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Stock exchange competition: the case of Geneva during the interwar period

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Despite its importance as a financial centre, the historical literature dedicated to the Swiss financial industry remains scarce. Analyses focusing on cantons and cities of the country are even more limited in number. This is unfortunate and is, in all likelihood, linked to the reluctance of financial institutions to share information in a country where banking secrecy has been at the core of the past success of these institutions. Despite this willingness to share as little as possible, some archival funds have gradually become available, most notably after businesses went bankrupt, changed hands, or simply disappeared. The present article relies on these sources to analyse the evolution of the Geneva stock exchange during the interwar period, which saw a gradual decline of its activity. Independent brokers strived to keep their oligopoly over banks. At the same time, Swiss German banks tried to penetrate the canton-controlled marketplace by using their federal rights and strength to become unavoidable actors. They could ultimately help local bankers gain direct access to the Geneva stock exchange, obliterating the power of brokers who were left with no other choice than to appeal to the Canton of Geneva to defend their position.

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I

Competition amongst stock exchanges has gained substantial attention recently with the failed attempt of the London Stock Exchange to merge with Deutsche Börse.[1] The rationale for mergers is relatively easy to understand. Since stock exchanges are meant to centralise trades – with the evolution of online platforms towards common order books – it may seem optimal to concentrate all trades in a single venue to exploit economies of scale (Malkamaki 1999; Keim and Madhavan 2000).

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[1] 'Deutsche Börse investors take aim at chief over failed LSE deal', *Financial Times*, 17 May 2017, www.ft.com/content/95cab7c8-3aec-11e7-ac89-b01cc67cfeec

The existence of local exchanges seems at first sight harder to justify. Several explanations have, however, been offered: local exchanges would allow catering to the specific needs of different segments of investors; they would also appeal to investors valuing face-to-face contact or a local market for which it is easier to get information (Ramos 2003). When the capacity of an exchange is fixed, congestion may furthermore limit the interest to concentrate all trades in a single venue (Davis, Neal and White 2007). In view of the importance of communication, mergers of exchanges located in places with different cultures or languages may also limit the gains from the merger (Ramos 2003). Eventually, investors with access to local information seem to outperform those without. Evidence from the equity trades of 756 professional traders located in eight European countries on a German electronic trading system shows that traders located outside Germany in non-German-speaking cities make lower proprietary trading profits (Hau 2001). Informational advantage seems, however, to be not only a function of location but also of size. Indeed, according to Hautcoeur and Riva (2013, p. 322), the largest financial institutions would favour trading 'in opaque and decentralised markets to maximise their informational rents'.

Mergers across exchanges are thus important in finance. Economic historians have tried to understand the merger process across several countries. In many countries the number of local exchanges at some point in time is striking. For instance, in a country as small as Belgium, at the end of the nineteenth century, transactions in securities were taking place, more or less regularly, in no less than ten regional exchanges (Willems 2002). Competition amongst exchanges was present even in a small country. Up until 1830, the Brussels stock exchange was in the shadow of Antwerp. Once Belgium became an independent country Brussels' market share grew dramatically (Veraghtert 1992). At the same time in France, stock markets existed in Bordeaux, Lille, Lyon, Marseille, Nancy, Paris and Toulouse. Ducros and Riva (2017) analyse the evolution of regional exchanges in France. They show that Lyon managed to get the largest share of trades for provincial exchanges, jumping from a market share of provincial trades of 30 per cent in 1871 to 59 per cent in 1913. For the United Kingdom, Killick and Thomas (1970) list stockbroking firms in 13 provincial cities in 1861. The gradual evolution from many local exchanges to a few national exchanges (or just one) has taken over a century to materialise in most countries.

The merger process was characterised in many countries by the competition existing amongst the different markets but also in some instances between bankers and brokers. This was, for example, the case in France, where banks played an important role (Hautcoeur and Riva 2012). Hautcoeur and Riva (2012) suggest that by the end of the nineteenth century banks' growing role in security issues and trading represented the biggest challenge faced by the *Parquet* (the official stock exchange). Banks were furthermore suspected of matching directly buy and sell orders from their clients without using the services of a broker, as was legally mandatory. The competition was not limited to banks. In Paris, official brokers faced the direct competition of the *Coulisse* (the parallel market existing at the time). According to Hautcoeur and Riva (2012), one should, however, view the relationship between the *Parquet* and the *Coulisse* not only as one of pure competition but rather as cooperative competition. They furthermore argue that 'in line with recent theoretical developments, … the juxtaposition of heterogeneous organisations had important virtues for market participants, since it allowed the exchanges to specialise in different investors and services and made the exchanges complementary to each other' (Hautcoeur and Riva 2012, p. 1326). Competition came also from provincial exchanges. Oosterlinck and Riva (2010) show that during the interwar period local exchanges in France were gradually losing market share. The split of the country into two zones, following the defeat of May 1940, provided a boost to the Lyon stock exchange. However, once the war was over, concentration resumed, ending in a general merger in 1991.

In New York, the Consolidated Exchange was a major actor between 1885 and 1925, even beating the New York Stock Exchange (NYSE) from time to time in terms of volume of trades (Brown *et al.* 2008). In the United States competition was, however, not limited to the competition within one city. White (2013) analyses the competition between the NYSE and the Consolidated and regional exchanges for the period 1900–33. In general, one observes a movement towards concentration of trades, but his study also shows that the general concentration pattern may exhibit reversals. Most notably, during the boom years, local exchanges and the curb increased their market share. White (2013) attributes this observation to the emergence of new and risky industries that were not easily accepted by the NYSE but welcomed by local exchanges with more lenient standards in terms of listing and disclosure requirements.

The literature has thus investigated competition amongst stock exchanges for many countries. However, and despite its importance as a financial centre, the historical literature dedicated to the Swiss financial industry remains scarce (Cassis 1991; Guex and Mazbouri 2010).[2] And to the best of our knowledge no study has attempted to analyse the competition between stock exchanges. This article aims to partially fill this gap by focusing on the Geneva stock exchange during the interwar period. The interwar period is of particular interest because the financial turmoil experienced by most developed countries had a direct effect on the Swiss financial industry. Secrecy laws were already present before World War I, but their importance for investors willing to escape fiscal pressure increased dramatically with the war (Guex 1999). The interwar period also led to a reorganisation of the Geneva stock exchange. This reorganisation should be read using a double competition grid: the competition between banks and exchanges on the one hand, and the competition between French-speaking and German-speaking exchanges on the other.

[2] This is unfortunate and is, in all likelihood, linked to the reluctance of financial institutions to share information in a country where banking secrecy and corporatist intermediation has been at the core of the past success of these institutions.

