

The Paris Financial Market in the 19th Century: Complementarities and Competition in Microstructures

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Abstract

Financial history usually considers London as the only center of the late 19th century's financial globalization, and explains this partly by the superior organization of the London Stock Exchange. Our paper sets out to explain why the Paris *Bourse* was also highly successful in spite of the supposedly inefficient monopoly and regulations that the State imposed on the official market, the *Parquet*. The literature argues that the official monopoly was sidelined by a free, innovative market known as the *Coulisse*, but it fails to recognize the value of the services provided by the *Parquet* (security, transparency and settlement-delivery) and its complementarities with the *Coulisse*. In line with recent theoretical developments, we argue that this multi-polar organization had important virtues for market participants, since it allowed the exchanges to specialize in different investors and services and made the exchanges complementary to each other. We demonstrate our claim by looking at both the formal rules and the actual functioning of the *Parquet*, drawing on its archives which we have recently classified.

Résumé

L'histoire financière explique souvent le succès de Londres comme marché financier dominant au 19^e siècle par les microstructures efficaces de la Bourse de Londres. Cette dernière se caractérise en particulier par une faible régulation, l'entrée libre des opérateurs, ce qui permettrait de réduire les coûts de transaction, d'accroître la liquidité et la diversification, attirant à la fois émetteurs et investisseurs. Nous montrons que les microstructures londoniennes ne sont pas nécessairement optimales et que des microstructures très différentes ont permis le succès de la Bourse de Paris, loin de l'idée reçue selon laquelle cette place aurait été victime d'un interventionnisme inefficace ou d'un monopole hostile à toute innovation. Nous étudions en détail l'organisation du Parquet parisien et ses complémentarités avec la Coulisse, le marché libre et les opérations des banques. Nous montrons qu'une telle organisation multi-polaire était efficace car elle permettait une spécialisation des agents (aussi bien intermédiaires qu'émetteurs et investisseurs) et des complémentarités qui permettaient au marché de joindre développement et stabilité.

JEL: G14, G18, G24, G28, N 13, N23, N43

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1. Introduction

Financial markets are unique because the provision of liquidity is central to their economic role and hence their very existence¹. Speculation is essential to the provision of liquidity since only players targeting short-term gains from speculation and arbitrage conduct enough operations for these markets to be liquid. Nevertheless, speculation usually goes hand in hand with credit and leverage, which create booms and busts and hence the potential for defaulting and disruption in the flow of transactions. The main challenge in organizing stock exchanges is how to maximize liquidity while minimizing the related risks. This article shows how the 19th century Paris financial center dealt with this issue. As such, it forms part of a recent body of literature that argues that financial markets' microstructures (trading rules and market organization) are key to understanding their development².

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¹ Navin and Sears, 'The Rise of a Market'; Levine and Zervos, 'Stock Markets'.

² See Biais, Glosten, and Spatt, 'Market Microstructure', and Madhavan, 'Market Microstructure' for recent reviews of the field.

Historians have studied London and New York in detail, possibly because of their dominance today. The London Stock Exchange is usually seen as the model example of an open competitive market, and many have argued that this model explains, at least in part, the success of London as a financial center³. New York's growth is harder to understand in this context because the New York Stock Exchange was a private institution that restricted entry and competed with other exchanges such as the Curb⁴.

Less attention is paid to Paris⁵ despite its being the leading financial market in continental Europe throughout the 19th century⁶. In 1906, traded volumes on the official exchange soared to triple French GDP, and volumes on the other exchanges stood at at least half as much⁷. The market capitalization of French shares listed on the official exchange represented about 50% of GDP while that of French bonds represented 100% of GDP, and that of foreign securities amounted to almost 150% more⁸. As a financial center, Paris was stood head and shoulders above Berlin despite a much larger German economy on the eve of World War One⁹. This financial development was not a recent phenomenon: the record volume on the forward market had been reached in the 1881 bubble.

So it is puzzling that most studies address Paris from the point of view of the London market, with which it is negatively compared because of its monopolistic organization¹⁰. This then raises the major question as to what that monopoly meant and what its consequences were.

The few existing histories of the Paris Stock Exchange¹¹ report that the official market, or *Parquet*, organized by the *Compagnie des Agents de Change* (now CAC, the 'guild' of

³ See, for example, Davis and Neal, 'The evolution of the structure'; Michie, 'Different in Name Only?'; idem, *The London Stock Exchange*; Neal, 'The London Stock Exchange in the first age of globalization'; Cassis, *Les capitales du capital*.

⁴ Mulherin, Netter, and Overdahl, 'Prices are property'; Brown, Mulherin, and Weidenmeier, 'Competing with the NYSE'; Davis, Neal, and White, 'How it all began'; White, 'Competition among the Exchanges'.

⁵ Other countries have by and large been overlooked, at least in the English language literature. See, however, Riva on the Italian markets, 'Compétition entre places financières'; idem, 'Les grandes Bourses italiennes'; Baia Curioni, *Regolazione e competizione*; idem, *Modernizzazione e mercato*; on the Spanish markets, Houpt and Rojo Cigales, 'Regulation and microstructure'; Battilossi and Houpt, 'Predicting institutional collapse?'

⁶ Recent quantitative assessments of the development of the Paris Stock Exchange include data on stock issues (Hautcoeur, 'Le marché boursier'; idem, ed., *Le marché financier*), stock indices (Arbulu, 'Le marché parisien des actions'; Le Bris and Hautcoeur, 'A Challenge to Triumphant Optimist?'), bond indices (Vaslin, 'Le marché des rentes françaises'; Rezaee, 'Creation and development of a market'), and traded volumes (Hautcoeur and Riva, 'The Paris financial market').

⁷ Box B 64.877, Centre des Archives Economiques et Financières for 1906 data on traded volumes. The comparison with the other markets is based on our calculations using 1906 data on taxes on traded volumes published by the Ministry of Finance in the *Bulletin de Statistique et Législation Comparées*, 1907, various issues.

⁸ Bozio, 'La capitalisation boursière', Appendix A; Moreau-Néret, *Les valeurs mobilières*, p. 296.

⁹ Rajan and Zingales, 'The Great Reversals'.

¹⁰ Cassis, *Les capitales du capital*; Davis and Neal, 'The evolution of the rules'; Davis, Neal, and White, 'How it all began'; Michie, 'Different in Name Only?'

official brokers) tried to maintain its monopoly on stock exchange transactions throughout the 19th century by capturing the government's decisions, but it was so costly that independent brokers organized a parallel free market called the '*Coullisse*'. This market is usually seen as the most dynamic and innovative part of the financial center.

Aside from a few (recent) exceptions¹², the historical literature on the Paris financial market suffers from two serious shortcomings. First, it relies on frequently flawed sources. There is a great deal of easily accessible information on the legal and institutional rules but, as we will show, they were not always enforced. Accounts by contemporaries are also easily accessible, but they were frequently published in a specific context by interested insiders trying to win a debate by writing their own version of history, standard practices and trading traditions. Since many of these accounts, in the French case, were produced around 1900 but argued that the market's organization had not changed since the foundation of the *Bourse*, they painted an erroneous picture of the Paris Stock Exchange as a permanent organization lacking innovation¹³. That literature makes little use of primary sources. However, the newly classified *Compagnie des Agents de Change*¹⁴ archives provide an understanding of actual market players' behavior and motivations, and explain how the organization of the Paris *Bourse* changed over the 19th century.

The second drawback with the historical literature on Paris stock exchanges is that it uses an oversimplified conceptual framework. In particular, it frequently focuses on competition among brokers in a specific organized exchange and overlooks competition among exchanges in a financial center¹⁵. Even though the best studies overcome this shortcoming in the case of the New York Stock Exchange¹⁶, the approach is still dominant, and clarification is needed for an understanding of the Parisian financial market. Furthermore, the literature still concentrates on one aspect of the services provided by exchanges, namely liquidity, and understates the importance of others, such as the fairness of prices, protection against broker defaulting, price

¹¹ Vidal, *Traité*; Quennouelle-Corre, 'The Paris Bourse'; Romey, 'La Bourse de Paris'; White, 'The Paris Bourse, 1724-1814'.

¹² Mainly, Verley, 'Organisation of National Financial Market'.

¹³ See, for example, Aupetit, Brocard, Armagnac, Delamotte, and Aubert, *Les grands marchés*; Boissière, *La Compagnie*; Boudon, *La Bourse*; Gibson, *The Stock Exchanges*; Neymarck, *De l'organisation des marchés*; Robert-Milles, *La Bourse de Paris*; Vidal, *Traité*; idem, *The History*.

¹⁴ Lagneau-Ymonet and Riva, 'Aux sources de l'histoire boursière'.

¹⁵ Gehrig, 'Competing Markets'.

¹⁶ Davis, Neal, and White, 'The Highest Price Ever'; Brown, Mulherin, and Weidenmeier, 'Competing with the NYSE'; White, 'Competition among the Exchanges'.

manipulation and fraud; all characteristics alleged to deeply affect market quality by recent (mostly theoretical) financial literature¹⁷.

In this paper, we propose a history of the Paris financial market's development based on such a broader theoretical framework. We consider the *Parquet* to be just one (important) element of the Paris securities market. We set out to understand the behavior of all the players involved, and we look into how this behavior gives rise to the existence of different markets in the Paris financial center. Our main hypothesis is that the relationship between the *Parquet* and the *Coulisse* was one of complementarity and 'cooperative competition' (or co-opetition¹⁸), based on the heterogeneity of their microstructures able to satisfy the varying preferences of heterogeneous investors and issuers. We even suggest that the government did not enforce the legal monopoly, which was just one of many organizational tools that shaped the structures of the Parisian financial center. Instead, the government imposed some specific rules on the *Parquet*, without impeding a dynamic adaptation of the two markets.

