972,930	0	
1905	13,294,799	13,294,799		13,294,799	7,000,000	5,307,239	987,560	0	
1906	13,232,655	13,232,655		13,232,655	7,000,000	5,288,853	943,802	0	
1907	13,876,201	13,876,201		13,876,201	7,000,000	5,936,031	940,170	0	

Source: Rapports de la Commission de Comptabilité de la Caisse Commune en Assemblée générale de la Compagnie, 1873-1907.

Figure 2

**The Common Fund
1873-1907
(francs)**

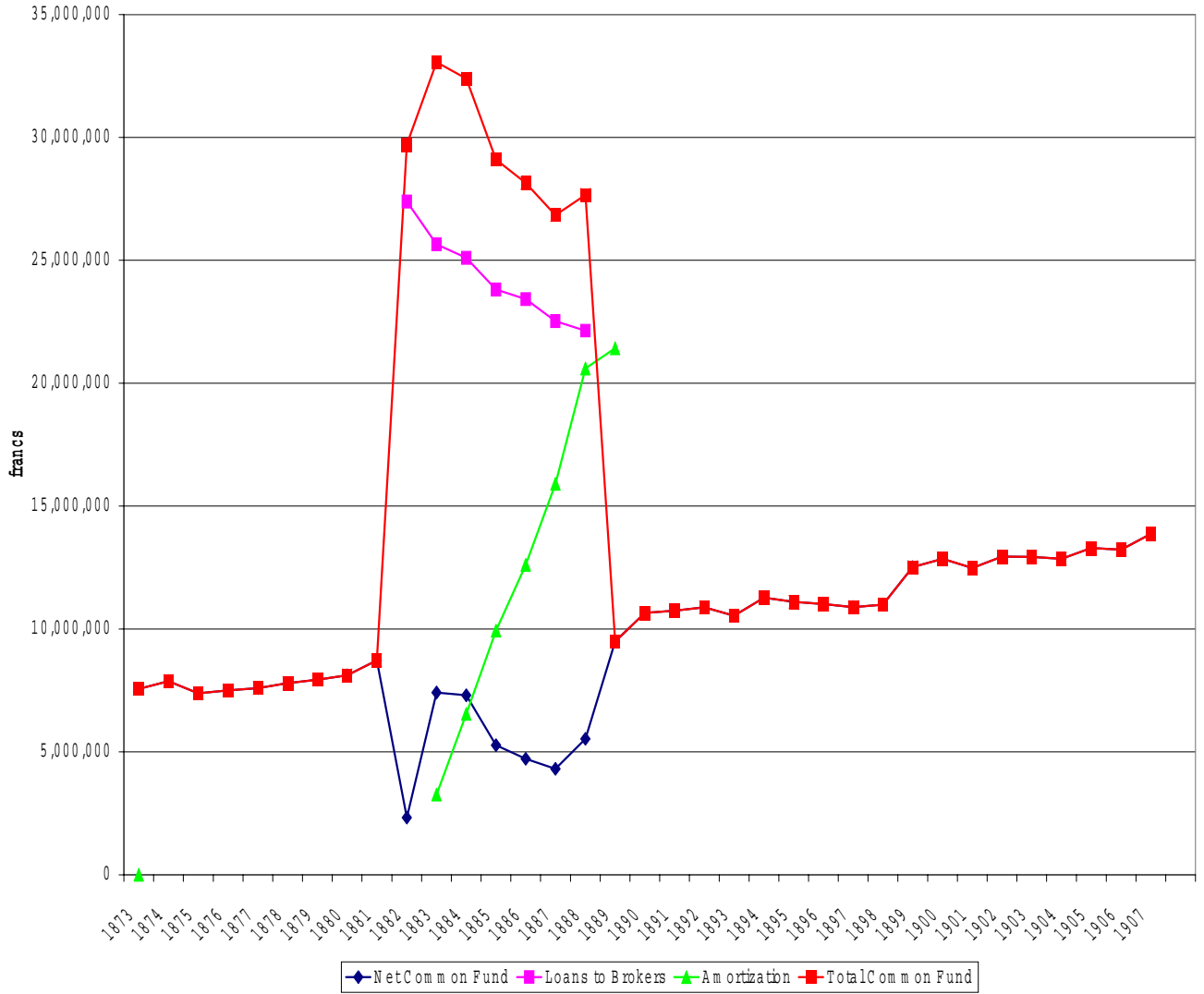
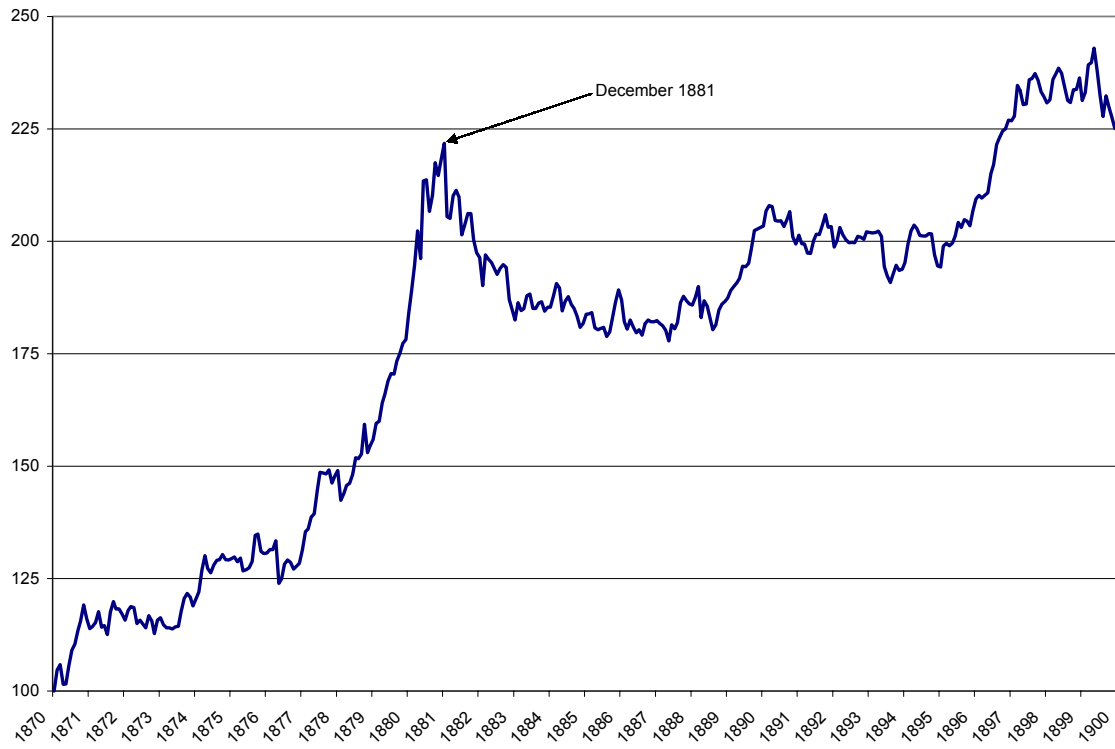