Sections II and III will try to shed some light on the developments behind the power struggles of these two axes of competition, and on the reasons behind the tilt of the previous equilibriums. Conclusions will be drawn in Section IV.

II

The Geneva stock exchange was created by an association of stockbrokers in 1850. At the time, there was no legislation in Geneva related to stock markets and the new undertaking was free to decide how to organise its trades (Bordier 1904, p. 12). An open outcry system was instituted in 1855. A year later, a law was passed regulating the exchange[3] (Meier and Sigrist 2006, p. 27). In February 1858 the rules of the stock exchange were modified. In order to guarantee the safety of the exchanges and, as a corollary, their job of intermediation, the stockbrokers created a closed-system that allowed admission only to those who had been sponsored by at least two brokers and who had been working for at least one year for an established broker. Capital requirements were substantial (200,000 CHF) and brokers had to set aside a lump sum of 50,000 CHF to guarantee their trades and limit counterparty risk[4] (Bordier 1904, p. 23). Both spot and forward trades were allowed.[5]

Until 1875, Geneva hosted the only stock exchange in Switzerland, hence its success at the time. In practice, the Geneva stock exchange was open to the public. This would remain a trademark of Geneva, the other stock exchanges that were founded later, Basel in 1866 and Zurich in 1873, refusing the public.[6] Trades were at first conducted by brokers on a single pit. The organisation of the exchange remained almost unchanged up until 1930. Afterwards the organisational changes should be viewed in terms of competition between cities (Geneva versus Basel or Zurich), but also between bankers and brokers, in terms of job functions and access to them. As will be detailed further, in just a few years after 1930, the Geneva stock exchange moved from an organisation in which Geneva brokers had the upper hand to one dominated by bankers originating from the German-speaking part of the country.

3 *Loi pour l'établissement d'une Bourse de commerce de Genève*.

4 Controls by an auditing firm, the Société Fiduciaire Suisse, were conducted twice a year in the 1920s but it is hard to determine when this practice started (*Procès-verbal de la Commission de la Bourse*, 21 October 1927, AEG AP305-1.3.124). In 1935, when Decrue & Cie signalled its troubled position, the stockbrokers' association stepped in to guarantee its operations while at the same time controlling the firm's deals. This decision was the result of lengthy debates (*Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 4 and 14 November 1935 and 25 March 1936, AEG AP305-1.3.28).

5 Forward trades were momentarily suspended during the crisis from 14 July 1931 to 25 November 1931 (*Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 20 July 1931 and 19 November 1931, AEG AP305-1.3.27).

6 AEG AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève.

During the 1920s, bankers repeatedly asked for direct access to the exchange.[7] Instead of relying on brokers, they wanted to be able to conduct their trades directly, as was the case in Basel or in Zurich. There was a clear financial motivation to be allowed to trade directly since, for similar operations, Swiss bankers were generally charged more than members of the exchange. In parallel, clients and foreign banks usually paid an even higher fee, with clients sometimes paying more than foreign banks. The bankers decided then to create an association to defend their rights on the stock exchange, the Commission des Banquiers près de la Bourse.[8] Its board was composed of a member designated by the Union Financière, the head of a Geneva bank, and the head of a Swiss German bank. Their lobbying action allowed them to reduce the difference in fees even though discrimination persisted.[9]

The institutional setting remained unchanged up until the middle of the interwar period. Even though bankers were willing to have a bigger say well before this date, it was only in 1928 that the Geneva government began investigating the need to change the existing structure.[10] According to the stockbrokers, two elements played an important role in this respect: fiscal motivations but also the examples of Zurich and Basel where bankers were allowed to trade directly on the market. A first commission was created in June 1928. Its conclusions favoured a dramatic change, but a minority report pleaded for the status quo.[11] As a result, a second commission, created in July 1929, suggested creating a new institution which would concentrate the powers from the Commission des Banquiers, the stockbrokers' association (Syndicat des Agents de Change) and the Comité 3-6-9.[12] The discussions leading to the creation of this body forced the stockbrokers to relinquish the monopoly they had on the admission of new securities to the exchange and of course the

[7] See, for example *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 3 December 1930, AEG AP305-1.3.27

[8] It seems banks used the Commission to deal with complaints regarding the brokers' association (Société des agents de change). For example, in September 1927 the Banque de Genève asked the Commission to discuss a problem related to Hungarian loans (Commission des Banquiers près la Bourse de Genève, *Procès-verbal*, 27 September 1927, AEG AP305-1.3.124).

[9] Following a harmonisation of fees which took place in January 1926, fees for subscription rights worth less than 5 CHF, members of the exchange were charged 0.05 CHF, Swiss bankers 0.10 CHF and foreign bankers and clients 0.15 CHF.

[10] AEG AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève.

[11] AEG AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève.

[12] The exact role of this commission was, according to contemporaneous observers, hard to establish but it seems it was involved with the real estate aspects of the exchange, the admission of new members and the listing of new securities. Meeting of the Commission de la Bourse, 12 January 1926, AEG AP305-1.3.124.

freedom they had experienced regarding the rules and regulations of the exchange.[13] Brokers wanted to keep trades in their hands.[14] They were also opposed to the creation of more than one trading pit (*corbeille*). On 22 May 1930 a general assembly of the 'users of the Geneva stock exchange' examined the proposed rules and regulations for the future Chambre de la Bourse de Genève,[15] a new version of the former stock exchange, now officially recognised by the Canton of Geneva.[16] These rules were in line with the wishes of the Geneva stockbrokers, and as local brokers and bankers formed a majority, the document was accepted.[17] Following the creation of the Chambre de la Bourse, which now integrated the various parties that had so far been lobbying against each other, the Commission des Banquiers près de la Bourse disappeared.[18]

The new rules were not to the taste of five of the main Swiss banks, headquartered in the Swiss German part. The Eidgenössische Bank,[19] the Schweizerische Kreditanstalt,[20] the Schweizerische Volksbank,[21] the Schweizerische Bankverein[22] and the Schweizerische Bankgesellschaft[23] wrote a minority note stressing the illegal character of some of these articles.[24] The tone of the note was fierce and suggested that legal action was likely to ensue. The main bone of contention was the fact that trades would occur in a single pit. Despite this opposition, the Council of State of Geneva (Conseil d'État de Genève) ratified the new statutes on 2 September 1930, which were formally accepted by the newly created Chambre de la Bourse de

[13] According to the newspaper *Bulletin Financier Suisse*, the stock exchange belonged to the 11 brokers forming the Société des Agents de Change. *Bulletin Financier Suisse*, 19 December 1930.

[14] The letter is explicit in this respect. Brokers are presented as independent whereas bankers are supposed to face conflicts of interest.

[15] This is the organisation we refer to when we use the terminology 'Geneva stock exchange'.