The birth of the monopoly should then be seen in terms of market police in the light of the 'legal origin' of the French institutions¹⁹ rather than as interventionist interference in actual market functioning: under Roman law, 'public order' took precedence over private contracts in the name of the general interest when government control and protection was needed. Our framework helps explaining why the regulation favored the official market without the unsatisfactory hypothesis that (captured) governments imposed an absurd organization for long periods, a hypothesis that seems at odds with an otherwise open economy, with the succession of extremely different governments (and even political systems), which all tolerated and often protected the *Coulisse*, and with the domination of *laissez-faire* economists. Moreover, this approach helps understand the statement to the formal Senate Finance Committee hearings by the head of the *Parquet* (the *Syndic*), Millon d'Ailly de Verneuil, in March 1898: 'I am convinced that closing the *Coulisse* would be disastrous [for Paris as a financial center]'²⁰.

¹⁷ Pirrong, 'The organization'; idem, 'A Theory of Financial Exchange'; Biais, Glosten, and Spatt, 'Market microstructure'; Madhavan, 'Market microstructure'.

¹⁸ In line with Brandenburger and Nalebuff, *Co-opetition*.

¹⁹ La Porta, Lopez-de-Silanes, Shleifer, Vishny, 'Law and Finance'.

²⁰ 'Je suis convaincu que si l'on supprimait radicalement la *Coulisse*, on aboutirait à des résultats fâcheux'. Verneuil, Finance Committee hearings, March 18, 1898, Senate Finance Committee session minutes, Box SG 329, file A.211, CAC Archives.

In order to examine our hypothesis, we focus on the interdependence between the different aspects of the market microstructures. We identify three categories of organizational changes: changes to the way operations were handled (trading systems, settlement and payment, price list publication); changes to investors' guarantees; and changes to the listing policies. As we will show, the *Parquet's* strength was very much due to obligations concerning pricing methods, restricted access, price publication and investors' guarantees, which made it a 'high-quality' market²¹. The importance of these characteristics and their balance changed over time. Path dependency played a role. This merits a chronological description.

2. 1801-1830: foundations

From the reopening of the *Bourse* in 1801 to 1832, most of the market's activity concentrated on *rentes*, the public debt consolidated in 1797 in a single 5% perpetual fund. The liberal order of the Revolution (as it appeared in the first version of the French Commercial Code) was more or less respected: guilds had been abolished by the Le Chapelier law, so that any collusive agreement among brokers was illegal. There was a certain amount of favoritism involved in the government's appointment of the 71 *agents de change* (official brokers) in July 1801, but expertise was a prerequisite. However, the First Consul and later Emperor Napoléon Bonaparte did not like government policy to be priced on a market, and he took advantage of the first crisis (1805) to change the tide of the *Bourse*. He re-established the monopoly of officially authorized *agents de change* for all securities operations²² and created the government-supervised CAC. The government also intervened on the markets via the network of Treasury officers and the Bank of France²³.

Despite this apparently authoritarian rule, the monopoly was not enforced and the CAC's governing body – known as the Committee – had no actual control over the *agents*. Partly because of political uncertainty and partly because of a lack of organization, the market fluctuated hugely. During that first stage, the difference between official *agents de change* and outside brokers (later called *coulissiers*) was minor. Both groups cooperated daily to form a more or less single market. First, no transfer of *rentes* (which were all registered securities)

²¹ Such a high-end exchange can also surge forwards without legislative obligations, as was the case in Milan and New York in the late 19th century (see Riva, 'Compétition entre places financières'; idem, 'Les grandes Bourses italiennes' for Italy and, *i.a.*, Davis and Neal, 'The evolution of the rules' for the USA).

²² The monopoly concerned all 'quotable' securities ('*susceptibles d'être cotés*', French Commercial Code, 1807, Art. 76). The courts enforced this interpretation of the monopoly through to 1885 (cf. Hissung-Convert, *La speculation boursière*, p. 230ss).

²³ Locré, *La législation*; Khang, 'L'Etat constructeur'.

was possible without the intermediation of the *agents*, despite the forward market being dominated by the *coulissiers*. The *Parquet's* end-of-month settlement, created in 1805, served then for the entire market. Second, the *coulissiers* also acted as dealers (as they would throughout the century), and the official brokers needed them in order to absorb the substantial proportion of orders that could not be matched in a still relatively tight market. Third, the high *agents de change* turnover made them appear no less risky than the *coulissiers*: from 1801 to 1814, 115 *agents* were appointed, 65 of whom left the profession before 1815, 46 because of bankruptcy²⁴.

However, various reasons led to the separation of the two markets. The major one was the demand for security among investors. Following the revolutionary turmoil, during which the government defaulted on two-thirds of the public debt, French investors wanted security even more than the high returns they were offered. Liquidity would come later as a result of the sheer size of the market. Later on, the Bourbon Restoration and especially the reparations required by the Allies imposed the new government to issue a huge amount of debt on the market (total debt increased by almost one-third of GDP within five years)²⁵. This required an increasing number of unsophisticated investors to be attracted towards the market by more protective rules.

The priority placed on security first of all prompted the preservation of the centralized, public quotation process: in 1801, the government decided that the *Parquet* would keep the French tradition of open outcry (*le cri*), by which the market for the leading securities – and especially the *rentes* – was highly transparent: the *agents de change* brought in their lists of orders at the opening of the session and matched them to establish the price that balanced supply and demand, in a process known as ‘fixing’ or ‘first price’ setting. This transparent price discovery process guaranteed price fairness and hence the security of the public, mainly for the small investors who had access to the prices due to their immediate and full publication in an official list. It probably also facilitated the government’s control, an important issue for the public debt.

Price fairness is stepped up if discovery process participants are pure agents. This led the government to impose single capacity on the *agents de change*, guaranteeing the absence of a conflict of interest between them and their clients. As the *coulissiers* dealt with each other

²⁴ Minutes of the *Chambre Syndicale* (CS) Meetings, CAC Archives, 20 Jun. 1814 (now quoted as CS, dd/mm/yyyy).

²⁵ White, ‘Making the French Pay’. Part of that debt was issued successfully in London and Amsterdam, but the government also reformed the Parisian market to be able to issue around half of the total in France. Gille, *La banque*; Gontard, *La Bourse de Paris*.

(and with the *agents de change*) in a bilateral manner and frequently acted as dealers, their operations were neither public nor transparent, but allowed for more flexibility and immediacy. On the opposite, the *Parquet*'s transparency and pure brokerage represented an investment in reputation aimed at investors as well as public opinion and the political sphere. In order to compete in the provision of liquidity, the Parquet had the fixing followed every day, if necessary, by various in-pit open outcry auctions, which allowed for intra-day speculation by market-makers. Nevertheless, the main characteristic of the centralized price-setting mechanism would never be modified.

Another rule designed to protect the public was the direct management of the listing policy by the government (the Minister of the Interior through to 1816 and subsequently the Minister of Finance). The law prescribed that only French duly issued securities could be admitted to the official list. The *Chambre Syndicale* (now the CS, the new governing body of the *Compagnie des Agents de Change* from 1816) passed on each application to the Minister for a decision.

These restrictions led to the publication of other lists by unofficial brokers, and to the emergence of the *Coulisse* as a 'second class' market. As early as 1814, some *agents de change* protested against these 'illegal traders' (*courtiers illégaux*)²⁶, and asked to be authorized to list foreign bonds. The Spanish government's official request, the increase in transactions of some foreign (mostly Neapolitan and Spanish) government bonds, and the crisis they suffered because of unregulated speculation in 1823 led the government to agree to consider listing them on the official market in November of the same year²⁷.

Three other solutions were discussed to strengthen the security of transactions and market stability: restrictions on the entry of new *agents de change*, improved selection of *agents*, and a mutual guarantee system for *agents*.

The *numerus clausus* of *agents de change* had been revoked in 1791. In the early years of the re-established monopoly, the number of *agents* rose without any clear limit. In 1816, the *numerus clausus* was set at 60 and the *agents* obtained the property of their seats at the Paris *Bourse* (or 'office'). It has frequently been argued that the *numerus clausus* and the *agents*' property rights were created for budgetary reasons but the government never sold the rights to the *agents*. The 'cautionnement' – the guarantee deposited with the Treasury – was only set in 1818 (Decree of January 9, 1818), and it actually paid interest to the *agent*, because its purpose was not to prevent entry but to limit moral hazard. In 1816, the number of seats was

²⁶ CS, 20/6/1814.

²⁷ By way of an exception, Neapolitan bonds had been listed earlier.

considered too high by the agents to make a decent living from their trade, and some seats remained vacant²⁸.

Actually, there were two main reasons for the *numerus clausus*: it was necessary for an efficient open outcry system and it was a condition for mutual control among the *agents*. First, for open outcry to produce truly fair prices, all the brokers had to be physically face to face to compare their order books. Consequently, their number had to be restricted, and this is still the case on all stock exchanges using an outcry process²⁹.

Possibly more importantly, the *numerus clausus* was imposed soon after many *agents* had defaulted in the space of a few years, on the basis that mutual knowledge and control was a condition for solvency control and curbing risky behavior. The strict selection of candidates for the position of *agent de change* was also deemed necessary to limit moral hazards in a group whose reputation depended on the behavior of all its members. It was first organized by the government (assisted, in principle, by the Paris Chamber of Commerce). The failure of that solution was acknowledged in 1816 due to the high rate of bankruptcies among *agents* during the Empire. Selection was transferred to each individual *agent* in 1816 when ownership of their seats was guaranteed. Yet following a discord between Finance Minister Corvetto and the CS, selection was transferred to the latter in 1818 subject to ultimate approval by the Minister, even though each *agent* could still propose candidates for his own seat. Selection henceforth gradually improved and mutual social control developed throughout the century, under CS³⁰ supervision to ensure orderly market operations.

