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THE ACCEPTABILITY OF MONEY WITH MULTIPLE NOTES ISSUERS:
THE CASE OF ITALY (1861-1893)

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The Acceptability of Money with Multiple Notes Issuers: the Case of Italy (1861-1893)*

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Abstract

We study the Italian monetary regime from 1861 to the creation of the Bank of Italy in 1893. The regime was characterized by a multiplicity of note issuers although one of them, the BNS, rapidly became the dominant bank of the country following a process of territorial expansion. We carefully describe the evolution of the system and we analyze its functioning by studying the acceptaibility of banknotes. Since by law banknotes had to be redeemed at par, acceptability is measured by the number of days notes were in circulation. We estimate the acceptability of the BNS notes in the provinces were the bank had branches and we find that the entry of a smaller issuer limited the capacity of the dominant bank to keep its notes in circulation at local level. We take this as evidence that competition in notes issue worked as an effective discipline device and we argue the fall of the system should not be readily attributed to the failure of the competittive mechanism.

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1 Introduction

The monopoly on "currency issue" by central banks is a characteristic of modern monetary systems that very few people, nowadays, would dispute. This, however, was not the case hundred years ago. Modern central banks are indeed the result of a long and controversial evolutionary process that grew out of a system in which there were many issuers of banknotes. In the UK the monopoly was bestowed to the Bank of England in 1844 by the Peel's Act after decades of lively debate; the Banque de France, established by Napoleon in 1804, obtained the monopoly in 1848. In some cases like Belgium and Germany the creation of national banks (such as the Bank of Belgium in 1850 and the Reichsbank 1875) coincided with the unification of note issue but in many other countries, however, a multiplicity of banks continued to issue banknotes until the end of the century or even later on. In Sweden the monopoly was achieved in 1897, in Japan between 1896 and 1899, in Switzerland in 1905 and in the US only in 1913 with the creation of the Federal Reserve. In Italy the regime of multiple not issue was formally abolished in 1926, but from 1893 - when the Bank of Italy was created – the new born institution became de-facto the central bank of the country.

What determined this process? Was it the result of the failure of competition in note issue or the outcome of other forces, mainly of political nature? These are still relatively open questions that are interesting not only to historians but also to modern economists. As a matter of fact, the strong debate that, in England, opposed the currency school, which advocated some form of hard money, to the banking school, which advocated some form of laissez faire in intermediation, and that went on in continental Europe during the whole 19th century, has actually never been satisfactorily resolved from a theoretical point of view. Indeed, the same questions that were debated in those times come up again today when we ask whether central banks should operate lending facilities or whether some modern analogues of private note-issuers should be regulated.

In this paper we address this issue by studying the Italian monetary system during the period that goes from the unification of the country in 1861 to the creation of the Bank of Italy (BI) in 1893. In this period the right to issue banknotes was shared among the six banks of issue that were in operation in the single states before unification. To evaluate the working of the system we concentrate on the notion of *acceptability* of banknotes. Since by law notes had to be exchanged at par we cannot use, as a measure of acceptability, the rate at which notes where discounted locally.[1] We use instead

[1] Banknotes discounts were instead typical of the US monetary system before the Civil

the number of days of circulation of the notes before they were converted in notes of an other bank or in gold, and we use this measure as an indicator of the degree of confidence that individuals kept on "local" notes during a period of intense institutional change.

We have to consider, in fact, that upon the creation of the new Kingdom, which occurred through annexation of all the other states by the Kingdom of Sardinia (originally comprehending Savoy, Piedmont and Sardinia), its bank of issue (Banca Nazionale degli Stati Sardi or BNS) became the main bank of the country and, with the open support of the government, started a policy of expansion throughout the national territory. This policy, however, was strongly resisted by the other banks of issue and regardless of the continued attempts to extend its privileges and to act as the bank of the Government it did not succeed until 1893. At this time a major reform of the Italian financial system took place following a major crisis and a banking scandal involving the smallest of the banks of issue, the Banca Romana - which was the successor of the bank of issue in the former Papal Sates.

The crisis was seen, at the time, as the failure of the whole financial architecture of the country and was carefully exploited by the political supporters of the BNS to obtain the desired merging with the Tuscan banks into the Bank of Italy - a project submitted several times to the Parliament and up to that moment always rejected. This reform, effectively, put an end to the previous regime. Soon after the creation of the Bank of Italy, convertibility into gold was suspended and notes clearing activity among banks dramatically limited. As a result, the market mechanism constraining bank issuance was de facto suppressed in favor of state regulation.

Although the crisis gave politicians the opportunity to put an end to the regime of multiple note issuers, it is not at all obvious that the crisis was a consequence of excessive competition among banks in the issuance of banknotes. Vilfredo Pareto (1893), writing in the aftermath of the crisis, warned against such interpretation suggesting that the crisis, rather than a failure of free banking, was actually the consequence of the excessive meddling of the State in financial issues, as the issuing banks were asked to bail out private companies and other non-issuing banks which led to the accumulation of bad loans .[2]

Actually, for the thirty years following Italy's unification, competition among note issuers seems to have worked quite well. As we show in this paper, notwithstanding many legislative interventions which tended to favor

War. See, among others, Rolnik and Weber (1988) and Weber (2003).

[2]As will be better explained below, the crisis originated from the building and the farming sectors and soon spread to the banking sector, due to the bad loans accumulated by banks.

the BNS, and the suspension of convertibility of the BNS notes between 1866 and 1874, competition among banks of issue represented an important discipline device on the BNS. The notes of the minor banks maintained, for the whole period, a stable level of acceptability with the public, while the notes of the BNS show wide swings in their level of acceptability. We also find that in the areas where the local banks were deeply rooted, the BNS found some serious resistance in its territorial expansion, due to the continuing preference of the public for the notes of the local banks.

In order to arrive at these conclusions, after a careful analysis of the institutional framework that governed the Italian monetary system in that period and of the economic and political events that influenced its evolution, we study the circulation of the notes of the six banks of issue and its evolution in connection with the territorial expansion of the BNS. Since the law prescribed that notes had to be exchanged at par and discounting was not allowed, we take as a measure of acceptability the average days of circulation, i.e. how many days a note would circulate before it was converted either into specie or into notes of the other banks.

We then go to a more microeconomic analysis and estimate notes acceptability in the single Italian provinces. More specifically we look at the impact of minor banks' activity on the conversion of BNS notes (into species or other notes); as far as we know ours is the first attempt to estimate econometrically the acceptability of notes circulating at par. We use a panel of 80 towns from 1861 to 1891 - with the exception of the period 1866-1874 in which convertibility was suspended - and we show that opening of a branch by rival bank in the towns where the BNS was operating caused an increase in the volume of BNS notes returned for redemption. Considering that the more a bank issued the more difficult was to keep its notes in circulation we also show that this difficulty was stronger when a rival bank was operating in the town. We take this as evidence of the existence of a competitive mechanism capable of imposing some discipline on the issuing policy of the BNS. Results do not change also when we take into account the "net redemtpion", i.e. the difference between the volume of BNS notes returned to the bank for redemption and the BNS notes demanded by the public in exchange for other notes or specie.

The paper is divided into 5 sections, including the introduction. Section 2 outlines the institutional framework where the bank had been operating from the unification of Italy In 1861 to the creation of the Bank of Italy in 1893; Section 3 analyzes the determinants of notes circulation and acceptability; Section 4 presents the econometric estimates; Section 5 concludes.

2 A Brief History of the Italian Monetary System 1861-1893

2.1 The Post-Unification Years: 1861-1874

Before 1861 Italy was fragmented into several political areas. The most important States were the Kingdom of Sardinia in the North–East and Sardinia, the Granduchy of Tuscany, The Papal States, which included Rome and other provinces in the Centre-North and the Kingdom of the two Sicilies, which occupied Southern Italy and Sicily; the western part of Italy was under the Austrian dominion. In 1860, following the war with Austria, the Kingdom of Sardinia extended its territory to Lombardy and the Granduchy of Toscany was annexed. In the same year the Kingdom of the two Sicilies was conquered. In 1861 the first Parliament of the new Italian Kingdom was elected.