[16] This coincides with a transition period where the Swiss cantons wanted to tighten regulations regarding the use of their name in the designation of institutions. 'de Genève' in French can mean either 'from Geneva' or 'of Geneva', which can be misleading, as it implies the support of the authorities or some form of recognition which doesn't actually exist. In some documents, 'à Genève' is used instead, meaning located in Geneva.

[17] According to Paul Gilliand, a member of the Conseil de la chambre de la Bourse de Genève, the agreement reflected the wishes of the Geneva banks which favoured the existence of stockbrokers: 'un nouvel organisme qui répondait aux voeux des banques genevoises désireuses de voir maintenir le principe de l'agent de change, intermédiaire indépendant'. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 3 December 1930, AEG AP305-1.3.27.

[18] Letter dated 12 November 1930 from Paul Gilliand to Jean Mirabaud, AEG AP305-1.3.124

[19] Banque Fédérale SA. Swiss banks are sometimes better known in one language, we therefore report the various names and the English one if it was commonly used at the time, as well as their acronym if commonly used.

[20] Credit Suisse today, SKA.

[21] Banque Populaire Suisse, SVB. Its original name was Volksbank in Bern. Note the subtle difference between Volksbank in Bern and Berner Volksbank.

[22] Société des Banques Suisses, also known as Swiss Bank Corporation, SBS.

[23] Union des Banques Suisses, also known as Union Bank of Switzerland, UBS.

[24] AEG AP305-1.3.1, *Procès-verbal de l'Assemblée des Usagers de la Bourse de Genève*, 22 May 1930.

Genève on 5 November 1930.[25] At the end of this first round, the financial institutions originating from Geneva (brokers and bankers together) had joined forces against the Swiss German banks. This 'alliance' would, however, end quickly.

Despite this setback, the main Swiss German banks mentioned earlier did not consider they had lost the battle. To circumvent the new rules, the five persons representing these banks at the assembly of the 'users of the Geneva stock exchange' asked the government to register them officially as brokers.[26] Once this was done, in December 1930, they asked to be admitted to the Chambre de la Bourse, with the intention of opening a second pit. The second pit was clearly intended to be a place where banks' representatives would be able to trade together.[27] The admission of these new brokers was refused[28] as they were accused of being 'bankers in disguise', but also because in practice it would have given two votes to each of the banks involved,[29] because of the vote given to brokers (who were not supposed to represent banks or to be bank brokers so far) plus the vote given to the banks in the assembly. Simultaneously, the general assembly refused to allow the creation of a second pit as its members felt it was useless since securities traded on this pit would not be different from the ones traded in other pits.

Following this action, the Chambre de la Bourse began a lobbying action to convince the Geneva government that their point of view was not only valid but also in line with the interests of the local economy.[30] In a letter addressed to the President and Members of the Conseil d'État de la République et Canton de Genève, the President and Vice President of the Chambre de la Bourse highlighted the legality of their action. Since the Council of State of Geneva had the ability to force the Chambre de la Bourse to accept these brokers, the signatories of the letter stressed all the negative consequences their admission would bring. First, accepting them would question the independence (from bankers) of the stockbrokers and jeopardise the market trading mechanisms. Second, and this is implicit in the letter, accepting these new members would reduce the power of local institutions. The authors of the letter stressed that these five houses 'try to destroy an organisation in line with

[25] AEG AP305-1.3.1, *Procès-verbal de l'Assemblée des Usagers de la Bourse de Genève*, 5 November 1930.

[26] This came as a surprise to the members of the Chambre de la Bourse, whose president asked the Chancellor of Geneva to be informed in future. AP305-4.4.1, letter dated 17 December 1930 from members of the Chambre de la Bourse addressed to Eugène Muller, Chancellier de la République et Canton de Genève.

[27] AP305-4.4.1, letter dated 20 December 1930 from the five representatives addressed to the President de la Chambre de la Bourse.

[28] 28 against, 5 for (in all likelihood the Swiss German large banks).

[29] AEG AP305-1.3.1, *Procès-verbal de l'Assemblée des Usagers de la Bourse de Genève*, 9 January 1931 and AEG AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève.

[30] AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève.

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the wishes of the population of Geneva and of the 31 financial institutions of Geneva'.[31] Their admission would threaten the existence of local financial institutions, pits of dubious quality would increase in number and the open outcry system would work less efficiently, as was the case in Zurich, according to the authors. Eventually, the authors stressed that differentiation was the only way for the Geneva exchange to counter the growing importance of Zurich. Differentiation would, according to the members of the Geneva exchange, guarantee survival as potential investors would recognise the impartiality of the brokers.[32] Furthermore, the way trades were conducted in Geneva was more likely to appeal to investors from the Anglo-Saxon world and from Latin countries.[33] The local press also entered the game, the *Bulletin Financier Suisse* denouncing the schemes and plots of the Swiss German banks, accusing them of having joined forces with the socialists.[34]

The Swiss German banks did not leave the matter there. In April 1931, the main banks denounced a convention that had existed since 1925. This convention guaranteed that banks would use the services of brokers to conduct the trades occurring in the morning. In other words, it prohibited the so-called 'franco' transactions, i.e. transactions which were done between banks without the services of brokers.[35] These franco transactions are similar to the ones conducted, illegally, by many French banks at the end of the nineteenth century. From April 1931 on, banks thus began to engage in franco transactions on the premises of the stock exchange.[36] The banks in Geneva followed their peers in other parts of the country.[37] In 1935 banks were still trading together without using the services of brokers, who

[31] AP305-4.4.1, letter dated 2 February 1931 from Charles Gautier and Paul Gilliand, respectively President and Vice President of the Chambre de la Bourse to the President and Members of the Conseil d'État de la République et Canton de Genève, p. 9. 'Il est pour nous inadmissible que par l'artifice de cinq agents mandatés cinq maisons cherchent à détruire une organisation qui correspond aux vœux du public genevois at à la volonté des 31 maisons genevoises de la place.'

[32] Similar discussions occurred in the USA culminating in the Glass–Steagall Act of 1933 (the common name for the Banking Act of 1933). This Act established the Federal Deposit Insurance Corporation (FDIC) but separated commercial and investment banking, preventing investment banks and securities firms from taking deposits on one side, and prohibited commercial banks from issuing and dealing non-governmental securities for their clients and for their own portfolios. The Gramm–Leach–Bliley Act of 1999 put an end to the prohibition of affiliation between both types of institutions.

[33] Interestingly, according to the modern finance literature, differentiation is indeed one element explaining the absence of stock exchange mergers in some countries (Ramos 2003).

[34] *Bulletin Financier Suisse*, 19 December 1930

[35] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du jeudi 28 janvier 1932*, AEG AP305-1.3.2.