The 1816-1818 change was crucial since it transferred key powers to the CAC and especially to the CS, which became responsible for the liquidity-security balance. The former Committee had been petitioning unsuccessfully for years for more power over the selection of *agents*, the definition of the *Bourse's* in-house rules, policing operations³¹, and confirmation of the monopoly and ownership rights of the *agents* over their seats. It obtained these guarantees and powers by convincing the government that it could efficiently supervise the *agents*. The Committee argued that the CAC had satisfactorily proved its efficiency by striking off an *agent* (Dufresne) in December 1815 and successfully reining in the spread of

²⁸ The existing *agents de change* wanted their number to be reduced to 50, and strongly opposed the subsequent appointments (CS, 22/9/1817 and 22/10/1817).

²⁹ Baker, 'The Social Structure'.

³⁰ For example, the minutes of the CAC General Assembly (AG), CAC Archives, 29 Nov. 1841 (now quoted as AG, dd/mm/yyyy) state that the CS must watch over the private life of the *agents*.

³¹ Policing came under the jurisdiction of the Ministry of the Interior, causing *agents* to fear interventions based on public order considerations.

the crisis. The new powers granted to its successor, the CS, were to be exerted against *agent Pillot* on May 26, 1817.

The mutual guarantee principle was discussed very early on as a solution to the interdependent risks borne by *agents* and to underpin the reputation of the market as a whole. Given that *agents* were responsible for payment (or delivering securities) to their clients and their fellow brokers³², they were exposed to bankruptcy if their clients defaulted. This idiosyncratic risk threatened to trigger a systemic risk if a broker's defaulting were to affect the solvency of his peers, setting off domino defaulting endangering the entire market. This risk was especially great on the Paris market because of the importance of forward operations³³. In the late 1810s, a collective action to introduce a mutual guarantee to ward off the domino effect was rejected by most *agents* on moral hazard grounds³⁴. In 1818, when a serious crisis provoked the bankruptcy of three *agents* and serious problems for many of their peer-creditors, the CAC obtained a 5 million francs loan from the Bank of France on the basis of a joint guarantee by all the *agents*³⁵. A group of bankers also agreed to buy *rentes* on the market (thus limiting bear pressures) only on the promise, guaranteed by all the *agents'* wealth, that none of them would go bankrupt³⁶. The *agents* quickly reimbursed the Banque and the other creditors with advances of different amounts depending on their wealth and revenues³⁷ and became the final creditors of their defaulting peers. This crisis proved important since it was the first case of a collective guarantee (albeit short term) and because a *Caisse d'Amortissement* (sinking fund) was created to reimburse on a mutual basis the amounts the *agents* advanced to their failed colleagues. The fund was financed by the payment of a stamp duty on the operations of all *agents*. In 1822, the CAC chose to make this fund permanent under the name *Caisse Commune* (Joint Fund). The Joint Fund received the proceeds of a 10% stamp duty on brokerage commissions and paid a bi-annual sum of up to three million francs to the newly created *Fonds Commun* (Common Fund). The Joint Fund also provided for the CS's expenses and gave it leverage in institutional development. In addition to the expenses for the CS and the payment to the Common Fund, the Joint Fund paid an equal dividend to all the *agents*. The Common Fund was later used to manage the counterparty risk by providing loans to *agents* with short-term liquidity and solvency

³² The '*bonne fin*' of their operations.

³³ Riva and White, 'Danger on the exchange'.

³⁴ See, for example, the discussions surrounding the Pillot bankruptcy at the CAC meetings in 1817.

³⁵ Only the Treasury agreed to lend without a collective guarantee on that occasion.

³⁶ Regarding that episode, see CS, 18/11/1818 and 23/11/1818; AG, 4/12/1822.

³⁷ The Treasury and three agents who initially lent to the CS. Gontard argues that the *Fonds Commun* (Common Fund) was created to pay back the loan the CAC received from the Ministry of Finance (Gontard, M., *Le Bourse de Paris*, p. 154). In fact, this loan was reimbursed as early as December 8, 1818 (CS, 8/12/1818).

problems. It was used for the first time during the 1830-1831 crisis (see Section 3). Although this was a move towards a more integrated organization of the CAC, it still took a while for change to really take hold: in the 1823 crisis, three *agents* filed for bankruptcy without receiving any help since the CAC was not in danger and it considered their behavior had been excessively risky³⁸.

The CS was unable to lobby the government effectively enough to maximize monopoly profits or simply rule out hostile decisions. For example, it was unable to prevent the decision by the Royal Court of Paris in 1823, in a solemn hearing presided by the Justice Minister, to reject the previous jurisprudence under which forward contracts were enforced (and then rule the investors pay their debts in the event of losses). The Court upheld the '*exception de jeu*' (plea of gambling debts) whereby a debtor was not required to pay on the grounds that he gambled. In doing so, it created huge uncertainty on the forward market. Another example of jurisprudence to the *agents*' disadvantage was the refusal by the commercial courts to consider the Common Fund as the property of the CAC: when an *agent* defaulted, the courts included his share in the Common Fund in his assets while refusing to include his debts owed to other *agents* in his liabilities (see, for example, the Cléret bankruptcy in 1824). That decision increased the counterparty risk. This demonstrates that the CAC was still unable to impose its own rules on the stock market.

During that initial period, the CS was therefore unable to organize the CAC to take advantage of the monopoly or to increase the security of transactions. In actual fact, *agents* continued to cooperate with *coulissiers*, conducted illegal transactions (either trading on their own account or on the forward market), and even disputed certain CS decisions in court.

The *Parquet* did not provide any clearly superior organizational features such as strong guarantees, efficient settlement or a safe market. What then made it special? According to the theoretical literature, two markets can diverge and coexist if both issuers and investors have heterogeneous preferences about market quality³⁹. At the time, differences among issuers were neither here nor there, since public debt was almost the only traded asset and the French government clearly wrote into the legislation its preference for a transparent market. So at the time, a single market was enough. Nevertheless, the increasing diversity of investors after 1820, with the spread of *rentes* ownership, justified the gradual differentiation among operators: demand from new, uninformed investors led the *agents de change* to increasingly

³⁸ To strengthen and step up control over defaulting brokers, the CS imposed common accounting on *agents de change* in the aftermath of the 1823 crash (CS, 14/11/1823).

³⁹ Schwartz, ed., *Global Equity Markets*; Seppi, 'Liquidity Provision'; Coffee, 'Racing towards the Top?'; Gehrig, 'Competing Markets'.

emphasize market security and transparency as demand from sophisticated investors provided a living to dual capacity traders (the *coulissiers*), who gave them better immediacy and likely asked for lower commissions.

3. 1830-1860: organizational reforms and separation of the markets

Major institutional changes around 1830 saw the dawning of a new era on the markets. Some of these changes were in response to demand for financial services from firms. This was especially true of the 1832 ruling on the tradability of shares in limited equity partnerships, the typical manufacturing firm organization⁴⁰. It was also true of the 1831 creation of bearer *rentes* certificates, a market the government sought to develop for its debt. Nevertheless, substantial demand for a new set of financial market services only emerged with the development of the railroads in the 1840s. So the major institutional changes of the early 1830s could be said to be mostly exogenous and a supply-side institutional innovation instigated by the CAC and/or the government to improve market effectiveness. These changes affected, in particular, the guarantees provided to investors, the listing policy and the organization of transactions on the stock exchange.

The first important change on the eve of the period concerns the forward market. In 1832, civil courts began to make forward contracts enforceable by recognizing their validity even without a monetary deposit by the forward buyers (although forward sellers had to deposit the securities when they transmitted an order). The 1832 publication of the CAC's internal rules helped courts make that decision by providing a detailed regulatory framework for forward transactions. The fact that the Finance Ministry refused to approve these rules meant that they were compulsory for the *agents de change*, but not for their clients. So only the courts' new and uncertain jurisprudence protected the *agents*, often imperfectly. Forward transactions grew, not only for *rentes*, but also for new issues of railroad shares and bonds. This justified the publication of forward prices on the official list from 1844. A last jurisprudential change in 1848 stepped up *agent de change* protection by differentiating between 'serious' and 'bogus' forward transactions (a distinction derived from the CAC's own rules): serious transactions were those by regular forward market operators with a wealth proportional to the positions they took; they could not enter a 'plea of gambling debts'.

⁴⁰ See Lamoreaux and Rosenthal, 'Legal Regime'.

The second major change at the beginning of the 1830s was the development of the CAC's collective guarantee during the 1830-1831 crisis. In that episode, the Common Fund was used for the first time under the sole authority of the CS to save a number of *agents* from bankruptcy. From that date on, the CS was allowed to use part of the Common Fund (an amount equal to the *cautionnement* plus the share of the *agent* in the Common Fund – 50,000 francs and later 100,000 francs – secured by the seat value) without asking the CAC general assembly, and the virtually unanimous majority required by the general assembly for more substantial assistance was reduced to a two-thirds majority. Both changes reinforced the integrated organization of the CAC. This position was strengthened in 1835 when the Paris Court ruled that the Common Fund had the status of a civil society, giving precedence to CAC members' claims over other creditors and allowing the CS to use it to deal with crises. Later on, other moves were made to strengthen the security of transactions for investors. They were exclusively made by the *Parquet*, rather than by the *Coulisse*, and focused on limiting excessive risk-taking during bull periods⁴¹. In addition, a regular inspection of all *agents'* accounting books was introduced in 1846, and the Common Fund was doubled to 6 million francs in 1852, also improving transaction security. These efforts did not suppress bull or bear markets, but they did strengthen the legitimacy and reputation of the *Parquet*. Especially important was the fact that, due to the Common Fund and the integrated organization under the CS and despite a number of crises, only one *agent de change* filed for bankruptcy from 1831 to 1859: losses for the general public were very limited⁴².