After the unification of Italy[3], the banks that issued notes in pre-unification states continued to operate in the new-born nation. These were the "Banca Nazionale negli Stati Sardi" (BNS) that in 1967 took the name of "Banca Nazionale nel Regno d'Italia", the "Banca Nazionale Toscana" (BNT), the "Banca Toscana di Credito" (BTC), the "Banco di Napoli" (BN) and the "Banco di Sicilia" (BS); the "Banca Romana" (BR) joined in 1870, after Rome became part of the Kingdom.[4] The six banks operated in Italy for around 30 years although the rules governing issuance activities changed over time; indeed, notes were redeemable at par into specie but convertibility was interrupted several times.

Although the system that emerged from the country's unification was characterized by a plurality of note-issuers, in reality it was highly asymmetric. From the start the BNS benefited from a privileged relationship with the government and in the following thirty years the Italian government continuously pursued the project of a unique issuing bank, although the government attempts to create a unique bank of issue were consistently rejected by Parliament.

The special relationship between the BNS and the Italian government can be well understood when one considers the role played by the BNS in periods of turmoil. Already before the unification, the Government had suspended the BNS notes convertibility twice – in 1848-51 and in 1859-60 – and in

[3] For an in depth analysis of the economic performance of Italy after unification and before World War I see Fenoaltea (2011).

[4] There were also other issuing banks in the pre-unification states; however only the above mentioned banks survived the unification.

both times this measure had been followed by the bank's granting of loans to the Government at a lower rate than the market. After the unification, a major crisis hit the new kingdom in 1866 when Italian foreign debt, growing government expenses and rumours about a war against Austria caused a confidence crisis on Italian government bonds. Despite the outflow of gold from the country, the BNS resisted increasing the interest rate.[5] In order to counter the attacks on the gold reserves due to the massive requests of payment, on May 1 the Government suspended the convertibility of BNS notes upon the granting of a 250 millions lira loan by the bank.

The 1866 Act introduced two major asymmetries among the BNS and the other issuing banks: whilst the BNS circulation became fiat money, the other banks notes were still redeemable, although redemption was into the BNS notes. In other words, the BNS notes had become monetary base and contributed to banks' reserves. As a result there was a large increase in overall notes circulation. However, while BNS could increase its circulation at no cost, the other banks incurred in major expenses for notes' redemption.[6] Even though minor banks could profit from the raise in the monetary base (the BNS notes), convertibility prevented them from overissuing.

As an attempt to stop the increase in the BNS circulation, which had raised from 152 millions lira to 475 millions lira within 2 years, a bill passed in September 1868 introducing a ceiling to notes creation by the BNS; this ceiling, however, was pushed up on several occasions upon the granting of more loans to the Government.[7]

It is also important to notice that the suspension of convertibility had two major effects on gold circulation. A discount on gold appeared and gold was sent abroad or saved.[8] As bank notes were authorized only for high face value and coins were used for small transactions, the disappearance of gold caused a shortage in the medium of exchange and gave rise to a clandestine circulation issued by banks and other independent agents, such as shops. Although the Government considered clandestine money as illegal, it continued to circulate until 1873.

[5] See Fratianni and Spinelli (1991).

[6] Some of them had to resort to the discounting of bonds on foreign markets. That was the case for example of the Tuscan Banks: see Supino (1929) for more details.

[7] Changing the plafond was not the only measure taken to favour the bank: in 1872 for example the BNS was authorized to double her capital.

[8] Gold export was favoured by the fact that Italy was part of the Latin Monetary Union, set up in 1865 by Italy, France, Switzerland and Belgium.

2.2 The "Consortium" Years: 1874-1881

The asymmetry among the BNS and the other banks of issue resulting from the suspension of convertibility was partially corrected by Parliament in 1874. The new Act established that the BNS notes issued as loans to the Government would be replaced by State notes ("biglietti di Stato") issued by a newly formed "Consortium" formed by the six banks of issue. This provision set up a double circulation, this time equal for all the banks: a private and redeemable circulation issued by the banks on their own, and a State fiat circulation issued by the Consortium. The six banks private circulation was redeemable into Consortium notes or into gold.[9]

An important provision was that all the banks' private circulation within the areas where the banks had branches became legal tender; by the same provision banks were authorized to open branches throughout the whole Kingdom. Apart from the BNS, the Bank of Naples was the one who profited more of this bill, as it opened 6 branches within 10 years. In the same year, Parliament passed another bill regulating notes' clearing activity among banks. Notes clearing could take place only once in a week. This Act paved the way to other forms of Government intervention in the bank clearing activity which, as we will see in the following paragraph, will give rise to major moral hazard problems.

2.3 The Return to Convertibility

The idea that the system should return to convertibility never abandoned the Italian political and intellectual elite, and this is proven by the many bills submitted to (and rejected by) Parliament since 1867. Convertibility was finally restored on April 7th 1881. According to the new Act, the inflow of metal needed for the banks reserves (and for the repayment of the loans to the BNS) would be supplied by foreign markets and the circulation of notes would be reduced.[10] On June 30th the Consortium ceased its activity and on 12th April 1883 notes became fully convertible into gold. Banks could now exceed the limits to circulation which had been introduced in

[9]Private issuance was authorized only for high denomination notes while consortium notes had not such a limit . However, as long as the consortium notes had not been produced, the BNS notes were used instead, which had been declared as "temporary Consortium notes" ("provvisoriamente consorziali"). Furthermore, a plafond for the banks private circulation were introduced even though some flexibility was allowed; however, all profits deriving from the exceeding circulation had to be passed on to the Government.

[10]Under the same Act, the obligation to request Government authorization to modify discount rate was removed; however, it was reintroduced four years later by the 28th June 1885 Act.

1874 provided that exceeding circulation would be totally covered by metal reserves. This provision was meant to overcome the rigidity in the money supply which penalized in particular those issuing banks facing a growing demand for notes due to their territorial expansion, i.e. the BNS and the BN.

Enforcement of convertibility did not last long, however. Few years later several measures were taken to limit the demand for redemption both from other banks and simple citizens. Clearing activity was explicitly regulated by the 1891 Act which limited the amount of notes that the banks could bring for redemption. More striking, in 1892 in a litigation involving a branch of the BN, who refused to redeem the bank's notes, the court endorsed the bank's decision. As we will see below, two years later on February 21, 1894 Parliament decided that notes would be changed – for metal or other bank's notes – at market prices. This 1894 Act put officially an end to the era of par redemption.

2.4 The Crisis of 1893 and the Creation of the Bank of Italy

The weakening of the rules governing convertibility were probably at the roots of the crisis that hit the Italian financial system in 1893. Equally important was the unofficial pressure put on banks to restrain from bringing the other banks' notes for redemption.[11] The Government concerns about notes clearing can be better understood if one considers the role of the issuing banks during the financial crisis that starts at the end of the 1880s. The crisis coincides with a crisis in international capital markets (the so called Baring crisis in London and the bankruptcy of the Comptoir d'Escompte in Paris) but derives mainly from internal factors. The two main commercial banks of the country (Banca Generale and Credito Mobiliare) found themselves in a situation of illiquidity due to the huge exposure of the large industrial and mechanical industries and due to the support given to minor banks (Banca Tiberina, Società dell'Esquilino and Banca di Sconto e Sete) strongly involved in financing real estate speculation. The issuing banks were asked to bail out both private companies and non-issuing banks; as a result, the quality of their portfolio worsened and notes circulation increased above the limits imposed by the law.[12] The reason why issuing banks were involved - although to a

[11] In particular the Act established a 10 days frequency for notes clearing activity and stated that convertibility had to be confined to the amount of notes that the issuing bank could redeem into the notes issued by the bank who asked for redemption.

[12] One example is the attempt to bail out the Banca Tiberina in 1889; on that occasion, the BNS obtained the authorization to increase its circulation by 50 millions lira without

different degree - in this game was well explained by Pareto (1893): "How such situations could ever occur? It is clear that first condition for which this was possible is that banks were released by the obligation to redeem their notes for good money on demand".