[36] Letter dated 22 June 1935 from Charles Gautier, President of the Chambre de la Bourse, to the Conseiller d'État, Alfred Naine, head of the finance and taxes department.

[37] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du jeudi 28 janvier 1932*, AEG AP305-1.3.2. It seems private bankers had also previously complained about the brokers' monopoly. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 19 December 1930, AEG AP305-1.3.27.

complained to the Président du Conseil d'État de la République du Canton de Genève.[38] Their letter shows the dire straits in which brokers found themselves. In their appeal to the Président du Conseil d'État, they stressed the decline in business due to the failure of several banks (Banque de Genève and Banque d'Escompte Suisse, to mention two of the largest). In their eyes, bankers were guilty on two counts: by failing they had reduced brokers' business, and by engaging in franco transactions they were further hurting them. Brokers were prompt to dismiss the claim made by banks that using their services would expose them to too high a counterparty risk. They presented the issue as a matter of life and death, highlighting in their signature that some 50 jobs were at stake.

In June 1936, the Zurich stock exchange contacted the other Swiss exchanges (of Bern, Basel, Geneva, Lausanne, Neufchâtel and Saint Gall) to create an association of Swiss exchanges which would enable stock exchanges to share competences and standardise practices. The French-speaking exchanges were at first reluctant, believing that standardisation would in the long run harm them, but the fear that the federal government would pass a law regulating exchanges prompted them to change their position.[39] Eventually, the Geneva stock exchange joined the Association of Swiss Exchanges in February 1938.[40] The statutes of the new structure provided that the number of representatives from each exchange would be proportional to the number of members of each exchange. In practice, this meant that Geneva would send four representatives, and Basel and Zurich would send three each.[41] The Geneva exchange also adhered to the rules of the Instance Suisse d'Admission des Valeurs Etrangères, even though the new body was in fact reducing the prerogatives of the exchange.[42] The aim of the admission board was at first to give advice regarding

[38] Letter dated 7 May 1935 from 11 brokers to Albert Naine, Président du Conseil d'État, AEG AP305-4.4.1.

[39] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 11 mars 1937*, AEG AP305-1.3.2. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 14 September 1936, AEG AP305-1.3.28. This form of corporatism was by no means restricted to stock exchanges. In fact, corporatism was widespread in Switzerland in the 1930s (Rosenkrantz *et al.* 2014). Corporatism has always been and is still a key component in the relationship between the government and the corporate environment. If a given profession or type of actors were to sufficiently organise themselves and represent the whole practice, they would obtain federal recognition and even federal rights, such as organising the federal entrance exam to their profession. Thus the motivation to join forces to avoid someone else regulating your practice is paramount in the final decision. See also Meier and Sigrist (2006, p. 44) regarding the threat of regulation.

[40] Association des Bourses Suisses. *Procès-Verbal de l'Assemblée Générale Extraordinaire du 12 janvier 1938.* Association des Bourses Suisses. *Procès-Verbal de l'Assemblée Générale Ordinaire du 24 mars 1938*, AEG AP305-1.3.3. The association was composed of the Basel, Bern, Geneva, Lausanne, Neuchatel, St Gallen and Zürich stock exchanges (Meier and Sigrist 2006, p. 44).

[41] *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 3 March 1938, AEG AP305-1.3.28.

[42] The Swiss National Bank (SNB) was hoping these new institutions would have more of a say, but this was not the view of the ministry of finance. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 29 September 1937, AEG AP305-1.3.28. Association des Bourses Suisses. *Procès-Verbal de l'Assemblée Générale Extraordinaire du 12 janvier 1938.*

the listing of foreign securities, but it gradually came to be consulted for all new loan issues.[43]

On the organisational side, the rearguard actions undertaken by the brokers were in vain. To the best of our knowledge, no brokers attempted to sue bankers engaging in franco operations and it seems that gradually members of the exchange accepted the practice. By 1942, the Société des Banques Suisses (SBS; also known as the Swiss Bank Corporation, SBC) had become the most active actor on the Geneva stock exchange, its business representing approximately 20 per cent of the total traded volume (Perrenoud *et al.* 2002, p. 79). On 1 January 1945, the Geneva stock exchange modified its structure once more. The decision to change the organisational structure, taken in November 1944,[44] stemmed from the low liquidity observed on the exchange. To address this issue, it was deemed crucial to centralise all trades in one pit. Therefore it was necessary to convince bankers and brokers to cooperate. Eventually bankers were allowed to trade directly like any other broker. The new board would be represented by three members from private banking, three members from the major (Swiss German) banks and two members not belonging to either of these groups.[45] The second round was thus won by the big banks. The minutes of the November 1944 meeting stressed that four brokers would continue their trade,[46] whilst five were ceasing their activities.[47] Following this decision, the Geneva stock exchange ended up being organised according to the German rather than the French model (Meier and Sigrist 2006, p. 49).

On the international side, the Bourse de Genève also tried to consolidate its position and to assert itself as a leading Swiss exchange. When several exchanges in Europe began discussing the creation of an international association of exchanges trading sovereign bonds (Bureau International des Bourses de Fonds Publics), the Geneva stock exchange signalled its interest.[48] The president of the Geneva exchange

[43] It seems only loans were affected by this measure ('consulté pour chaque émission d'emprunt'). The document is silent on the reasons why the other securities were not treated in a similar way. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 2 April 1937, AEG AP305-1.3.28 and *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 14 mars 1940*, AEG AP305-1.3.3.

[44] *Rapport du Conseil à l'Assemblée extraordinaire des membres de la chambre de la Bourse de Genève du 30 novembre 1944*, AEG AP305-1.3.4.

[45] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 15 mars 1945*, AEG AP305-1.3.4.

[46] *Rapport du Conseil à l'Assemblée extraordinaire des membres de la chambre de la Bourse de Genève du 30 novembre 1944*, AEG AP305-1.3.4.

[47] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 15 mars 1945*, AEG AP305-1.3.4. This end was already predicted by Paul Gilliand in March 1931 during the discussions related to the right of banks to trade directly on the exchange. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 13 March 1931, AEG AP305-1.3.27.