In the late 1830s, the CS moved to secure the market by developing a listing policy, which became increasingly independent from the Ministry of Finance. The main reason for this was the rapid rise in the number of limited equity partnerships, a legal form that allowed for the creation of shares for firms not subject to government authorization (in contrast with corporations, which were subject to authorization until 1867 and implicitly admitted to the official list when authorized). The government was reluctant to either approve their listing, fearing investors would see it as an implicit guarantee of the quality of the firms, or to give

⁴¹ In 1834, for example, 42 *agents* asked for increased guarantee deposits to be made in the Joint Fund by those conducting forward transactions on the Spanish *rente*, the main speculative security on the market (AG, 6/10/1834). The CS asked for similar protection during the canals and limited equity partnership bubbles in following years, signaling its efforts to the government. In 1844, the CS switched from a monthly to a bi-monthly settlement to reduce the risks of forward operations at each settlement date. In 1851-1852, it cooperated with the Bank of France against the bull market and required from *agents de change* a guarantee deposit of 150 francs per share (around one-third of their nominal value) for forward transactions, a decision it was soon proud of (AG, 15/12/1852).

⁴² Nevertheless, CAC general assembly debates on that bankruptcy show that the CAC was still divided over a collective guarantee (e.g. AG, 18/11/1845).

guidelines to the CS. It nevertheless recommended that the latter be ‘prudent’ in its decisions⁴³. When the limited equity partnership boom started in the mid-1830s, the CS was unable to admit their shares onto the official list given the absence of Ministry authorization, and forbade *agents de change* from trading them on the *Parquet* without its explicit approval. It then developed a body of legal and economic requirements that the partnerships had to satisfy to have their shares traded on the *Parquet*. Immediately, it published an unofficial list for them⁴⁴. In 1840, it adopted a definitive procedure for these shares⁴⁵. Moreover, the CS refused to list the *promesses d'actions* (promises of shares) that the railway companies had issued before obtaining the concessions they had asked for⁴⁶. That ‘prudence’ created the scope for an alternative market of limited equity partnership and railway securities on the *Coulisse*. In the late 1830s, the *Coulisse* started broadening the range of securities in which it traded. The *agents de change* still traded in unlisted securities in cooperation with *coulistiers*, and vice versa⁴⁷. However, in 1844, the *Parquet* organized a full second-tier market (the *Rez-de-Chaussée de la Cote*) to contain the *Coulisse*’s competitive pressures and to quote riskier securities that were not admitted onto the official list⁴⁸.

In the 1850s, a similar problem affected the listing of private foreign securities. Some were listed on the *Parquet* following approval by the CS and the Minister of Finance. When, in 1857, these securities became subject to the same taxes as French securities and the government asked the *Parquet* not to list foreign securities that had not paid the tax⁴⁹, many of these securities switched to the *Coulisse*. The *Parquet* had gradually developed its control of listing and trading decisions, but had lost out on transactions on unlisted securities.

A last change was more gradual and less visible, but played a major role in the separation of and subsequent competition between the *Parquet* and the *Coulisse*: the more efficient organization of settlements and payments. As early as in 1836, the CS set about organizing

⁴³ Letter from the Laplagne Ministry of Finance to the head of the *Bourse* on October 17, 1837, copy *in extenso* in CS, 23/10/1837.

⁴⁴ This process led to a distinction among the securities traded on the *Parquet*: securities admitted onto the official list, securities admitted for forward and cash trade on the *Parquet*, securities admitted only for cash transactions, and securities not tradable on the *Parquet*.

⁴⁵ See CS, 16/8/1837, 28/8/1837, 11/9/1837, 18/9/1837, 29/9/1837, 23/10/1837, 21/3/1838, 17/2/1840, and 11/5/1840.

⁴⁶ Nevertheless, the CS also tried to speed up the listing by asking the government for its concession decisions (see AG, 22/12/1841 and 20/12/1847). The law passed on July 15, 1845 made these promises of shares non tradable.

⁴⁷ CS, 6/12/1841.

⁴⁸ The prices of the securities admitted onto the *Rez-de-Chaussée de la Cote* were published just below the official list on the same sheet. Before this new organization, these prices were published on a separate list.

⁴⁹ The government also asked the *Parquet* to handle investor security in the listing decision.

centralized settlement for forward transactions with the help of the Bank of France for payments. This mechanism had its limitations because the courts required *agents* to be able to track every debtor at every step of the transaction process, impeding full multilateral compensation. It was extended and scaled up in 1843 and 1845, when a true net compensation of all debts among participants was put in place without losing out on the transparency of the process due to the development of accounting techniques.

By the 1860s, the CAC was proud of its settlement mechanism, which was ‘admired through all Europe’⁵⁰. On the forward market, the complete settlement and delivery process accompanying every liquidation (every month) did not exceed five days. On the spot market, the same process was shortened from ten to five days in 1873. These figures compare well with the ten days still required in London in 1988⁵¹. Indeed, contemporaries considered the Parisian monthly settlement to be very efficient compared with foreign exchanges. Furthermore, the Paris process was about net compensation (multilateral), when London and New York only had gross compensation, requiring more cash to be actually transferred and increasing the strain on the money market⁵².

Multilateral compensation required mutual confidence. It was a consequence of the rise of the collective guarantee among *agents de change* and was a justification for the CS control on *Parquet* members. As early as 1823, the CS also stepped up its screening of potential new *agents* (focusing also on the candidates’ personal wealth and life) and its monitoring of *agents’* partners⁵³. From 1828 on, the CS tried to limit the brokers’ counterparty risk by establishing lists of bad clients⁵⁴.

The *Parquet’s* strategy subsequently introduced low-cost, efficient, secure operating mechanisms⁵⁵ to attract investors (especially risk-averse investors) and leave the high-risk, high-return end of the market to the *Coulisse*. The series of regulatory changes and product and organizational innovations put in place explains how the Paris market – mostly the *Parquet* – was able to respond to the increase in demand for intermediation services. That demand started with manufacturing firms in limited equity partnership form and with foreign

⁵⁰ Cf. AG 15/12/1869. AG 17/12/1851, for example, mentions that foreign bankers and brokers asked for the *Parquet* settlement procedures as a model.

⁵¹ Cf. Pagano and Roell, ‘Trading systems’, Table 4.

⁵² Maddison, *The Paris Bourse and the London Stock Exchange*; Gibson, *The Stock Exchanges*.

⁵³ Solidarity was further boosted when the CS secured the right to decide at which price *Parquet* seats were to be sold.

⁵⁴ See Riva and White, ‘Danger on the Exchange’, on counterparty risk management at the *Parquet*.

⁵⁵ From the mid-1830s on, the CS set and did its best to enforce markedly lower minimum commissions (by about 50 %) than the maximum commissions set by law. This concerned mostly less liquid securities, high unit value securities and registered securities (see, for example, CS, 21/1/1836).

government debt in the 1830s, and increased substantially with the transport and later banking revolutions of the 1840s and 1850s. The French stock exchange ended up financing the railroads almost entirely, which alone mobilized investments of around 2% of GDP every year from the 1840s to the 1860s⁵⁶.

These changes are consistent with our theoretical framework⁵⁷. They led to an increase in the heterogeneity of securities traded (from small, innovative firms' shares to the *rente*), which made a single market organization less efficient and strengthened the need for different operators. Although the legal monopoly was still in place, the *Coulisse* in practice developed as a separate market, and the *Parquet* forsook quoting certain securities in order to focus on the major new issues of the period, among the most important of which were the railways and new joint-stock banks. The *Coulisse* focused instead on specific products: shares in limited equity partnerships in the 1830s, promises of shares in the 1840s, and foreign private securities in the 1850s. It also competed with the *Parquet* on the *rentes* market, especially following the creation of bearer *rentes* certificates in 1831. That separation can be clearly seen in the business newspapers, which published security prices distinguishing between the *Coulisse* (the unofficial market) and the *Parquet* (the official market) as of the late 1820s.

4. 1859-1882 The failed 'takeover' of the *Coulisse*

The specialization between the *Parquet* and the *Coulisse* that emerged in the late 1830s was accepted by both markets until the end of the 1850s, and the markets looked to be complementary on the whole. Nevertheless, right from the start, the *Parquet* saw the relationship as a hierarchical one given its official nature. Furthermore, the *Parquet's* trading mechanisms, with its special settlement and guarantee measures, led to a separation. The *Parquet* took advantage of its innovations and reputation to commandeer the high end of the market and extend the list of securities it handled. At the same time, traded volumes on the *Parquet* skyrocketed (see Figure 1). All these successes were driven by the *Parquet's* highly effective and dynamic strategies, but they also prompted an attempt to monopolize the market and oust the *Coulisse*.

INSERT Figure 1 AROUND HERE

⁵⁶ Verley P., *Nouvelle histoire économique*.

⁵⁷ See, in particular, Coffee, 'Racing towards the Top?'