In 1893 the crisis culminates with the liquidation of the two main commercial banks, with the bankruptcy of many minor banks and the liquidation of the smallest and more fragile of the banks of issue, the BR.

The measures taken to shield the issuing banks from redemption played a role also in the failure of the Roman Bank. In 1887 the BR had already obtained political aid, as the Government convinced the BNS to accumulate BR notes for 4, 6 and 15 millions lira. After the 1991 Act limiting the "riscontrata" (notes clearing activity among banks) the BR increased its circulation by 65% in a year. However, more than the release in the constraints of redemption, political protections influenced the conduct of the Roman bank allowing the perpetration of fraudulent behaviour. In 1889 a Government inspection was carried out on the issuing banks, which uncovered illegal activities by the BR, but the results were not disclosed. Moreover, despite rumours about the duplication of the BR notes series by the bank had reached the public, the BR Governor was nominated senator in 1892. The strong political battle in Parliament following these events and the accusation of collusion between the Government and the BR led to the appointment of an extraordinary inspection; at this time strong irregularities and violations by the Roman Bank fully emerged.[13] Meanwhile, the Governor of the BR was arrested as the information on the bank clandestine circulation reached the Prime Minister Giolitti. In order to avoid a crisis of confidence Giolitti also convinced the Parliament to endorse notes circulation. Several politicians and bank executives were involved in the scandal, thus worsening the political crisis under way. The Prime Minister was suspected of having accepted money from the BR for his political campaign and finally resigned.

In the1893 the Bank of Italy was created out of the merging of the BNS with the two Tuscan banks. The Bank of Italy Act contained other major provisions: strict quantitative limits were imposed to the banks circulation; it was established that the discount rate had to be the same for all the banks (which were allowed to lower it by 1% in certain cases) and brought under Government authorization; a minimum capital requirements of 1/3 on banks circulation was set, while the reserve ratio was established at 40%; notes denomination and physical characteristics were made uniform for all the banks

the backing of reserves.

[13] The inspection revealed irregularities also for the other issuing banks, i.e. exceeding circulation, long term loans, bad loans, although the other banks situation was not as critical as the Roman Bank, which was found guilty of breaches having criminal relevance.

and established by the Government; the nature of the activities the issuing banks could carry out was regulated. Last but not least, it was established that the Governor of the new born Bank of Italy had to be appointed by the Government.

An year later an Agreement underwritten by the new born BI and the Government, which became formal legislation on the 10th December 1894, established that the Bank would be granted the payment and account services for the Treasury; in order to compensate for this privilege, article 14 of the Agreement provided that as long as these services lasted (and as long as notes had legal tender), the BI could not bring the other banks' notes for redemption but for an amount equal to that of the BI notes that minor banks had in their coffers. In the meanwhile, the 21st February 1894 Act had relieved the banks of the obligation to redeem notes in gold. As a result of the 1893-1894 legislation the issuing system could not rest on the preferences of the public as a discipline device. Market rules were definitively replaced by the Government legislation in limiting the amount on circulation. Statistics about notes redemption, which had been so detailed before 1893, gradually disappeared from the BI official reports. Monopoly finally was granted to the Bank of Italy in 1926.

3 Notes' Circulation and Acceptability

As in many other countries, in Italy redemption had to take place at par and relative discounts between notes issued by different banks could not be applied by law. With respect to gold, however, after the suspension of convertibility, all notes denominated in lira traded at a discount and this reflected the effective devaluation of the lira in international financial markets.[14] The par redemption requirement is usually motivated by efficiency and safety considerations. The efficiency argument is that currencies trading at varying exchange rates diminish the unit-of-account function of money. Implicit in this argument is the belief that inside and outside money should effectively circulate as a uniform currency, i.e., they are essentially perfect substitutes. Even more important is the safety argument: par redemption restricts the ability of inside money issuers to overissue, since any concern

[14] Even in the United States during the Free Banking Era (1838–60) such requirement existed in many free-banking states. More recently, the European Central Bank (1998) has established a policy on electronic money for the Eurosystem that stipulates several minimum requirements of electronic money issuers, including par redemption.

about the ability of banks to repay would lead the public to redeem notes.[15]

Since the principal aim of our paper is to assess whether the plurality in notes issue worked efficiently we need to assess whether the notes of the six banks of issue retained a reasonable level of acceptability over time and across the different areas of the country. In a system where notes do not trade at par, acceptability can be easily measured by the discount rate at which notes trade. In a system where notes trade at par, instead, a natural measure of acceptability is given by the average number of days notes were kept in circulation. This measure of acceptability that we use throughout the paper is precisely defined as the average daily circulation in the year multiplied by the number of days in a year, divided by the average daily value of notes returned in a year. The idea is that the more the notes are accepted by the public the more they stay in use, since bearers do not have a big incentive to return notes to the bank for redemption. The importance of this measure of acceptability is witnessed also by the fact that it was carefully recorded in balance sheet documents and reports of the banks of issue.

3.1 Circulation

The issuing policy of the six banks was deeply influenced by the economic conditions and he institutional changes that occurred during the period under study. The changing legislative framework, Government intervention and banks' territorial expansion, together with economic growth, were the major determinants of overall notes' circulation.[16]

During the first years of the Italian kingdom, banks' circulation was mostly local and confined to the pre-unification states boundaries. Moreover, in 1861 notes issuance was not uniform in type for all the banks. The BNS and the BNT issued legal tender notes[17], while the BN and the BS issued assets exchangeable upon endorsement; only in 1866 could the Southern banks started to issue notes payable to the bearer.[18] During this period,

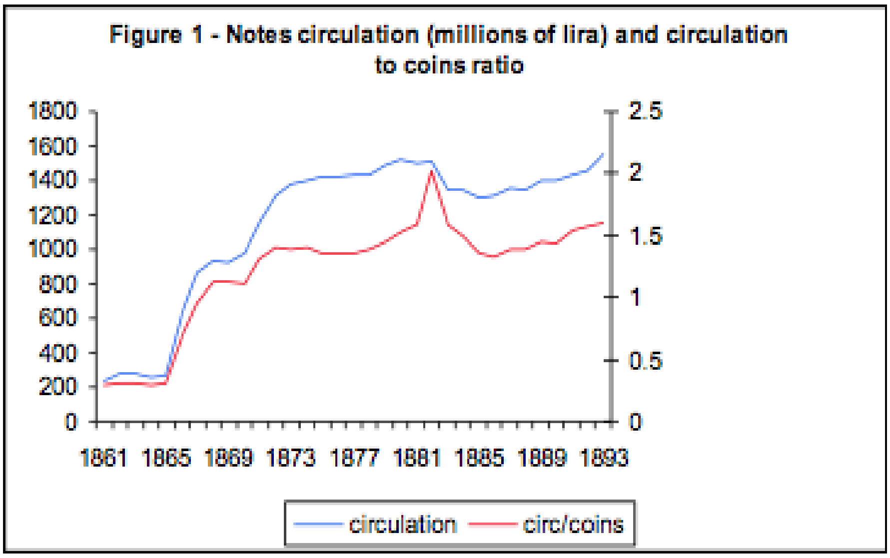
[15] For the theory of private money issuance in a par redemption regime see in Selgin (1994) and Selgin and White (1994).

[16] For an analysis of competitive environment during the period under study see Gianfreda and Janson (2001).

[17] The BTC was created in 1861

[18] However, for all the banks notes circulation was convertible and the reserve (capital)/circulation ratio was usually provided for by the banks by-laws and usually set at 1/3. Also, Italian pre-unification states had different monetary systems. Northern Italy – as well as France – was in a gold standard regime while the silver standard prevailed in the South. Bimetallism was adopted for the whole territory in 1862 at a official 1:15.5 gold/silver exchange rate, with a caveat: in order to prevent the Gresham law to operate, the silver coins had a higher nominal value than the silver effective content and a limited

moreover, the use of notes was limited and payments were mostly made in specie.