[48] Letter dated 14 December 1931 from the President of the bourse to the Bureau International des Bourses de Fonds Publics, AEG AP305-4.4.1.

stressed the important part Switzerland had played in the flotation of sovereign bonds as a reason to include a Swiss member in the association. One of the main goals of the association was to improve the ability to trade securities across borders, but its members were also concerned with the evolution of their environment and were eager to increase their profits through an increase in trades.[49] A representative from Geneva attended the meeting of the association in 1932. Nevertheless, the role played by this organisation decreased as the crisis deepened. Participating exchanges dropped from 30 in 1931 to 12 in 1932 and 7 in the autumn of 1934. In 1935, the only Swiss representative of the association, renamed the Bureau International des Bourses de Valeurs Mobilières, was a member of the Zurich stock exchange.[50]

III

The evolution of the stronghold of brokers in favour of bankers happened in a particular environment. In terms of activity, at the end of the nineteenth century the currency trade declined substantially as banks preferred trading directly with each other rather than using the services of the stock exchange (Bordier 1904, p. 34). The international outlook of the Geneva exchange made it vulnerable to an international financial crisis. It suffered, for example, from the consequences of the Anglo-Boer War and the 1907 crisis, as well as from the Balkan Wars (Seitz 1930, p. 94). But international exposure also meant opportunities. Geneva was the first Swiss exchange to open a foreign exchange section (Seitz 1930, p. 95).

During World War I, the Geneva stock exchange was the first Swiss exchange to adapt to the new environment. At the outbreak of war, trades were almost non-existent; nonetheless, the Geneva stock exchange remained open.[51] During the first years of the war, the Geneva stock exchange thus faced difficulties. These difficulties were due to the high number of foreign securities listed on this exchange and to the importance of foreign exchange transactions for it, both of which hampered because of the war. Geneva was not the only exchange in trouble and in September 1915 representatives of the Basel, Geneva and Zurich stock exchanges met to discuss a plan of action (Meier and Sigrist 2006, p. 38). Gradually, however, Swiss securities came back to Switzerland (Meier and Sigrist 2006, p. 37). Transactions resumed and foreign securities, which up till then were not traded in Geneva, began to be listed. According to the Société de Banque Suisse (1917,

[49] *Rapport de M. Alfred Post et Frédéric Finfe présenté à MM. Les délégués des Bourses de Fonds Publics réunis à la Bourse de Paris le 27 juillet 1931* and *Rapport Complémentaire de M. Frédéric Finfe présenté à MM. Les délégués des Bourses de Fonds Publics réunis à la Bourse de Paris le 27 juillet 1931*, AEG AP305-4.4.1.

[50] Bureau International des Bourses de Valeurs Mobilières, *Procès-Verbal de la réunion du 28 juin 1935*, AEG AP305-4.4.1.

[51] *Les Bourses suisses 1916–1917,* Société de Banque Suisse, Bulletin Mensuel no. 10, October 1917. Bonds remained traded in both Geneva and Lausanne while almost all European stock exchanges had closed (Meier and Sigrist 2006, p. 37).

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p. 104),[52] these changes reaffirmed the international character of the Geneva stock exchange. The war also partially severed outside influence regarding stocks: prices that up until then were heavily influenced by prices made abroad began to react independently. As the war dragged on, Swiss bankers began to engage in arbitrage operations to attempt to take advantage of the sharp price changes experienced by foreign currencies (Georg 1920). Switzerland was ideally placed to exploit its position as a neutral country surrounded by belligerents. The foreign exchange section, which had suffered at the onset of the war, soon proved to be highly profitable. The war actually allowed the Geneva exchange to occupy an important international position in this trade (Seitz 1930, p. 95).

The financial crisis which started in 1920 had a direct impact on the Geneva market (Seitz 1930, p. 108). The stock exchange was also affected by demands to lift bank secrecy and to raise a tax on wealth (Seitz 1930, p. 108). Campaigns were waged during 1922 and it was only in December of that year that voters decided to keep the status quo (Seitz 1930, p. 109). Trades had declined by the middle of the 1920s, prompting brokers to reduce fees on trades. In January 1926, in view of the limited number of trades for many securities, the Commission de la Bourse asked bankers to act as market makers for the securities they had helped to float on the market; they did this in order to avoid the frequent remark 'ni demande, ni offre en cette valeur'.[53]

The international outlook of the Geneva exchange forced its members to discuss the actions to be taken regarding foreign securities. In July 1931, the German government imposed a moratorium (standstill agreement) which blocked foreign-owned balances held in German institutions (Faith 1982, p. 58). Initially planned for six months, the moratorium was renewed regularly, leading to large losses for German banks' creditors. The German moratorium drastically affected the trade of German securities as the stock exchange committee stopped quoting German and Hungarian stocks. Difficulties in trading German securities were compounded by the fact that as a result of the negotiations, securities had to be treated differently depending on the nationality of their holder, a distinction being made between German, Swiss and other citizens.[54] Forward trades were banned at the same time.[55] The number of traded securities was further reduced when the UK left the gold standard in September 1931, with only Swiss federal, cantonal and city loans being allowed on the floor.[56] To limit the impact of the crisis, prices were at first not allowed to diverge by more than 10 per cent from their previous value.[57] But a

52 *Les Bourses suisses 1916–1917,* Société de Banque Suisse, Bulletin Mensuel no. 10, October 1917.

53 Commission des Banquiers près la Bourse de Genève, January 1926, AEG AP305 1.3.124.

54 *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 6 mars 1934*, AEG AP305-1.3.2. For other securities, nationality had been scrutinised earlier. This was, for example, the case for Swedish securities in October 1931. *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 14 October 1931, AEG AP305-1.3.27.

55 Similar measures were taken in Basel and Zurich; see Lussy *et al.* (2001).

56 *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 22 September 1931, AEG AP305-1.3.27.

57 *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 23 September 1931, AEG AP305-1.3.27.

few days later, trading began to resume more or less as usual.[58] In 1932 the stock exchange at first considered suspending trades in the Kreuger shares when the scandal regarding this holding broke out. Nevertheless, for fear that trades in these shares would end up on a black market the brokers kept the shares listed.[59] The exchange rate instability led also the stock exchange committee to try to quote as many currencies as possible.[60] The international monetary turmoil also affected the trades of other securities for which coupons were to be paid with a fixed exchange rate. The reluctance to respect the agreement, for example, led the Geneva exchange to suspend trades for shares from the Société Méridionale d'Electricité.

Following the German invasion of Belgium on 10 May 1940, Swiss stock exchanges were closed. They reopened on 9 July 1940.[61] When the stock exchange reopened, most foreign securities were not tradable, but by the end of 1940, business had more or less resumed as usual. During the war, difficulties in transferring shares affected the volume of trades.[62] In January 1943, Swiss exchanges jointly increased trading fees. Foreign securities were affected by various measures. Affidavits were required for some securities (such as an Argentinian one, for example, in 1942[63]). Other securities were transformed from bearer securities to registered ones (Italian securities in 1942, for example). These transformations were not specific to the Geneva exchange as at about the same time similar measures were imposed in France (Oosterlinck 2010). Despite the important number of securities floated during the war, the Geneva stock exchange began losing ground against other exchanges. Cantons, such as Valais, which used to cross-list their loans in Geneva, started to omit this exchange.[64] In all likelihood, these decisions were the consequence of the low liquidity for such securities on the Geneva stock exchange. As early as 1938, brokers were complaining about the low liquidity of fixed-income securities issued by the cantons or by the federal government.[65] Despite this, low-liquidity loans, and in particular loans issued by these entities, represented the vast

[58] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Extraordinaire du 28 janvier 1932*, AEG AP305-1.3.2.