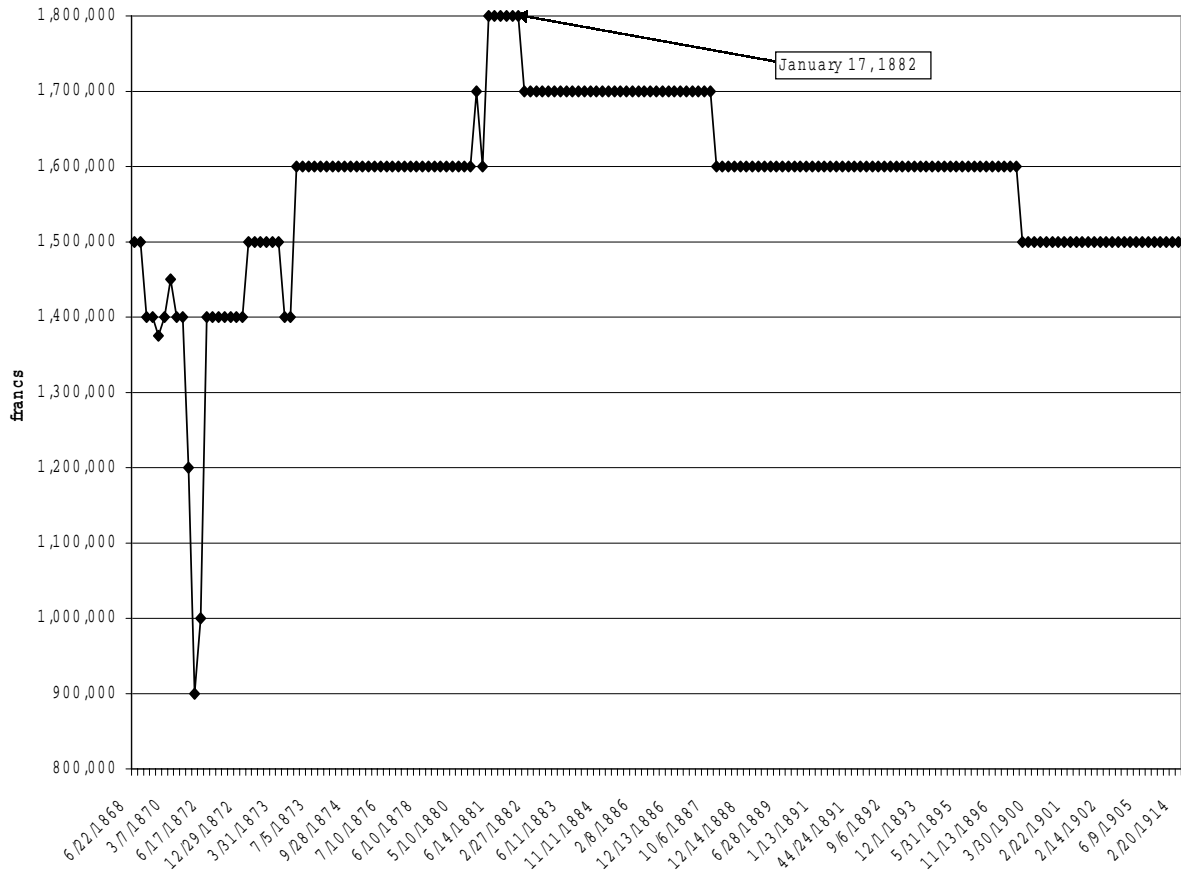
Figure 3

Index of Shares Traded on the Paris Bourse



Source: Arbulu (1998)

Figure 4
Price of a Broker's Office on the Paris Bourse
1868-1914



Source: Chambre syndicale de la compagnie des agents de change, *Séances*, Vols. 22-36.