As the Paris financial market boomed, cooperation-competition between the *Parquet* and the *Coulisse* became increasingly antagonistic towards the end of the 1850s. After a number of *coulissiers* defaulted during the 1847-1848 crisis (without consequences on the *Parquet*), the *Coulisse* reorganized in a more formal structure⁵⁸ and also thrived. At the same time, the increasing volumes traded on the *Parquet* led to a sharp rise in seat prices⁵⁹. A number of *agents de change* took advantage of these high prices to sell their seats, a timely move since *agent* turnover in the 1850s was by far the highest of the 19th century⁶⁰. The buyers – themselves not yet well established and wealthy bourgeoisie as *agents* were to become in the ‘*Belle Epoque*’ – needed high profits in order to earn a sufficient return on their investment, especially since they became highly indebted when buying their seats⁶¹. This led them to indulge in riskier behavior and to petition for the reinforcement of the monopoly when the 1856-1857 crisis hit the market⁶², as they felt strong enough to absorb the entire Parisian business.

In the past, the *Parquet* had asked the courts to enforce its monopoly, but without much success (although some rulings were handed down against a few *coulissiers*, mostly when the government wanted to calm speculative behavior). In 1859, however, the *Parquet* agreed with the government on both a new regulation and a reinforcement of the monopoly, by which it essentially absorbed the *Coulisse*’s staff and business without any formal purchase of the *Coulisse*’s firms. The government had decided to step up financial regulation following the 1856-1857 crisis, and wanted to punish the *Coulisse* for allowing foreign firms to evade the new tax regulation and issuing requirements that were part of its regulatory drive⁶³. The CS obtained an extremely harsh ruling against all the leading, most reputable members of the *Coulisse*⁶⁴, just after passing the new internal rules allowing for the *Parquet*’s expansion⁶⁵.

In order to run the entire market, the *Parquet* modified its own organization: new pits were created, new securities were listed (especially foreign private ones), minimum commissions were lowered, new contracts were introduced that existed previously only on the *Coulisse* (low-prime options in particular), and the monthly settlement was reintroduced (as in the

⁵⁸ Vidal, *Traité*, p. 266.

⁵⁹ The average price rose from 517,000 francs during the 1849-1853 period to 1,880,000 francs during the 1857-1863 period (source: authors’ calculations based on data in box JZ 3, file B.615.4, CAC Archives).

⁶⁰ See Box JZ 3, file B. 614, CAC archives.

⁶¹ French law required that official stockbrokers personally held at least one-quarter of their brokerage house.

⁶² This also explains the high number of defaults among stockbrokers during the second half of the 1850s.

⁶³ Cf. box B33.232, Centre des Archives Economiques et Financières.

⁶⁴ The lower court ruled against the *coulissiers* on June 25, 1859, and the French supreme court of appeal upheld the ruling on January 19, 1860.

⁶⁵ AG, 18/10/1859, 20/10/1859 and 14/12/1859.

Coulisse tradition). Most importantly, new jobs as ‘senior clerks’ (*commis principaux*) were created for former *coulissiers*. They were supposed to maintain substantial autonomy within the *agents de change*’s brokerage houses, which had turned into increasingly structured firms during the high-growth period, a change that would be formally recognized by a law as not conflicting with their ‘public duty’ in 1862⁶⁶.

There are four main reasons for the merger’s failure and the *Coulisse*’s gradual comeback.

First, the new *commis principaux* did not adjust to this hierarchical organization. They kept conducting their own transactions outside the stock exchange, and took risks the *agents de change* did not want to guarantee. They were dissatisfied with the restrictions imposed by the CS on the variable part of their income (which would lead them to take excessive risks and then to free-ride first on the brokerage houses they were supposed to work for and second on the CAC as a whole). This led to the re-establishment of many of these *commis* as independent brokers, without any formal organization at first, but later with a very loose organization allowing for transactions to be conducted and settled.

Second, the *Parquet* could not provide all the services required by the market. In particular, it did not create a market for the foreign securities that circulated in France without complying with fiscal and issuing laws⁶⁷. In addition, the *Parquet* was unable to provide the international arbitrage required by internationally cross-listed securities. The *Coulisse* was also important when large issues on the French market exceeded its absorption capacity; a rare occurrence, but one that happened when the French government issued five billion francs of bonds (some three months of GDP) to pay reparations to Germany after the 1870 Franco-Prussian War. The *agents de change* and Treasury officers in the provinces were unable to help distribute these huge issues because they lacked the international connections that were the *raison d’être* of many *coulissiers*⁶⁸. Only the *Coulisse* could develop that international arbitrage and the speculative forward market on the *rentes*, which ‘helped’ the government (since speculation remained bullish almost constantly and *rente* prices increased from 1872 to 1879).

The *Parquet*’s listing policy for French securities was also unsatisfactory for many issuers. In 1864, the CS still believed it could handle all the market and listed illiquid securities in order to prove that ‘our guild satisfies all the needs of industry and trade’⁶⁹. Yet in 1866, Finance

⁶⁶ The law became necessary when an 1861 court decision – in a break with previous jurisprudence – declared null and void the contract that governed an *agent de change* brokerage house, on the basis that an official brokerage house was a public office and could not take commercial law forms. This ruling could only be overturned by a law.

⁶⁷ See, for example, AG, 21/12/1863 and 9/5/1870.

⁶⁸ Verley, ‘Organisation of National Financial Market’

⁶⁹ AG, 19/12/1864.

Minister Fould ordered the removal of the *Rez-de-Chaussée* from the *Cote Officielle* on the basis that the *Coulisse*'s comeback made it surplus to requirements and that it implied fixed costs and risks that the *Parquet* should avoid. In spite of this setback, the CS acquired a new power in 1867 when the new Commercial Code deregulated the creation of joint stock companies: the Finance Minister subsequently granted the CS full responsibility for listing French securities and a great deal of independence regarding the listing of foreign securities⁷⁰. So the CS became 'master of the official list'⁷¹... albeit a smaller list.

The last reason for the re-establishment of a *Coulisse* was the development of the newly created banking corporations (including Crédit Lyonnais in 1863 and Société Générale in 1865), which rapidly sought to reduce their dependence on the *Parquet*⁷² for their operations, in particular in terms of commissions and flexibility. The strict rules that the *Parquet* imposed on forward transactions (which contributed to their legitimization by the courts) made it less flexible than the *Coulisse*⁷³. Crédit Lyonnais hosted the *Coulisse* brokers in its main building for years, with government informal approval as of 1880⁷⁴. In the early 1870s, the CAC feared that some banks might try to buy an *agent de change* brokerage house, which would have allowed them to legalize their own operations and escape the monopoly⁷⁵.

The *Parquet*'s success in the 1850s is probably precisely what led it to adopt an erroneous monopolistic strategy. In trying to absorb the *Coulisse* without being able to create an actual hybrid market given its formal and informal constraints, it created a hole in the provision of financial services. From the moment that new financial actors (the banks) and an exogenous shock (the war) increased demand for services usually provided by the *Coulisse*, the *Parquet*'s bid to control the entire financial market was doomed. The failure of this bid demonstrates the importance of a multi-polar organization and how it is impossible for a regulated exchange to handle the entire market. It also shows that the *Coulisse* was there not because the *Parquet* was inefficient, but because it imposed strict rules and regulations that did not satisfy all the actors concerned.

⁷⁰ The legal framework for the listing of foreign securities was set in 1880 by the decree of Feb. 6, 1880 and the *circulaire ministérielle* of Feb. 12, 1880, which harmonize and align the previously fragmented rules.

⁷¹ AG, 26/12/1866 and 30/12/1867; CS, 30/1/1867 and 18/2/1867.

⁷² In the early 1870s, the CAC feared that some banks might try to buy an *agent de change* brokerage house which would have allowed them to legalize their own operations and escape the monopoly (AG, 21/12/1872).

⁷³ Lagneau-Ymonet and Riva, 'Les opérations à terme'.

⁷⁴ Romey, 'La Bourse de Paris'.

⁷⁵ AG, 21/12/1872.

5. 1882-1898: the *Parquet's* decline – unable or unwilling to provide a secure market?

In spite of its failure to absorb the entire market, the *Parquet* still formed an effective and secure segment of the Parisian market. Although it was unable to provide certain specific services, it still dominated the market for most investors and most securities. The reason for its relative decline over this period is found: a) in its avoidance – or neglect – of the period's fastest growing segment of market, the stocks (especially foreign stocks), and b) in the internal wrangling over the suitable organization for the *Parquet* following the 1882 crash. The two issues are linked since the choice of an organization was directly related to the constraints on the individual *agents'* pursuit of innovative business and the resulting risks.

In the 1870s, a financial bubble formed due to speculation on government bonds, followed by a spurt of new banks and financial services firms that the *Parquet* listed rather too easily. The resulting 1882 Union Générale crash disrupted that financial sector. Union Générale, the most recent of the big banking corporations, went to the wall in the middle of the crash, mainly due to buying back its own shares on the forward market. The crash severely afflicted the Lyon Stock Exchange, where 14 *agents de change* filed for bankruptcy. In Paris, too, the crisis was serious. Six Parisian *agents* had to resign and eight more were so badly hit they had to ask for assistance from the CAC. More importantly, the CAC had to borrow 80 million francs from the Bank of France and a consortium of banks in order to meet the January settlement and avoid total collapse.