For the first 5 years total circulation was quite stable increasing by less than 6.5 millions per year on average from 1861 to 1865 (Figure 1).[19] In those years, convertibility acted as a discipline device for the banks. The situation, however, changed dramatically in 1866. Indeed, in that year BNS notes accounted for more than 80% of total circulation; as soon as convertibility was suspended, total circulation soared to an average yearly increase of more than 97 millions in 3 years, reflecting the increase in the issue of BNS notes (Figure 2).[20]

After the introduction of a ceiling on the BNS circulation, average yearly increase amounted to some 91 millions per year from 1869 to 1973. The constraint of redemption, however, did continue to regulate minor banks issuance, as they were forced to convert their notes back into BNS notes upon request.

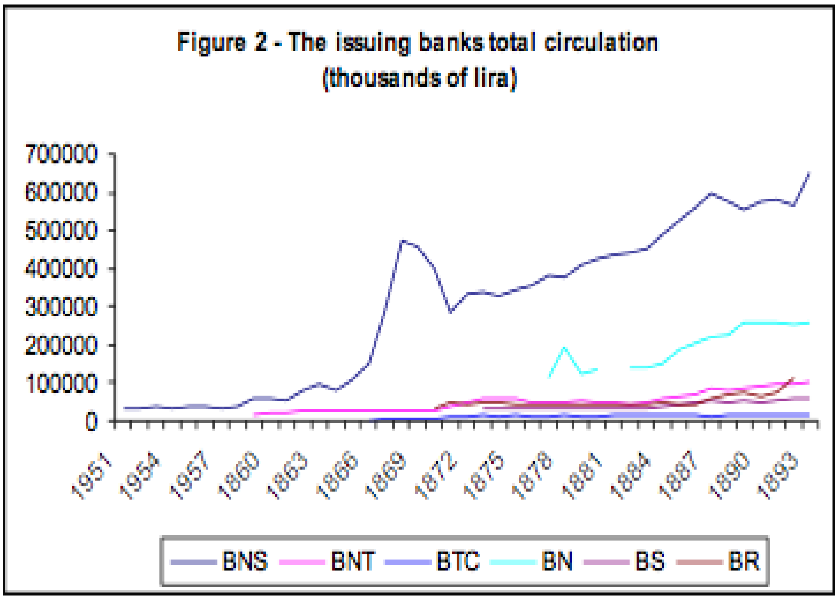
It must be added that during the suspension of convertibility also the use notes for payments with respect to the use of coins increased substantially; as we can see by examining again Figure 1, the suspension of convertibility

redeeming power than gold coins.

[19] Notes circulation increased during whole period under study from 233 millions lira in 1861 to 1.5 billion lira in 1893.

[20] A sharp increase in the BNS circulation occurred just before the Unification, during the 1858-61 years; it is worth recalling that the BNS notes redemption was suspended in 1859-60. The BNS circulation will be discussed below.

fastened the process of accepting paper money in payment.[21] While soon after the unification notes circulation accounted for less than 1/3 of specie, in 1893 proportions were almost reversed, with specie accounting for slightly more than an half of the notes in circulation.



Money supply (M1) follows strictly notes circulation, including the sharp increase after 1866. Prices kept quite stable throughout the whole period, except for a significant inflationary episode in the 1870-74, during the forced circulation years. As we can see from Figure 3, prices decreased slightly from 1877 and kept stable from 1883 to 1888, when they started to slightly decrease. This regime of price stability accompanied the steady growth of GDP that Italy experienced during the whole period.

[21] However, this is not necessarily true for the acceptability of the BNS notes as compared to the other banks', as we shall see below.

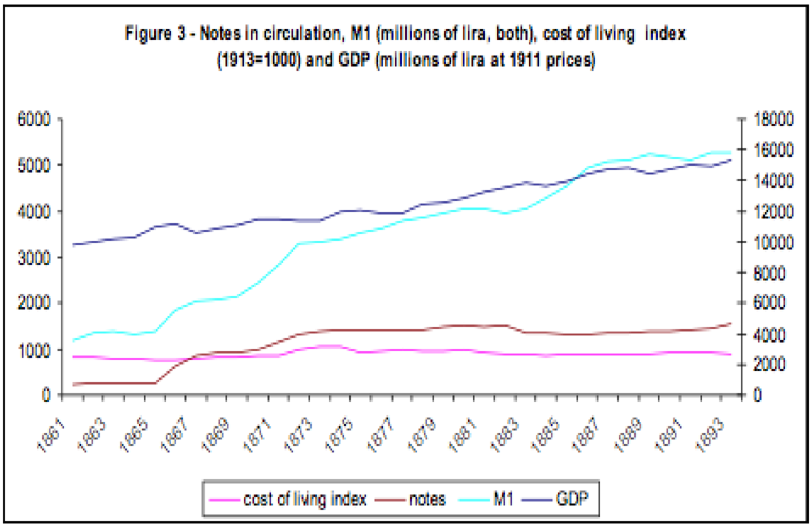
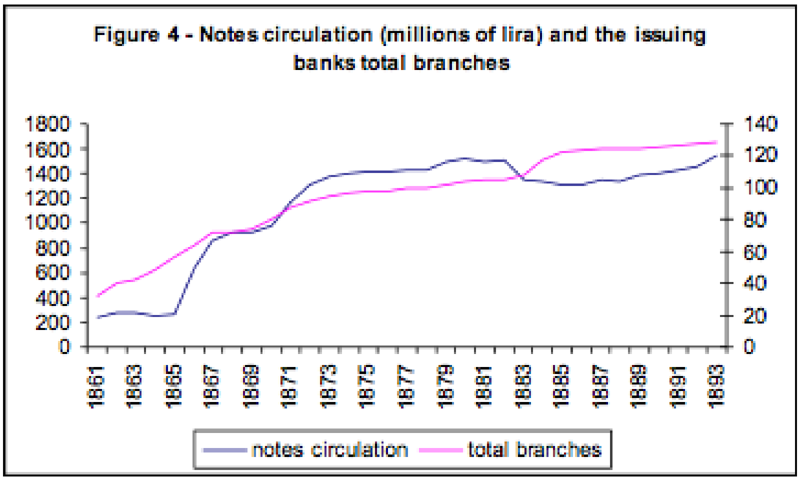


Figure 3 - Notes in circulation, M1 (millions of lira, both), cost of living index (1913=1000) and GDP (millions of lira at 1911 prices)

The first 10 years after the country's unification were also a period of fast territorial expansion for the BNS. The BNS started to expand rapidly and in few years it reached the whole national territory. Just to give an idea, if in 1860 the BNS had only 7 branches located in the former Kingdom of Sardinia, it opened 13 branches in 1861. Among these branches we find those opened in the Southern towns Naples, Messina and Palermo. Between 1861 and 1864 the BNS branches more than doubled.

Minor banks instead engaged in territorial growth only a decade after the unification and expanded at a much slower pace. Comparison with the BNS here is striking, as only in 1868 did the BN ventured outside its traditional territory (it opened a branch in Florence), while the BNT first branch outside Tuscany (Bologna) was opened in 1883 and the BS reached Rome in 1874. At the end of the period under consideration, of the minor banks only the BN did significantly settle outside its regional boundaries. As shown in Figure 4, the evolution of banks' territorial growth influenced notes circulation. Interestingly, circulation increased with the BNS territorial expansion in the first years and followed the overall evolution of banks growth for rest of the period.