[59] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 28 mars 1933*, AEG AP305-1.3.2.

[60] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 28 mars 1933*, AEG AP305-1.3.2.

[61] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 27 mars 1941*, AEG AP305-1.3.3.

[62] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 18 mars 1943*, AEG AP305-1.3.3.

[63] Affidavits had already been required for Austrian securities following the Anschluss. *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 21 mars 1939*, AEG AP305-1.3.3.

[64] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 18 mars 1943*, AEG AP305-1.3.3.

[65] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 21 mars 1939*, AEG AP305-1.3.3.

majority of loans issued on the Geneva stock exchange. Table 1 details the proportion of loans issued on the Geneva stock exchange, by main type of issuer.

Table 1 shows that Swiss public funds represented the bulk of the issues for most years.[66] During the war years, they represented up to 95 per cent of all new issues listed on the exchange. Swiss banks represented another important segment throughout the period. As for foreign loans, their importance varied substantially. Quite logically, there were no issues during World War II. But even before that date members of the stock exchange were complaining about the level of the taxes to issue securities (the *timbre d'émission*), which according to them hampered the issuance of foreign securities.[67]

New issues on the Geneva stock exchange proved to be extremely volatile. For the years for which data is available, it seems hard to discern a real trend. Figure 1 tracks the evolution of the amounts issued for new loans.[68]

New issuances were not large enough to limit the decline in the number of securities listed on the exchange. Figure 2 provides the evolution of the number of securities listed in Geneva. From close to 600 in 1931 the number fell to below 500 in 1939, to stabilise around 480 during the next years. Overall, this represents a decline of close to 20 per cent in 15 years.

The activity on the exchange declined as the years passed. The trend is clear in Figure 3, which provides the yearly turnover on the Geneva stock exchange from 1931 to 1945. The data come from the yearly reports of the Geneva stock exchange. Figures are given directly in the report for 1931 to 1933 and estimated on the basis of taxes for the other years.[69]

Figure 3 shows a sharp decline in volumes from 1931 to 1934, with trades resuming in 1935, to peak in 1937 before experiencing another slump. This observation is close to the one reported by Lussy *et al.* (2001) for Zurich. It reflects the effect of the world crisis that started in 1929. French and US provincial exchanges experienced a similar pattern during the interwar period (Dubost 1938; Oosterlinck and Riva 2010; White 2013). Joly (2017) reviews share issues in Lyon and shows that applications for shares experienced a dramatic drop in the 1930s. A strong increase in trades during the 1920s

66 Issues of shares are mentioned in the various *Rapports du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale* (1932–46), but in many cases the amounts issued are not provided or are given in different currencies. For example, in 1937, the stock market admitted to its listings shares from Ateliers de Sécheron (4,000,000 CHF), Concordia (867,000,000 RON) and 450,000 shares (non-liberated) from the Compagnie Française des Mines de Bor. This presentation renders comparison over the years hard to realise, hence the focus on loans. To the best of our knowledge there is unfortunately no trading volume for each group of securities. The turnover by security is also not available.

67 *Procès-verbal du Conseil de la chambre de la Bourse de Genève*, 4 November 1935, AEG AP305-1.3.28.

68 Stocks were also issued but it seems from the various minutes of the General Assembly that they represented a small fraction of the issues.

69 The rate of the *droit cantonal* was equal to 0.01% of turnover. In the reports from the assembly the value of the *droit cantonal* were also used to guage turnover.

Table 1. *Proportion of loans issued on the Geneva stock exchange, by type of issuer, between 1932 and 1945 (in percentages)*

	(a) Federal loans	(b) Cantonal loans	(c) City loans	(a + b + c) Swiss public loans	Swiss Banks	Foreign states	Swiss industry†	Foreign industry/ railroads
1932	50.00	2.26	3.48	55.74	13.48	4.36	1.74	24.49
1933	39.48	13.42	6.98	59.88	3.95	2.19	1.32	24.45
1934	41.57	9.03	3.56	54.16	19.12	0.00	0.00	23.75
1935	21.41	0.00	1.01	22.41	6.30	71.00	0.00	0.00
1936	50.78	0.00	0.00	50.78	24.45	24.77	0.00	0.00
1937	45.56	11.04	10.05	66.65	8.19	12.59	3.28	0.00
1938	42.10	0.00	10.74	52.84	9.26	6.90	2.00	24.84
1939	0.00	24.84	12.78	37.62	26.30	9.13	7.30	14.90
1940	0.00	24.14	10.34	34.48	48.28	0.00	17.24	0.00
1941	57.22	11.27	4.75	73.24	17.61	0.00	5.99	3.17
1942	80.39	5.41	5.18	90.98	4.28	0.00	3.23	1.50
1943	48.95	18.57	1.69	69.20	11.39	0.00	13.08	6.33
1944	81.99	4.85	3.10	89.93	8.23	0.00	0.00	1.84
1945	90.75	2.80	1.56	95.11	3.27	0.00	0.00	1.62

Notes: The first three columns (a–c) are the components of the fourth one. †The amount of Swiss railroad issuances at that time is negligible.
Source: *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale* (1932–46).

was followed by a strong decline after the crash. The only difference between the two cases resides in the time at which the decline began: it occurred as early as 1929 in the US, but only in 1933 in the French case. The general decline observed on the Geneva exchange seems consistent with this pattern. Before the stock market crash regional exchanges were increasing their market share, a movement brought to a halt by the crash. Without data from other Swiss exchanges and with data starting only in 1930 it is impossible to show that the same pattern occurred in Switzerland. Nonetheless, regarding the general decline observed after 1930 in Geneva, one might conjecture that Swiss exchanges experienced a similar movement towards concentration.

The recovery that blossomed in 1934 was fuelled by the devaluation of the Swiss franc in 1936,[70] but turned it out to be short-lived. Nonetheless, this rebound allowed the Geneva exchange to enter the war period in relatively better shape than French provincial exchanges which were at the time described as moribund

[70] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 11 mars 1937*, AEG AP305-1.3.2.