In a recent paper, E. White considers this loan as a proof of the *Parquet's* inability to provide the security it promised. We agree that the crash tarnished the *Parquet's* reputation, but we do not think it proves it was unsecure or inefficient. First, the *Parquet* did not cave in, so it actually delivered the security that investors expected. Admittedly, it had to ask for a loan, but the loan was paid back within ten months from the personal wealth of the *agents* and their relatives. This proves that the only problem the *Parquet* had was one of liquidity, not solvency, and it bears out that the *Parquet* had a strong credit standing, a direct result of its integrated organization⁷⁶. Moreover, the *Parquet* dealt with the losses without obtaining a court ruling to make its clients pay for their debts. The *agents* wrongly believed that the

⁷⁶ E. White argues that the security provided by the *Parquet* was indeed limited because the guarantees given by the *agents de change* had decreased compared to the transaction volumes. Nevertheless, he disregards the *agents'* personal wealth, which was the main guarantee for these operations and explains the rapidity of the loan reimbursement as well as the fact that the banks agreed to lend without asking for interest (cf. White, 'The Crash of 1882').

previous jurisprudence would convince their debtors to pay. Some debtors did not pay, possibly because they were stalling for time, but maybe because some uncertainty lingered under the previous jurisprudence. The courts unexpectedly changed the jurisprudence, refusing to enforce forward operations and cancelling contracts when debtors entered a ‘plea of gambling debts’. The *Parquet*’s losses from cancelled contracts (including those taken out by Union Générale itself⁷⁷) amounted to 117 million francs, 84% of the total *Parquet* losses during the crisis. Importantly, this amount is higher than the loan the *Parquet* asked for, suggesting that the loan might not have been necessary had it not been for the uncertainty on the forward market⁷⁸. So it looks as if the *Parquet* became the chosen scapegoat because it could be blamed for the errors of the entire market and remained reputable enough to guarantee a secure end to the crisis. The losses on the *Coulisse* were doubtless huge, but they were not disclosed (although bankruptcies were many). Neither were the government’s shortcomings in regulating the financial industry⁷⁹.

We conclude that the 1882 crash does not prove that the *Parquet* was inefficient. There was no sharp drop in the value of *agents*’ seats following the crash⁸⁰, suggesting that new buyers did not believe that future earnings would be affected much. Nevertheless, the *Parquet*’s 1882 problems damaged investors’ confidence, a problem the *Coulisse* did not face since it did not claim to provide security. The *Coulisse* was actually able to take advantage of the new 1884 law on legalizing the unions to organize more formally, allowing it to appear more as a structured market and improve the effectiveness of its transactions.

We will argue here that the main reason for the continuing decline of the *Parquet* compared to the *Coulisse* in the 1880s was neither the dynamic behavior of the *Coulisse* nor the inherent failings in the *Parquet*’s organization nor the *Parquet*’s increasing conservatism (as argued by Verley⁸¹). More important was the internal conflict that affected the CAC’s cohesion when faced with the crisis. The 1882 crisis affected the CAC’s cohesion in two ways. First, it drove the *agents* to limit the mutual guarantees in order to contain the moral hazard. Second, it

⁷⁷ The courts took the line that Union Générale’s forward contracts were not ‘serious’ while the CAC argued that the whole market was lending to Union Générale, a bank with a capital stock of 150 million francs. The *Coulisse* was also affected by the crash, although possibly comparatively less, first because its forward contracts were less generally deemed secure and also because the *coulissiers* unilaterally (as argued by the CAC) offset their losses against the debts they had with Union Générale (corresponding to the bank’s last shares issue).

⁷⁸ Lagneau-Ymonet and Riva, ‘Les opérations à terme’.

⁷⁹ The government repeatedly refused to legalize the forward markets in the run-up to 1882, believing that the risk of the courts accepting a ‘plea of gambling debts’ would keep speculative behavior in check. Actually, it merely created more uncertainty.

⁸⁰ The average price fell from 1,600,000 francs for the 1871-1880 period to 1,428,000 1881-1891 for the period. Nevertheless, the median price rose from 1,600,000 for the first period to 1,700,000 for the second period. Authors’ calculations based on data in box JZ 3, file B. 614, CAC archives.

⁸¹ Verley, ‘Les opérateurs du marché financier’.

unleashed competition among the *agents*, particularly in terms of commission fees and, in turn, it weakened the financial structure of both the CAC and the brokerage houses.

In the immediate aftermath of the crisis, the long-standing (since 1861) head of the CAC (*syndic*), Moreau, was criticized for his handling of it and especially for trying to force all the *agents* into a position of solidarity to repay the 80 million franc loan. In actual fact, his actions had been perfectly consistent with his twenty-year active policy for the CAC to protect investors from losses in all crises (except the Leperche bankruptcy of 1868). Moreau's detractors, who had constantly emphasized the moral hazard aspect of his policy⁸², convinced the CAC general assembly not to follow Moreau and the CS anymore. They also made it clear that the 1882 bailout was the last one: 'it [the CAC] solemnly protested against maintaining any principle of solidarity'⁸³. Following that decision, Moreau resigned. Over the next few years, the CAC did indeed prove more reluctant to pay for its members' problems and tougher in its negotiations with the banks, which had to accept their share of the losses (Vuaflart case in 1886). In the Bex case, in 1888, it refused to pay anything more than the spot transaction debts and let the *agent* go bankrupt.

Our view is that the restriction on solidarity within the CAC may well have been rational from the point of view of some *agents* for whom solidarity was costly. However, it prompted the *Parquet's* decline since the security resulting from that solidarity was one of its major competitive advantages over the *Coulisse*. The new policy, which led to increased competition and decreased cooperation within the CAC, was finally rejected in 1892 when Hart, the *Syndic* who had succeeded Moreau, was removed, and solidarity among *agents* was reinstated (as shown by the 1895 failures)⁸⁴.

The reason for this return to full solidarity and the guarantee to investors is to be found in the interaction between the government and the *Parquet*. The government constantly made clear its preference for maintaining a market structure including a strictly organized and secure market, despite pressure from the dominant *laissez-faire* economists (such as P. Leroy-Beaulieu) to abolish the monopoly. Its conviction was upheld by the 1889 Panama and Comptoir d'Escompte crises, which reawakened fears about speculation. More importantly, the government's position was the political upshot of the development – in a country where male universal suffrage was introduced in 1848 – of a middle class of investors who

⁸² See, for example, AG, 28/7/1882, and 9/7/1883.

⁸³ AG, 9/7/1883.

⁸⁴ The change actually started back in 1890, when Verneuil, a nephew of Moreau and future *Syndic* (from 1896 to 1913) entered the CS. From then on, Verneuil became the *Syndic's* alter ego and took part in many negotiations. Bertaux, another long-standing member of the CS (and future Minister), was also an active supporter of the change.

prioritized keeping their retirement savings safe and feared the asymmetries of size and information they felt they would suffer on a less regulated market. This is also consistent with the limited development of collective management under investment funds or even life insurance⁸⁵.

Before the re-establishment of the full guarantee by the *Parquet*, the government tried to adapt regulation to stabilize the market in a move that unwittingly favored the *Coulisse*. The first step was the legalization of forward operations in 1885. It was good news for the market as a whole since it ended the uncertainty recreated by the 1882 judges' decisions. However, the advantage went to the *Coulisse* since, except for the 1882 crisis, the *Parquet* had already obtained a more favorable jurisprudential record⁸⁶. The second step was the legal recognition of *Coulisse* transactions on unlisted securities by a ruling of the French supreme court of appeal, also in 1885. This restricted the *Parquet* monopoly to officially listed securities.

After the 1889 crisis, the government decided to step up the regulation of the *Parquet*. For the first time, a decree regulated the transactions and ratified the *Parquet's* new internal rules in 1890. The government also asked the *Parquet* to extend its list, which led to the creation of a second list of medium-sized firms. In exchange for their stricter regulation and extended service, the *agents de change* could ask the courts for the enforcement of their rules, reducing uncertainty. This move supported the monopoly, but it also increased the regulatory burden that the *Parquet* faced and did not hinder the development of the *Coulisse*, which was taking advantage of the 1884-1885 regulations and developing forward and option contracts on many securities listed on the official list. Moreover, it kept trading many listed securities at the evening session it held in the lobby of Crédit Lyonnais⁸⁷ until the *Parquet* managed to get the police to close it. Beside the Crédit Lyonnais, most large banks strongly supported the *Coulisse*, among other things because of its key role on the primary market for the securities they issued (the *coulistiers*, as merchants, were entitled to buy huge blocks of securities on their own account from banks, an operation forbidden to the *agents*). Given the *Parquet's* institutional weakness and these pressures, the government switched to the liberal view of a free market of open competition between the two organizations. That view was put into law by the 1893 Budget, which recognized the *coulistiers'* operations even on listed securities⁸⁸.

⁸⁵ Hautcoeur, 'Efficiency, competition and the development of life insurance'.

⁸⁶ Lagneau-Ymonet and Riva, 'Les opérations à terme'.

⁸⁷ Crédit Lyonnais, a major operator on both the primary and secondary markets, set great store by the *Coulisse's* evening session held in its lobby since it could extract valuable information from it for its own operations.

⁸⁸ Hautcoeur, Riva and Rezaee, 'How to regulate a financial market?'

The 1882 crisis and the high number of new *agents de change* entering the CAC in its wake also weakened the *Parquet's* cohesion by unleashing competition among brokers, particularly in terms of commissions. The CS fixed the minimum commissions for official brokers, but the latter were able to circumvent the corporative order through the half-commissions they gave to the *remisiers* (intermediate brokers) and to banking operators who put business their way. The half-commissions became so huge that the net part of the commission retained by the official stock brokers was not sufficient for them to build the wealth and the reserves they need in the event of a crisis, as an important part of the guarantee the *agents* gave to both clients and colleagues. Furthermore, the liquid reserves were employed in *contangos* (short-term credit to forward market speculators wanting to postpone their positions) and hence lent flexibility to the functioning of the *Bourse*. The enforcement of the minimum commissions fixed by the CS was a priority of the new *Syndic de Verneil*. From 1894 onwards, he upheld that maintaining these minimum commissions was a prerequisite for the CAC's 'revival' following the 1893 defeat and for 'the action for the consolidation and the reorganization of the monopoly'⁸⁹ to the extent that it would enable the re-establishment of the full common guarantees over the transactions.