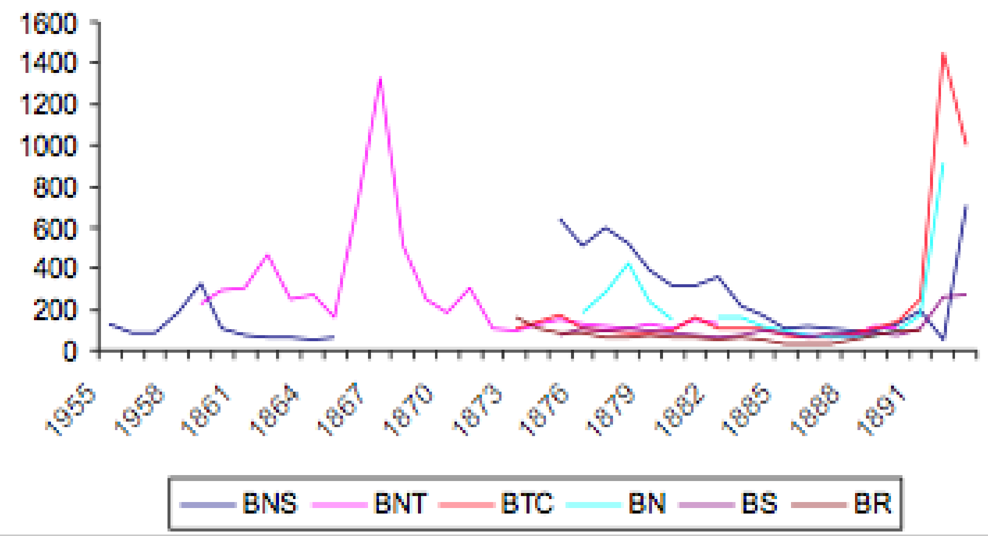


During the Consortium years total circulation turned to a more moderate pattern, increasing on average, by some 11 millions lira per year; recall that in this period only the banks' private circulation was convertible while the consortium notes were irredeemable. When convertibility was de facto restored, total circulation started to decrease. Between 1882 and 1890 the decrease in total circulation averaged 12 million lira per year. Also in this case the bulk of total circulation was made of BNS notes. Minor banks increased circulation moderately; the BN exhibit a more aggressive path, which can be explained by its policy of territorial expansion. It can also be noticed that apart the 1877-1879 years the path of BN monetary expansion was similar to that of the BNS. Total circulation started rising again with a 39 millions lira average increase between the end of 1890 and 1893, after the 1891 act regulating compensation activity among the bank.

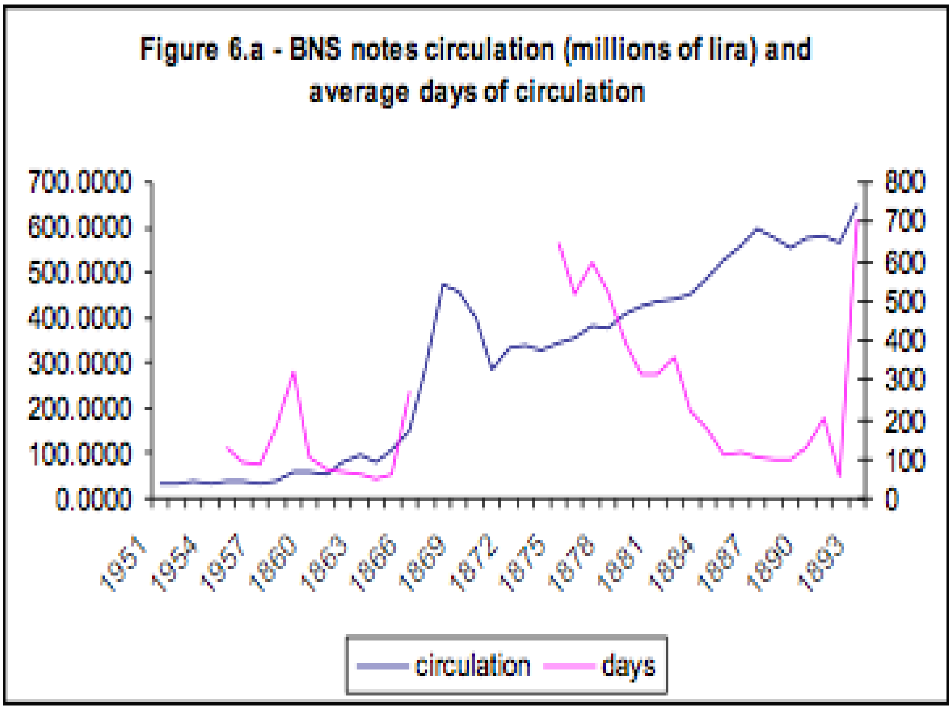
3.2 Acceptability

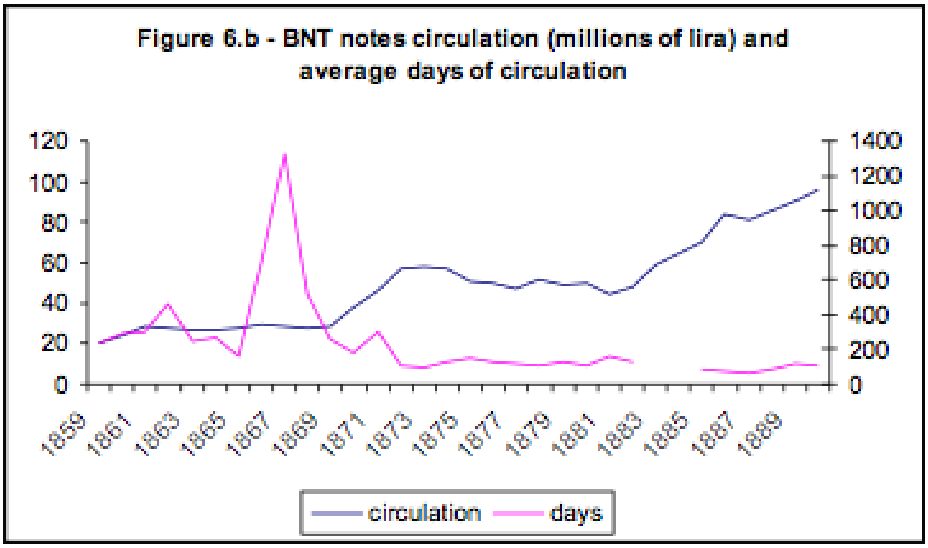
As we can see from Figure 5, although the public was forced by the 1866 Act to use BNS notes and was deprived of the possibility to return them for specie or for other banks notes, BNS notes' acceptability fell as soon as redemption for private notes was re-established during the consortium period and it gradually converged down to the other banks' level. Once consumers were left free of turning the notes back to the bank for redemption rather than keeping them in circulation they shortened the period of the BNS notes detention. This adjustment was gradual over time; recall that in the first period of the consortium the BNS notes were declared as "temporarily consortium notes", so they continued to circulate (here again by the force of the law) as State notes for some years, offering smaller (and more appealing) face values.

Figure 5 - The notes average days of circulation



In addition, comparing circulation and the average period of circulation for the BNS and the BNT (Figures 6.a and 6.b) it is evident that a substitution effect took places between the two banks in the forced circulation years: as soon as the convertibility of BNS notes into gold was suspended, people turned to the notes of the smaller BNT and the average days of circulation of its notes increased dramatically without any important change in the bank circulation. When the BNS increase in circulation came to a more moderate pattern the average period of circulation for the BNT notes dropped. With the end of the forced circulation period the BNT notes acceptance converged to its average.





The fall in the BNS notes acceptability after 1874 emerging from the previous analysis is also interesting if one considers the rapid territorial expansion of the bank. By comparing Figures 7a and 7b it is quite clear that as the BNS was increasing its circulation and expanding over the territory, it had to counter problem of refusals in the clients' portfolio. On the contrary, the small BNT followed a completely different growth policy, as its expansion was quite limited both in the quantity of branch openings and in the geographical area, being concentrated mostly in Tuscany and Northern Italy. Notice also that as the BNT increased the number of branches, the acceptability of its notes did not fall; from the period of the Consortium on it remained quite stable over time.