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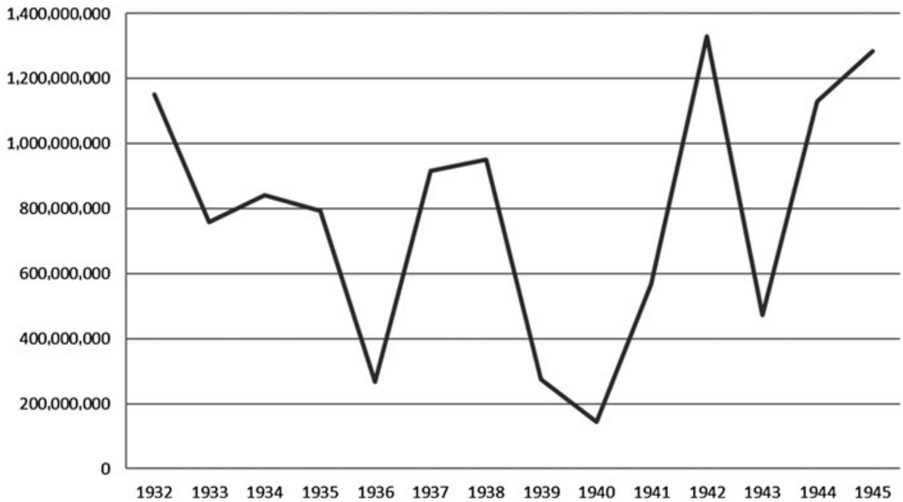

Figure 1. *New loan issuances on the Geneva stock exchange, from 1932 to 1945 (amounts in CHF)*
Source: *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale* (1932–46).

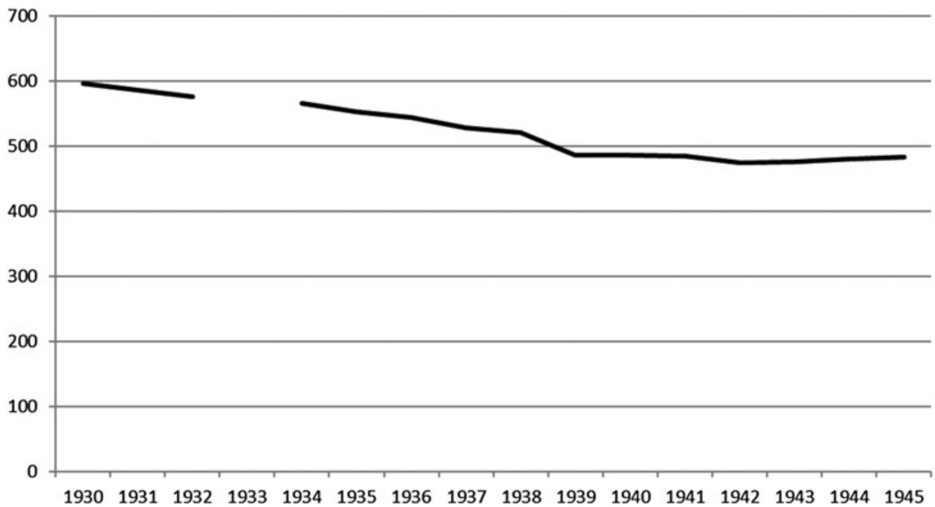

Figure 2. *Number of listed securities (bonds and equities), at year's end, from 1930 to 1945*
Source: *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale* (1932–46).

(Dubost 1938). This was not the first time regional stock exchanges had faced difficulties: at the end of the nineteenth century, the Lyon stock exchange had had to fight for its survival (Ducros and Riva 2014; Ducros 2018). In the case of Switzerland, the war limited transfers with foreign markets significantly, but it had a positive impact on

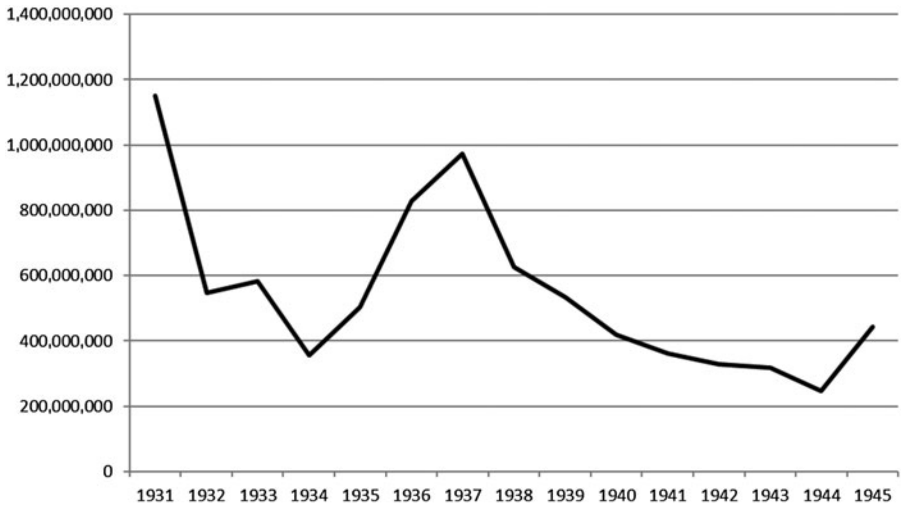

Figure 3. *Yearly turnover on the Geneva stock exchange, from 1931 to 1945 (amounts in CHF)*
Source: *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale* (1932–46).

the prices of Swiss securities.[71] Considering this element, it is safe to say that volumes diminished considerably during the war. It was only at the very end of the war that trading volumes began to recover.[72] By contrast, in occupied France, Lyon exploited the division of the country and the creation of an unoccupied zone ruled by the Vichy government to expand its trades (Oosterlinck and Riva 2010; Ducros 2018). Other provincial exchanges located in the so-called 'Free zone', such as Marseille, also benefited from the change brought by the occupation. The increase in the market share of these provincial exchanges disappeared, however, as soon as the country was liberated.

IV

Despite its importance as a major financial centre, little is known about Geneva's financial marketplace during the interwar period. This article presents the evolution of the Geneva stock exchange during this period. It shows that the exchange experienced a gradual decline in activity, as was the case for provincial exchanges in other countries at the time (France, for example). On the organisational side, the Geneva stock exchange changed dramatically between 1914 and 1945. During the first quarter of the twentieth century, brokers from Geneva had the upper hand. The

[71] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 26 mars 1942*, AEG AP305-1.3.3.

[72] *Rapport du Conseil d'Administration de la Société Coopérative de la Chambre de la Bourse à l'Assemblée Générale Ordinaire du 14 mars 1946*, AEG AP305-1.3.4.

power within the exchange shifted during the 1930s and by the end of World War II the exchange was dominated by the major banks of the Confederation.