The attempts at extensively changing the rules during the period point to how complex and intense competition among Parisian exchanges was. The bipolar organization relied not so much on the *Parquet's* legal monopoly of a market segment as on well-differentiated markets whose microstructures provided services tailored to different clienteles. Any change in one market's microstructures changed the market shares. When the *Parquet*, hit by the 1882 crash, decided to stop providing as generous a guarantee as before, it forsook a key element of its comparative advantage. This prompted a shift by investors towards the *Coulisse* and regulatory moves by the government, which increased the *Parquet's* regulatory burden (1890) and deprived it of its legal advantages (1885 and 1893). The 1893 tax revenues showed that the *Coulisse* had two-thirds of Parisian market share in traded volumes, hardly the position of a competitor hurt by a dominant monopoly.

The 1893 regulation would probably have seen the *Parquet* slip further, since its stricter regulation put it at a competitive disadvantage. But another shock caused a swing in the opposite direction: the 'gold mines' crash of 1895. In previous years, the *Coulisse* had listed a great number of new gold mines operating in the recently colonized Transvaal, which did not meet the *Parquet* listing criteria. That period of intense speculation ended with a sharp drop

⁸⁹ Cf. AG, 16/12/1895.

and with the failure of a high number of investors and *coulissiers*. This reopened the regulatory debate.

6. 1898-1914: The monopoly strengthened and challenged

The ‘gold mines’ crash convinced the government that the *Coulisse* did not provide the stability required by a well-functioning market. It decided to reinstate the *Parquet* monopoly and impose new regulations on it. This move re-established the dual organization of the Paris financial market.

The crash came at the worst time for the *Coulisse*. Its market had expanded rapidly in recent years and looked fragile. The political situation was one of growing friction between the increasingly socialist left and ultranationalists (cf. the Dreyfus affair). Xenophobic and anti-Semitic attacks grew against the *Coulisse*, which had many Jews and foreign – worse, mostly German – members. In 1898, the Fleury-Ravarin law required the *coulissiers* to use the intermediation of the *agents de change* for all officially listed securities, re-establishing the monopoly on a stronger basis than ever before. In return, the *Parquet* had to improve its services: maximum commissions were slashed, minimum commissions were scrapped on small orders, delivery times were reduced, new pits were created (allowing for some former *coulissiers* to be hired), and the CAC had to provide funding for the Association Nationale des Porteurs Français de Valeurs Mobilières (an investors' lobby negotiating mostly with bankrupt foreign governments) and the enlargement of the stock exchange building. More importantly, ten new *agents de change* were appointed, solidarity among *agents* was made legally compulsory, and, from 1901, the price of *agents de change* seats was fixed by the government – and kept constant until World War I.

The *Coulisse* reeled from the blow. A full 50 billion of its 70 billion franc turnover in 1897 came from *Parquet* listed securities, business it would lose⁹⁰: its market share fell to one-third of Parisian traded volumes. It restructured into two organizations (*syndicats*), respectively for spot and forward transactions (the latter being by far the largest) on unlisted securities. The government convinced them to set up much more hierarchical organizational structures based on the *Parquet* model.

⁹⁰ AG, 30/4/1898.

Contrary to the ‘government capture’ argument, the *Parquet* did not view the stricter regulation of the *Coulisse* with satisfaction. Possibly in the light of the failed takeover of the 1860s, the *agents* were convinced of the need for a free market as a complement to their own. They did not want to get rid of the *Coulisse*, only to control and dominate it. They accepted a *modus vivendi* in 1901, by which they authorized the *Coulisse* to continue trading listed securities, shared their commissions with the *coulissiers* and extended their guarantee to these transactions. The *Parquet*’s attitude comes through clearly in the following (privately made) statement by the CAC Syndic:

‘Although our Corporation is an indispensable base for the market because of the security it represents, it is not and cannot be active enough to conduct a number of businesses’, such that, ‘The duty of the *Chambre Syndicale* was to search for a system which, while strictly respecting the law, would maintain the activity of the *Coulisse* and allow it to do business’⁹¹.

But as the *Coulisse* became more regulated, other markets appeared in the early 20th century providing the flexibility that was disappearing from the *Coulisse*. An informal and highly liquid market for French *rentes* operated with implicit government approval. Some former *coulissiers* who had moved (nominally) to Brussels kept operating on *Parquet* listed securities in Paris. Others took advantage of a ‘legal loophole’ that allowed them to deal in listed securities throughout ‘direct operations’. A new ‘free market’ also developed: not formally organized and publishing no list, it probably operated like an OTC and a start-up market. Together, these different competitors of the *Parquet* kept winning a substantial proportion of the transactions. Nevertheless, the *Parquet*’s market share held steady at two-thirds (as measured by the tax on stock market operations). The existence of various markets is perfectly consistent with our multi-polar framework, and it suggests that the strict regulatory framework of 1898 led not only to a *Parquet* monopoly but also to the development of new markets more opaque than the former *Coulisse*.

So the 1898 law was not the end of the story, and it would be misleading to focus exclusively on it – as much of the literature does – since the *Parquet*’s competition did not come solely from the *Coulisse*.

From then on, the main challenge to the *Parquet* was the growth in the banks’ role in security issues and trading. A number of medium-sized banks, loosely organized into the *Syndicat des Banquiers de Province*, circulated lists of bid and ask prices (on SME shares) amongst themselves, avoiding the intermediation of any organized market. Competition from deposit

⁹¹ AG, 30/4/1898.

banks was even greater since they aspired to supplant the *agents de change* as advisers (a role the *agents de change* were legally barred from) to middle-class investors and even as intermediaries. Although the extent of the (illegal) practice is unknown, it seems that they sometimes directly matched buy and sell orders from their clients, avoiding the *Parquet* intermediation (but using its prices).

On the primary market, the large deposit banks started organizing issues of new securities in the 1890s without immediately introducing them on the stock exchange via IPOs as they had done previously: they took advantage of their networks to sell the securities directly to individual investors⁹². Admission to the list was requested only at a later stage, meaning that the *Parquet* lost out on a period of highly active trading. This was very different from the London situation where issues were organized by brokers and were held by speculators making frequent operations for a long period before they were sold to long-term holders, and where the presence of investment funds that regularly rebalanced their portfolios guaranteed more liquidity. This may explain a more dynamic spot market in London and the lesser volatility of the Paris market during the gold standard period⁹³.

The CAC responded quickly to this competition. As early as 1880, the *Parquet* started offering services similar to the banks such as the payment of coupons and safe custodian services in cooperation with the Bank of France⁹⁴. On the secondary market, the *agents de change* and the banks agreed on the '*par contre*' in 1895, an agreement by which a bank paid commission only on the largest of two matching orders passed to an *agent* during the same session. The *Parquet* also maintained high half-commissions for banks that provided them with orders⁹⁵. On the primary market, where no monopoly existed, the *agents de change* organized in the mid-1890s to be able to participate in the most important issues as a group on behalf of their clients. In 1894, the CAC general assembly dubbed this participation an 'important innovation (...) [that would help to] increase the reputation of our Company and (...) help it to rise from the inconsequential situation bankers want to impose on it'. After a few years, the CAC was well established in underwriters' consortiums and it obtained conditions similar to those of the largest banks⁹⁶.

These moves suggest that the *Parquet* was not living on monopoly rents, but had to innovate and improve its services in order to maintain its position. Nevertheless, the *Parquet* also

⁹² Bouvier, *Le Crédit Lyonnais*; Lévy-Leboyer, 'La spécialisation des établissements bancaires'.

⁹³ Aupetit, Brocard, Armagnac, Delamotte, and Aubert, *Les grands marchés financiers*; Hautcoeur and Riva, 'The Paris financial market'.

⁹⁴ AG, 18/12/1882.

⁹⁵ See CAC general assembly of 1908 and 1910.

⁹⁶ AG, 17/12/1894 and 19/12/1904.

suffered from low profitability. This was the result of the constraints it faced, the decrease in its commissions and the rise in risks. It was not profitable to control almost the entire market for spot transactions: the number of small transactions was very high and commissions were low. Forward operations were potentially more profitable, but they also passed by and through a large number of intermediaries and were spread among a large number of securities, both of which increased costs. Huge positions were accumulated every liquidation period (1 to 1.5 billion francs), creating high risk. One major problem for the *agents de change* was that the positions accumulated on their market could not be offset on other markets, since Paris was the only or the dominant market for most of the securities, and the new 1898 rules excluded any risk-sharing with the *Coulisse*.

Many *agents de change* also believed that the monopoly was not profitable because of the strict regulation and the solidarity it imposed on them. Even more important was the incentive problem resulting from the 1901 reform: the fixing of a single, constant price for the *agents de change* seats pushed the collective, corporative approach to its limits. Previously, the CS had set the price partly on the basis of the brokerage house's clientele and business. This created incentives for the *agents* to develop their business. With the 1901 law, however, that incentive disappeared. As it was certainly difficult to get side-payments for such important and official transactions, this may explain why the brokerage houses increasingly became family assets, handed down to the sons or in-laws of existing *agents de change*, something which contributed to growing conservatism and a lack of entrepreneurship at the *Parquet*⁹⁷.