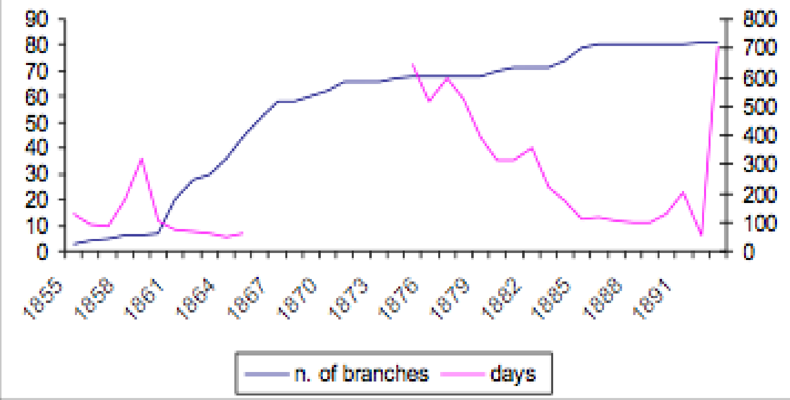


Figure 7.a - BNS expansion and notes average days of circulation

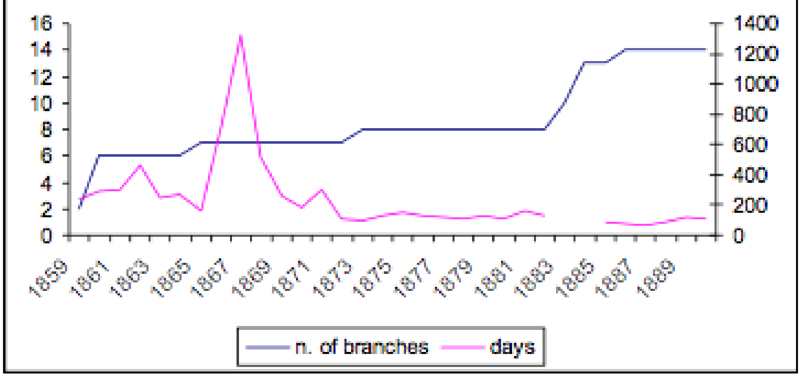
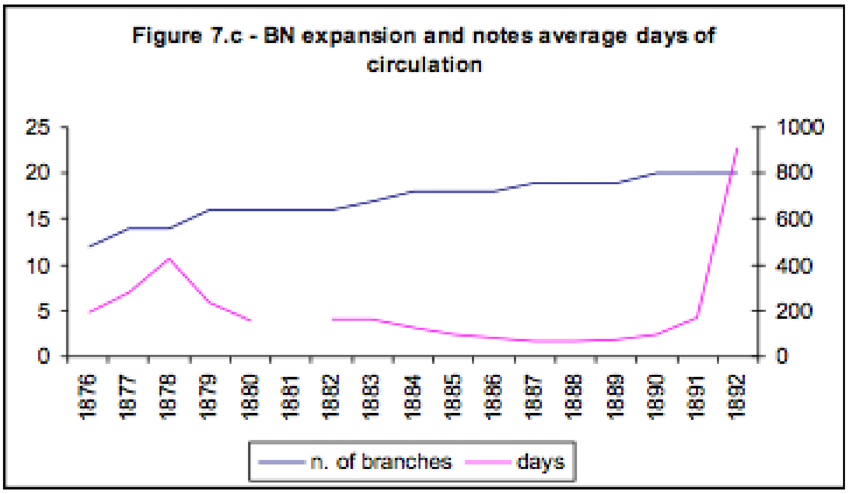
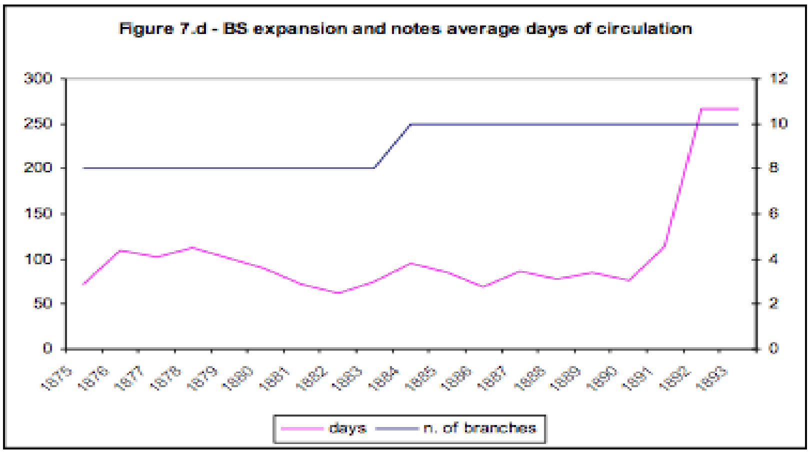


Figure 7.b - BNT expansion and notes average days of circulation

Also when one looks at the Southern banks (figures 7.c and 7.d) data suggest that par redemption worked as a discipline device. In particular this seems to be true for the BN which represented in the years after 1874 the most serious competitor of the BNS. A first attempt to increase circulation during the years 1877-79 was frustrated by redemption. After 1883 the BN engaged in a policy of territorial expansion and this pushed the BN to expand its circulation, but also in this period, again, the BN couldn't foster notes acceptability, which slightly decreased until 1888. On the contrary, the BS exhibits a more stable relationship between territorial expansion, increase in circulation and acceptability. It must be added however that the BS policy of internal growth was not aggressive and its territorial expansion took place mostly in Sicily, apart from the branches in Milan and in Rome; the local character of the BS growth policy explains why the BS notes did not have problems of acceptability while the bank was opening new branches.





In general banks' circulation reflected the banks' policy of territorial expansion, but did not necessarily match the public preferences. Those banks who were active mostly inside the traditional territory did not exhibit the same problems of acceptability as compared to the banks which followed more aggressive policies.

Finally, after 1891 the average days of circulation increased for all the 6 banks; however this increase may not always reflect an improved acceptability of notes. Indeed it is in some cases the result of the efforts made by the Government (endorsed by courts) to discourage the process of returning the notes to the issuing banks for redemption. This is particularly true in the case of the Roman bank, for which the increase in the average period of bank circulation after 1886 is misleading, as the bank notes usually remained in the other banks coffers (above all the BNS) instead of being returned for redemption.

Summing up, our descriptive evidence seems to indicate that the system of multiple note issuers for the period taken into account worked quite well. Prices were stable and the overall increase in monetary circulation was expansion followed closely the process of economic growth. The BNS, with the help of the government, engaged into a massive territorial expansion that made it the dominant bank of the country. Interestingly, however the presence of other banks of issue and the possibility to convert BNS notes into those of these banks appear to have constituted a significant limit to the BNS ability to overissue. This is indicated by the strong increase in the days of circulation of the BNT during the suspension of convertibility (1866-74), by the gradual and persistent fall in BNS notes' acceptability after the return to convertibility and by the apparent increase in the redemption of notes banks experienced when they opened branches outside the their traditional area of operation.

4 Panel estimates

4.1 The conversion of the BNS notes

The obvious limit of the analysis performed in the previous section is its descriptive nature. To provide a more convincing evidence on the existence of a competitive mechanism capable of limiting overissue one needs some econometric estimates which, however, can hardly be obtained simply by relying on annual time series. Fortunately, however, the annual reports of the BNS provide detailed data on the bank's operations at the local level. From the BNS Balance Sheets for the period 1861-1891[22] (except for the years 1866 to 1874, during which convertibility was suspended and BNS notes were

[22] Adunanza Generale degli Azionisti, editions from "anno dodicesimo" to "anno sedicesimo" and from "anno vigesimo sesto" to "anno quarantunesimo".

fiat money) it is possible to obtain annual data on the BNS notes returned to the bank for redemption or demanded in exchange for other means of payment[23] in each town the BNS had a branch (BNS towns)[24], i.e. 80 towns in 1890.

In our empirical exercise we exploit the panel dimension of the data and we ask whether the opening of a branch by a competitor in the provinces where the BNS was operating affected the acceptability of the BNS notes, i.e. increased their rate of conversion. The 80 "BNS towns" can be grouped into three sets: i) BNS towns where no minor banks ever opened a branch;[25] ii) BNS towns where minor banks were already operating when the BNS opened a branch or started to operate at the same time as the BNS;[26] iii) BNS towns where minor banks opened a branch when the BNS was already operating. The fact that in some towns the BNS never had a local competitor provides a suitable control group that can beused to assess the validity of our claim.