Without archival evidence from the main banks, it is hard to determine what prompted these banks to adopt a strategy that eventually allowed them to gain more and more control on the Geneva stock exchange. The need to limit trading costs was certainly the element which triggered their intervention, but they could have adopted other approaches to reach this end. One possibility would have been to push for a merger of the Swiss exchanges. Since both Zurich and Basel accepted that banks traded directly this would have solved their problem. This course of action was, however, not adopted. Several elements may have played against this approach. First, at the time stock exchange mergers were uncommon. Even though at the international level there were calls for closer cooperation, mergers seem not to have been on the agenda. Second, differences in language and culture would have limited the gain from the merger. Third, if one follows the arguments presented by Hautcoeur and Riva (2013), as large financial institutions, the main banks had an interest in keeping several exchanges. The reaction from the brokers in Geneva also warrants discussion. Archival evidence shows that they never really envisioned a closer cooperation with the other Swiss exchanges. Closer cooperation with the other Swiss exchanges would in all likelihood also have led to a larger say from the banks. Local banks, which at first sided with the Geneva stock exchange, opted relatively soon to side with the other banks. As a result, the local brokers were left with no alternative but to ask for the support of the local government.

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Sources

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References

BORDIER, A. (1904). *Notice sur la Société des Agents de Change de Genève*. Geneva: Imprimerie Romet.

BROWN, W. O., MULHERIN, H. J. and WEIDENMIER, M. D. (2008). Competing with the New York stock exchange. *Quarterly Journal of Economics*, **123**(4), pp. 1679–1719.

CASSIS, Y. (1991). L'histoire des banques suisses au XIXe et XXe siècles, *Revue suisse d'histoire*, **41**, pp. 512–20.

DAVIS, L. E., NEAL, L. and WHITE, E. (2007). The highest price ever: the great NYSE seat sale of 1928–1929 and capacity constraints. *Journal of Economic History*, **67**(3), pp. 705–39.

DUBOST, R. (1938). *La Bourse de Lyon*. Lyon: Bosc frères M. & L. Riou.

DUCROS, J. (2018). Rôle des marché financiers et concurrence entre bourses: grandeur et décadence de la Bourse de Lyon, 1800–1945. Unpublished PhD dissertation, Paris Sciences et Lettres PSL Research University, EHESS.

DUCROS, J. and RIVA, A. (2014). The Lyon stock exchange: a struggle for survival (1866–1914). Paris School of Economics Working Paper, 2014–09.

DUCROS, J. and RIVA, A. (2017). La Bourse de Lyon et les autres: une première évaluation de la géographie des marchés financiers français au XIXe siècle. *Revue d'économie industrielle*, **4**, pp. 47–83.
FAITH, N. (1982). Safety in numbers. *The Mysterious World of Swiss Banking*. London: Hamish Hamilton.
GEORG, E. (1920). *Le Comptoir d'Escompte de Genève 1855–1920*. Geneva: Comptoir d'Escompte de Genève.
GUEX, S. (1999). Les origines du secret bancaire suisse et son rôle dans la politique de la Confédération au sortir de la Seconde Guerre Mondiale. *Genèses*, **34**, pp. 4–27.
GUEX, S. and MAZBOURI, M. (2010). L'historiographie des banques et de la place financière suisses aux 19^{e}–20^{e} siècles. *Traverse*, **17**, pp. 203–28.
HAU, H. (2001). Location matters: an examination of trading profits. *Journal of Finance*, **56**(5), pp. 1959–83.
HAUTCOEUR, P.-C. and RIVA, A. (2012). The Paris financial market in the nineteenth century: complementarities and competition in microstructures. *Economic History Review*, **65**(4), pp. 1326–53.
HAUTCOEUR, P.-C. and RIVA, A. (2013). What financiers usually do, and what we can learn from history. *Accounting, Economics and Law*, **3**(3), pp. 313–31.
JOLY, H. (2017). Le financement des entreprises industrielles par leurs actionnaires: étude empirique d'un corpus de sociétés lyonnaises (1921–1953). *Revue d'économie industrielle* **4**, pp. 85–106.
KEIM, D. and MADHAVAN, A. (2000). The relationship between stock market movements and NYSE seat prices. *Journal of Finance*, **55**(6), pp. 2817–40.
KILLICK, J. R. and THOMAS, W. A. (1970). The provincial stock exchanges, 1830–1870. *Economic History Review*, **23**(1), pp. 96–111.
LUSSY, H., BONHAGE, B. and HORN, C. (2001). Schweizerische Wertpapiergeschäfte mit dem 'Dritten Reich'. *Handel, Raub und Restitution*. Publications de la CIE, vol. 14. Zürich: Chronos Verlag.
MALKAMAKI, M. (1999). Are there economies of scale in stock exchange activities? Bank of Finland Discussion Papers, 4/99.
MEIER, R. T. and SIGRIST, T. (2006). *Der helvetische Big Bang. Die Geschichte der SWX Swiss Exchange*. Zurich: Verlag Neue Zürcher Zeitung.
OOSTERLINCK, K. (2010). French stock exchanges and regulation during World War II. *Financial History Review*, **17**(2), pp. 211–37.
OOSTERLINCK, K. and RIVA, A. (2010). Competition among the French stock exchanges during the Second World War. In P. Baubeau and A. Ögren (eds.), *Convergence and Divergence of National Financial Systems during the Gold Standards, 1871–1971*. London: Pickering and Chatto.
PERRENOUD, M., LOPEZ, R., ADANK, F., BAUMANN, J., CORTAT, A. and PETERS, S. (2002). La place financière et les banques suisses à l'époque du national-socialisme. *Les relations des grandes banques avec l'Allemagne (1931–1946)*. Publications de la CIE, vol. 13. Lausanne: Payot.
RAMOS, S. B. (2003). Competition between exchanges: a survey. FAME research paper, no. 77.
ROSENKRANZ, P., STRAUMANN, T. and WOITEK, U. (2014). A small open economy in the Great Depression: the case of Switzerland. University of Zurich, Department of Economics, Working Papers, 164.
SEITZ, J. (1930). *Histoire de la Banque à Genève*. Geneva: Comptoir d'Escompte.
SOCIÉTÉ DE BANQUE SUISSE, *Bulletin mensuel*, several issues (1917–47).
VERAGHTERT, K. (1992). Bruxelles eclipse Anvers. In G. De Clercq (ed.), *A la Bourse: histoire du marché des valeurs en Belgique de 1300 à 1990*. Brussels: Duculot.
WHITE, E. N. (2013). Competition among the exchanges before the SEC: was the NYSE a natural hegemon? *Financial History Review*, **20**(1), pp. 29–48.
WILLEMS, H. (2002). A provincial (stock) exchange in Belgium: the case of Dendermonde. *Brussels Economic Review = Cahiers Economiques de Bruxelles*, **45**(3), pp. 37–64.