When increased volumes imposed capacity investment, the CS raised the number of pits while maintaining strict control over pricing to prevent a rise in volatility⁹⁸. The *Parquet* did not suffer during the 1904, 1907 and 1911 crises, contrary to other European exchanges and the *Coulisse*. But the leading *agents* were keen to take advantage of the need for capacity investment to change the market rules and increase their profitability: the CS proposed transferring the *Bourse* (*Parquet* and *Coulisse* together) from the Palais Brongniart to the Palais Royal (a much larger place) and incorporating it. The idea was for a large bank to be created from the reimbursement of the seat prices and *cautionnements* by the government. This bank would participate in the primary market. The *agents de change* would become private brokers and would compete with the *coulissiers* and other bankers on a free securities market in which the constraints imposed on the *Parquet* would no longer exist.

⁹⁷ Verley, 'Les opérateurs du marché financier'.

⁹⁸ As Baker shows for the US options market (Baker, 'The Social Structure').

The plan was supported by the CS and the leading *agents de change*, but was rejected by a CAC majority in 1913, save for the transfer of the *Parquet* to the Palais Royal. Had this radical reform gone through, it would probably have extended the transactions conducted by *agents* to security dealership and increased the necessary capital stock held by all *agents* to offset the greater risk (itself a result of greater competition, more risky positions as dealers, and the end of solidarity among brokers). This would have threatened the control of small *agents* over their brokerage house and their social position, and they would have lost the benefits of the Common Fund's egalitarian solidarity organization.

Whatever the government's attitude might have been had the plan been approved, the very debate suggests the *agents de change* were not in so much of a profitable monopoly situation as to protect it against any move, and that the solidarity that the government and investors valued so much was actually a substantial liability to many *agents*. Had World War I not broken out soon after, the pressure of the banks and the leading *agents de change* may well have led to the end of the monopoly a few years later.

Paradoxically, just as Parisian *agents de change* were considering the advisability of creating a new broad-based, private and less regulated market based on the London model, London brokers were discussing setting up a new market without jobbers because they were suffering from the jobbers' strong position following the 1909 axing of dual capacity. They ended up fixing minimum commissions in 1912⁹⁹. These developments were stopped in their tracks by World War I, which froze the 1913 positions and gave them the status of '*Belle Epoque*' symbols for generations of brokers and economists. Bear in mind they were only a step in a complex transformation.

Considered from the point of view of our theoretical framework, this period confirms that the *Parquet* remained under pressure from competitors even when it had the benefit of a strict legal monopoly. The narrowing in the differences in microstructures between the *Parquet* and the *Coulisse* led to the emergence of new actors (banks and the 'free market'). This leads us to observe the asymmetry between this period, with less organizational diversity due to the regulation of the *Coulisse*, and the 1880s, when it resulted from a reduction of the *Parquet*'s guarantees affecting mainly small investors. New markets emerged in the 1900s due to a swift response by professional investors to a move that affected their operations, something not so likely in the other case.

⁹⁹ Michie, *The London Stock Exchange*.

7. Conclusion

The *Parquet* was the center of the Paris securities market in the 19th century. Its legal monopoly is a distinctive feature of the French exchange regulation, but it is not a key element of the financial market, as it did not prevent other operators from organizing private exchanges or dealing privately in securities. Archives show that the crucial factor in the differentiation of the exchanges was their attempts to satisfy the heterogeneous demands of investors and issuers. This is in line with recent theories that suggest that the existence of different exchanges can emerge as a stable equilibrium in which efficient services are provided to market participants.

Our paper does not set out to measure market efficiency. It analyzes the changes in the market microstructures and shows that these changes and the resulting transformations can be understood in terms of the above theoretical framework. We describe these transformations as the result of ongoing interaction between the government, the *Compagnie des Agents de Change* and its competitors, bankers and *coulissiers*. That interaction led during most of the period to the juxtaposition of two exchanges, whose relationship was one of both cooperation and competition, involving the substantial specialization of each market.

In its early decades, many of the government rules were not enforced and there was little to tell official and unofficial brokers apart. It is only when heterogeneousness increased among investors that the two groups diverged. After 1830, the monopoly did not stop the *Parquet* from innovating. It introduced major organizational changes, enhancing investors' guarantees and reducing transaction costs. Following a very successful development in the 1850s, it attempted to swallow up the *Coulisse's* business and establish a true monopoly, but failed because of the contradiction between its internal organization and the demand of the *Coulisse's* clientele. In the wake of the 1882 crisis, the *Parquet* suffered a substantial decline due to its refusal to maintain the guarantees it had previously provided to investors, the emergence of new challenges from the deposit banks, and the regulations introduced following the crisis, of which the *Coulisse* took advantage. The *Parquet* re-emerged at the end of the century as the dominant exchange not only because its monopoly was strengthened, but also because its very low commissions and highly secure transaction process made it an ideal market for a large proportion of investors, and because it was able to re-establish complementary relations with the other markets and players.

The co-existence of different exchanges in the same financial center was actually not unique to Paris: in New York, the New York Stock Exchange, the Curb and other exchanges

competed during long periods of time and developed specific microstructures in order to specialize in particular investors and securities. In other countries, exchanges co-existed in not-so-distant cities because they developed similar complementarities¹⁰⁰. The tension between regulated transparent markets and opaque OTC markets is the simplest explanation for these differences. But the terms of this divergence and specialization are specific to each market. The great apparent difference between New York and Paris is said to be rooted in the *Parquet*'s legal monopoly. We contend that this was not crucial: Paris' first particularity was the compulsory in-pit open outcry, which was initially imposed for 'public order' reasons – law and order, not government intervention – and ultimately led to the development of the *Parquet* as a Walrasian transparent market providing fair prices and high security to investors. In New York, the NYSE was the result of a collusive agreement among traders who set common commissions in exchange for more transparent prices than on the Curb. What may actually be quite distinctive is the London case: a single exchange remained dominant for the entire century because the London courts prohibited exclusion from the exchange and later because the owners of the London Stock Exchange building rejected similar attempts at exclusion by members.

Since these three financial centers dominated the world on the eve of World War I, it is likely that all of them were quite efficient at producing prices and transactions of sufficient quality. Only a quantitative comparison of transaction costs and other aspects on which exchanges competed (such as risk, delivery and settlement procedures) can empirically assess the advantages and costs of different institutional set-ups for securities exchanges.

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¹⁰⁰ Cf. White, 'Competition among the Exchanges', Mulherin, Netter, and Overdahl, 'Prices are property', Davis, Neal, and White, 'How it all began' and 'The Highest Price Ever' for the USA; Riva, 'Compétition entre places financières' and 'Les grandes Bourses italiennes' for Italy; Houpt and Rojo Cigales, 'Regulation and microstructure' for Spain.

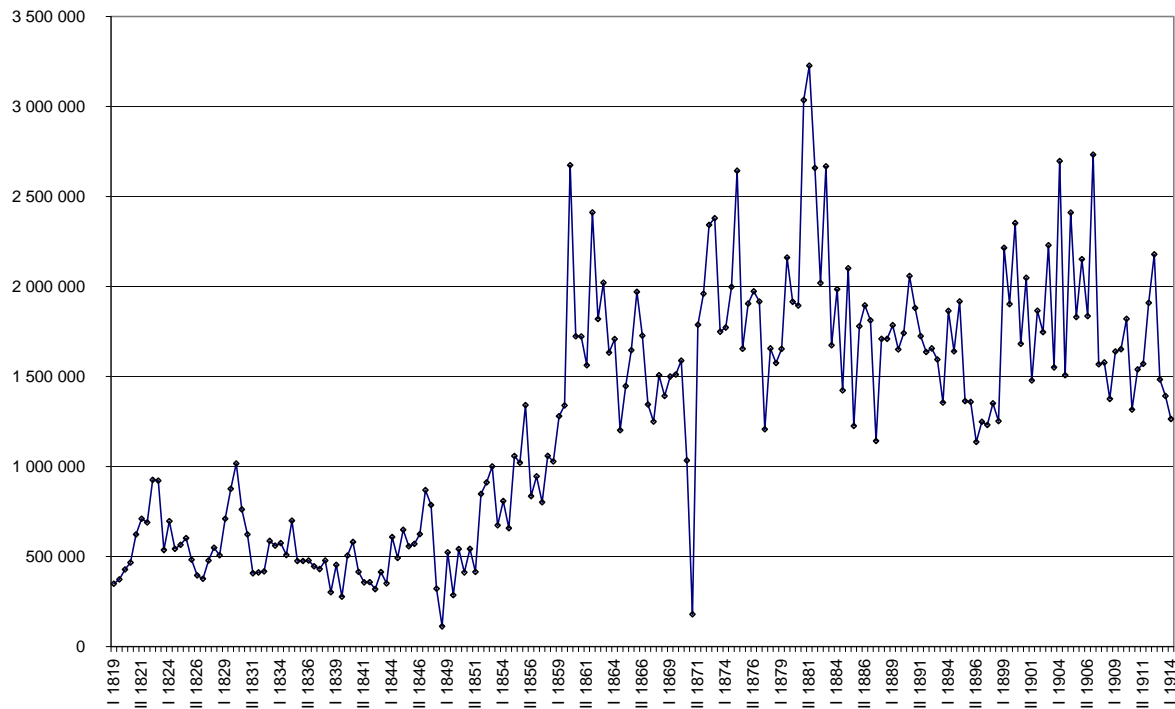
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Figure 1: Transaction volumes measured by stamp duty.



The stamp duty usually represented 10% of the commissions. Source: Grand Livre de la Chambre Syndicale de la Compagnie des Agents de Change de Paris, *sub anno*