Descriptive statistics for the amount of BNS notes converted each year in each province are reported in table 1. The last group refers to those provinces where the Southern banks were operating before the BNS expansion but did not issue notes payable to the bearer.

[23]These data are found in the"introito di biglietti" and "esito di biglietti" columns in the BNS balance sheets.

[24]The towns were the following: Firenze, Genova, Milano, Napoli, Palermo, Roma, Torino, Venezia, Alessandria, Ancona, Aquila, Arezzo, Ascoli, Asti, Avellino, Bari, Barletta, Belluno, Benevento, Bergamo, Bologna, Brescia, Cagliari, Caltanissetta, Campobasso, Carrara, Caserta, Castellammare, Catania, Catanzaro, Chieti, Como, Cosenza, Cremona, Cuneo, Ferrara, Foggia, Forlì, Agrigento, Lecce, Livorno, Lodi, Lucca, Macerata, Mantova, Messina, Modena, Monteleone, Novara, Padova, Parma, Pavia, Perugia, Pesaro, Piacenza, Pisa, Porto Maurizio, Potenza, Ravenna, Reggio Calabria, Reggio Emilia, Rovigo, Salerno, Sassari, Savona, Siena, Sircacusa, Sondrio, Sora, Spezia, Taranto, Teramo, Terni, Trapani, Treviso, Udine, Vercelli, Verona, Vicenza, Vigevano.

[25]Alessandria, Aquila, Ascoli Piceno, Asti, Barletta, Belluno, Benevento, Bergamo, Brescia, Castellammare, Como, Cremona, Cuneo, Ferrara, Forlì, Lodi, Macerata, Mantova, Modena, Monteleone, Novara, Parma, Pavia, Perugia, Pesaro, Piacenza, Porto Maurizio, Ravenna, Reggio Emilia, Rovigo, Sassari, Savona, Sondrio, Sora, Spezia, Taranto, Teramo, Terni, Treviso, Udine, Vercelli, Verona, Vicenza, Vigevano.

[26]The BNS towns where the bank started to operate when another issuing bank was already present were: Arezzo, Bari, Firenze, Livorno, Lucca, Messina, Napoli, Palermo, Pisa. The BNS towns where the bank opened a branch in the same year or time interval (the 66-74 interruption) than another issuing bank were: Avellino, Caltanissetta, Agrigento, Roma, Salerno, Trapani.

TABLE 1: Descriptive statistics

Total value of converted BNS notes	Obs	Mean	Std. Dev	Min	Max
All provinces	1312	13.772	42.809	0	478.379
Rival bank was present:					
BNT	109	36.334	62.353	0	312.954
BN	271	48.115	81.860	0.125	478.379
BS	143	35.695	80.200	0.147	478.379
Rival bank opened a branch:					
BNT	43	44.404	82.170	0.871	312.954
BN	168	44.944	93.412	0.125	478.379
BS	39	67.074	137.525	0.457	478.379
Rival bank started to issue:					
BN	207	49.198	88.968	0.125	478.379
BS	59	55.938	113.295	0.457	478.379

One problem we face when we address the problem of acceptability at the micro level is that there exist no data on circulation at the provincial level and therefore we cannot compute the average days of circulation. Hence, as a measure of notes acceptability we simply use the yearly value of BNS notes conversion: the higher the aumount of BNS notes returned to the bank for conversion, the lower the preference for those notes. However, notes conversion does depend also on the size of circulation and not accounting for this dimension would bias our results; an increase (decrease) of the BNS redemption in the provinces where rival banks had a branch or opened a new one could simply be the result of an increase (decrease) in the BNS activity. In order to control for the BNS circulation at local level we include in the regression the total outflow of money (notes, specie and government bonds) from the BNS in every province. In order to measure the degree of competition exerted by the rival banks of issue we constructed a dummy variable which takes the value of 1 if there is a rival in a BNS town (*competitor*). On this basis we estimate two sets of regressions.

The first set is a difference in difference regression which highlights the effect of a branch opening by a rival bank in a BNS town. The model specification is the following:

$$Bnsconversion_{jt} = \beta_0 competitor_{jt} + \beta_1 outflow_{jt} + \eta_j + \mu_t + u_{jt}$$

where the dependent variable, $Bnsconversion_{jt}$ is the log of the value of the BNS notes returned to the bank for conversion in each BNS town j at time t, $outflow_{jt}$ is log of the value of the BNS money payments considered in the sample for town j at time t, η_j is a city dummy, μ_t is a time dummy and u_{jt} is the residual. We used fixed effects to control for unobserved heterogeneity. Controlling for fixed effects allows the dummy competitor to capture the time-variant effect in each province, i.e. branch opening; the effect of the presence of a rival for group i) and ii) is accounted for by city dummies.

From column 1 (table 1) we see that the coefficient of this variable is positive and significant. The opening of a rival bank in BNS towns increased the redemption of BNS notes by more than 80%, i.e. diverted public preference away from the BNS notes, even after controlling for the total money spent by the BNS, unobserved heterogeneity as captured by fixed effects and aggregate events, captured by the time dummies. In regression 2, we replaced the variable competitor with three variables $Bntbranch$, $Bnbranch$, $Bsbranch$, which are. dummies taking the value of 1 if the BNT, the BN and the BS respectively had a branch in the BNS towns. As we can see from column 2 the coefficient is positive and significant for the two Southern banks; in particular, the presence of the BN in a BNS town increased the conversion of the BNS notes by 137%.

We did not find, however, a significant effect for the BNT. One possible explanation for the different behaviour of the public in Tuscany and in the Southern provinces is the different degree of market integration between the various areas of the country.[27]. Tuscany was much closer to the Northern markets than the Southern regions and much more homogenous in terms of economic development. The unification between Tuscany and the new-born kingdom was a much less traumatic process with no bloodshed; Florence became the capital of Italy for few years before Rome was conquered in 1870. The annexation of the South, instead, was the fruit of a war of conquest and the unification created in the South large discontent, especially among the lower classes; in some cases, even open revolt.[28] It is quite understandable, therefore that in the South the resistance to the expansion of a "foreign" institution like the BNS was stronger than in Tuscany and than the Southern people continued to have a strong confidence in the major banks of their pre-unification state.

If the above specified model identifies the effect for the BNS of switching from a “sole bank” situation into a “competitive” situation, our data set allows us to go further into our investigation and exploit the fact that in

[27] As evidence of very slow market integration in Italy after 1862, Toniolo, Conte and Vecchi (2003) .nd that the prices of the Rendita Italiana 5% (Italian Consols) across regional stock exchanges did not fully converge until 1887, twentyfive years after the creation of a monetary union in the peninsula.

[28] 28For an analysis of the problems facing Italy after the 1861 unification see Toniolo (1988).

some town only BNS ever issued and in some other town the BNS always had a competitor during the year under study (the variable competitor being always 0 in the former case and always 1 in the latter). Issuing in an area where rival banks were deeply rooted could imply greater difficulty in gaining acceptability with respect to the traditional areas of influence.

In order to identify the effect of the presence of a rival bank in the BNS towns we use the methodology proposed by Rajan and Zingales (1998). We exploit the positive effect of the variable $outflow$ on the BNS acceptability, which implies that the more a bank issues the more difficult is keep its notes in circulation; if the presence of a rival bank reduces the acceptability of the BNS notes we should expect the increase in the redemption of the BNS resulting from higher outflow to be stronger if a rival bank is operating in the town. In other words, by interacting the variable competitor on outflow we should then expect a positive coefficient for the interaction after controlling for both variables separately. On this basis, our second set of regression has the following specification:

$$\begin{aligned} Bnsconversion_{jt} &= \beta_0 competitor_{jt} + \beta_1 outflow_{jt} \\ &\quad + \beta_2 competitor_{jt} * outflow_{jt} + \eta_j + \mu_t + u_{jt} \end{aligned}$$

where $competitor_{jt} * outflow_{jt}$ is the interaction term. Column 3 shows that interaction term is positive and significant, while the sign on $competitor_{jt}$ is negative. This however is not a problem, because what really matters, in this kind of analysis, is the overall marginal effect. Indeed, we find that the overall marginal effect is positive; to have an idea of its magnitude, if calculated on the average values of $outflow_{jt}$ the marginal effect is around 0.80. Again, we checked which bank influenced more the BNS acceptability. From column 4 we see that this time the interaction term for the BNT is positive and significant; however, the marginal effect is positive only for higher percentiles (from the 80 percentile) thus confirming the ambiguous influence of the BNT on the BNS acceptability due to the historical reasons explained above. For the Southern banks the marginal effect is positive and significant, being on average around 1.50 for the BN and 0.33 for the BNS.

TABLE 2

	1	2	3	4
competitor	.8112*** (5.66)		−2.4771*** (−3.08)	
outflow	.1301* (1.68)	.14010 (1.49)	.0856 (1.10)	.0598 (.77)
competitor*outflow			.3157*** (4.16)	
bntbranch		−.1271 (−.67)		−6.2663*** (−5.32)
bnbranch		1.3411*** (7.37)		−1.0380 (−.75)
bsbranch		.6104* (1.89)		−1.7656 (−1.03)
bnt*ouflow				.5555*** (5.29)
bn*outflow				.2444* (1.79)
bs*outflow				.2024 (1.40)
Constant	4.4316*** (5.54)	4.5013*** (5.54)	4.7167*** (5.80)	5.51557*** (6.24.)
Obs.	1119	1119	1119	1119
Groups	79	79	79	79

Dependent variable: Bnsnetconversion. t statistics in parentheses.

4.2 The "net" notes conversion

Table 3 shows the results of the same regressions we reported in the previous table when we use, as dependent variable, the net redemption of banknotes by the BNS, i.e *bnsnetconversion*: The results confirm fully those found in the prevous section. In every set of regressions the coefficients relating to the activity of a competitor in the area are significant and have the right sign. The only exception is represented by the coefficients relating to the activity of the BNT that remain consistently insignificant (columns 1 and 2). Turning to second specification (columns 3 and 4), also in this case the marginal effect for the variable competitor is positive and significant (the magnitude is on average 0.76); here again for the BNT the effect is positive from around the 80 percentile. As for Southern bank the marginal effect is positive and significant for the BN; for the Sicilian bank it is positive (from the 10 percentile) and significant.

Over all we take our results as a quite convincing evidence that in the BNS provinces where rival banks operated the acceptability of the BNS notes was weaker and the preferences of the public were diverted toward other banks notes.

TABLE 3

	1	2	3	4
competitor	.7764*** (5.43)		−2.5658*** (−3.20)	
outflow	.0867 (1.12)	.0712 (.93)	.0399 (.52)	.0143 (.18)
competitor*outflow			.3211*** (4.24)	
bntbranch		−.0743 (−.39)		−6.2394*** (−5.32)
bnbranch		1.2868*** (7.09)		−1.0244 (−.74)
bsbranch		.5468* (1.70)		−2.0547 (−1.20)
bnt*ouflow				.5580*** (5.34)
bn*outflow				.2382* (1.75)
bs*outflow				.2223 (1.54)
Constant	5.0929*** (6.25)	5.0682*** (6,27)	5.2854*** (6.53)	5.7550*** (6.24.)
Obs.	1095	1095	1095	1095
Groups	78	78	78	78

Dependent variable: Bnsnetconversion. t statistics in parentheses

5 Conclusions

In a regime characterized by multiple issuers of banknotes, acceptability is crucial in determining the sustainability of the system. In the case of Italy the difficulties banks of issue had to face in redeeming their notes during the 1893 economic crisis, which finally led to the creation of the bank of Italy, have been pointed at as a major cause for the failure of the system. However, while it is now crystal clear – as some economists of the time including Pareto had suggested – that the Italian Government had urged the issuing banks to overissue in order to bail out the financial institutions in dire straits, the view that minor issuers had always been fragile and in need of help from the dominant bank is still widely accepted – thus implying the fragility of the whole system.

This paper is a first attempt to challenge this view, through a careful analysis of the historical performance of the Italian monetary system in the years following the country's unification and through an econometric exercise in which estimated the acceptability of the BNS notes in the Italian provinces from 1961 to 1893 (with the interruption of the forced circulation years). We found that the opening of branches by minor banks in the provinces where the dominant BNS was operating implied an increase in the exchange of its notes for other issuers notes or specie. This effect holds also when we widen our investigation to include the effect of the presence of a rival bank in areas where competitors had always been operating or started to operate in the same period as the BNS. Results are robust to the consideration of the inverse flow of exchange, as shown by the "net redemption", i.e. the difference between the volume of BNS notes returned to the bank and the BNS notes demanded by the public in exchange for other notes or specie.

Our results are not necessarily in contrast with the stories of difficulties some banks experienced in honoring their promise of exchange. Redemption could well have been costly for the banks that were overissuing; however, far from being a flaw, the costs of redemption were part of the sound working of the system. The constraint of convertibility was the rule allowed stability as it curbed the temptation to increase circulation beyond the needs of the public.

What our study has shown is that even the big BNS had to face the problem of the shortening of the period of its circulation and the constraint of convertibility was imposed on its notes; whenever the public was left free to choose, the presence of a minor bank operated as a discipline device for the big one. Whatever the causes for the abandonment of this regime, the spontaneous preference of the public for the dominant bank's circulation does not seem to be among them.

6 References

Banca Nazionale Nel Regno d'Italia, Adunanza Generale degli Azionisti, several years.

Banca Nazionale Toscana, Bilancio, several years.

Banca Toscana di Credito per la Industrie e il Commercio d'Italia, Bilancio, several years

Banco di Napoli, Relazione del Consiglio di Amministrazione al Consiglio Generale, several years.

Banco di Sicilia, Consiglio Generale, Relazione, several years

De Mattia, R., I bilanci degli istituti di emissione italiani - 1845-1936, Banca d'Italia, 1967.

Di Nardi, G., Le banche di emissione in Italia nel secolo XIX, Unione Tipografico - Editrice Torinese, 1953

Driscoll, J. C., A. C. Kraay. 1998. Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. Review of Economics and Statistics 80: 549–560.

Fenoaltea S., "The Growth of the Italian Economy, 1861-1913: Preliminary Second-Generation Estimates", European Review of Economic History, 9, 2005 : 273-312.

Fenoaltea S. *The Reinterpretation of Italian Economic History: from Unification to the Great War*, New York: Cambridge University Press, 2011.

Fratianni M., Spinelli, F., Storia Monetaria d'Italia. L'evoluzione del sistema monetario e bancario, Arnoldo Mondadori Editore, Milano, 1991.

Gianfreda, G., Janson, N. "Le banche di emissione in Italia tra il 1861 e il 1893: un caso di concorrenza?", Rivista di Politica Economica, January 2001.

Pareto, V., "L'intervention de l'état dans les banques d'émission en Italie", Journal des économistes, april 1893, pp. 3-28.

Rajan, R. and L. Zingales, "Financial Dependence and Growth," The American Economic Review 88: 559-586, 1998

Rolnick, A. J., Weber, W. E., "Explaining the Demand for Free Bank Notes" Journal of Monetary Economics, 21, 1, January 1988, pp. 47-71

Selgin, G.A., "Free Banking and Monetary Control", The Economic Journal, 104, nov. 1994, pp. 1449-1459;

Selgin, G.A., White, L.H., "How would the invisible hand handle money"?, Journal of Economic Literature, 32, 1994.

Toniolo G. *Storia economica dell'Italia liberale,* Bologna: il Mulino 1988.

Toniolo, G. Conte, L. and Vecchi, G., "Monetary Union, institutions and financial market integration: Italy, 1862-1905", Explorations in Economic History, vol. 40(4), pages 443-461, October (2003).

Weber, W. E., "Banknote Prices in the United States Prior to 18602" FRB of Minneapolis Working Paper 629, October 2003.