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# MONOPOLY VERSUS COMPETITION IN THE SUPPLY OF PAPER MONEY UNDER CONVERTIBILITY: PORTUGAL,1860-1890

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## I

For nearly two decades now, the competitive issue of fiat money by "free banks" been attracted a growing interest . As has been pointed out more than once, the topicality of the subject arises from the current debates over financial deregulation, the control of the money supply and even over the very nature of money itself,the fundamental choice lying between "a free market regime (or free banking ) and government control of money or (central banking )." (1)Since, for all of the 20th century, the latter has universally prevailed , the only way to test models and theoretical propositions regarding the former has been to delve into the past , in search of data arising in less regulated situations, and this has been responsible for a good deal of research carried out on 19th century banking and monetary history.

There are two biases in this flow of publications,one geographic, the other thematic. The first of these is evident in the fact attention thus far has concentrated almost entirely on the North American and Scottish experiences with free banks. One consequence of this has been to neglect the very considerable and also relevant European experience in the 19th century with different forms of non-monopolistic issue of currency , episodes of which are to be found for more or less lengthy periods in the monetary histories of at least Sweden,Germany,France,Belgium,Italy,Spain,Portugal and ,of course,England.(2) In view of the great diversity of arrangements to be found in these countries and of the variety of ways in which,sooner or later , they all tended towards monopoly situations, there can be no doubt that our understanding of these processes can be much enhanced by the study of some of these still relatively unknown cases.

The thematic bias is a consequence of the geographic one and shows itself in two ways.On the one hand, focussing on Scotland and the USA , both of which had very lightly regulated free banking, has meant ignoring the many other forms of plural issue with more or less competition, which proliferated in Europe and which can shed perhaps as much light on these matters as can the study of those quasi "pure" instances of deregulated production of money.The second aspect is that the range of problems which have been addressed within the field of the competitive issue of money has been narrower than it could have been owing to a natural tendency to consider only those which stand out in the historical instances which have been studied.In particular, as a result of the heavy reliance on material from the US experience, the literature has been predominantly concerned with the degree and the causes of the instability traditionally claimed to be associated with free banking, and more recently, with quantifying the losses suffered both by noteholders and society at large, as a consequence of this instability.

Other historical examples and indeed some of the 19th century debate on money and banking suggest ,however, that there are other, no less important questions to be asked.In the long and sometimes difficult process replacing specie with alternative ,socially cheaper forms of money, which performed better and inspired greater confidence on the part of the public - monopoly or the competitive issue of fiduciary notes? Was there or not a natural monopoly in the production of money? Has it been clearly established that, where there was competition among issuers, market forces did not promote a tendency towards concentration?(3) Were there in fact economies of scale in this side of the business of banking? Finally , if we are to believe that the public , when it came to handling the notes of a bank issuing under competition, was not "naive or misinformed", in the words of Rolnick and Weber, then how did it keep itself informed and on what basis did it distinguish between brands of banknotes?(4)

The present paper seeks to deal with these questions by using as its empirical base Portugal's experience with paper currency between 1860 and 1890, a choice for which there are several good reasons. First of all , by presenting a new case study, it is an attempt to meet M.Bordo's plea that "to answer the question of why free banking was successful in some environments but not in others , further studies on the operations of such a system would be welcome."(5) In the second place , it is an example for which there is an abundance of fairly reliable evidence. Not only did all Portuguese banks of the period have to publish detailed annual reports , balance sheets and accounts but also a considerable amount of monthly data were published officially.(6)In the third placethe Portuguese situation exhibits characteristics which,as we shall presently see, render it specially helpful,in the context of 19th century Europe, in shedding light on some of the questions posed above.To do so, we shall start by describing, in the next section of this paper,the arrangements under which fiat money was circulated in this country, during these years.

## II

At one time or another during the last century,there were episodes of multiple issue of bank notes under a regime of convertibility in the monetary history of most countries .Despite the great variety of arrangements devised for this purpose,one can divide them roughly into three classes, according to the territorial scope of the provisions for competition among issuers and according to the mix of bank types in operation.In a first group, comprising Scotland and Sweden (and possibly Switzerland too),there was untrammeled competition over the entire national territory. This involved one or more banks with limited liability, on the one hand, and banks with unlimited liability, on the other.The second group, perhaps the largest, includes countries where there were several banks of issue, each one of them enjoying a monopoly within a given area, usually that of the commercial centre where it was headquartered.Typically all of them were chartered joint stock companies with limited liability and one of them was a "national bank" with special ties to the central government.(7)The third group, represented by England and Portugal, is that in which there was multiple and competitive issue of fiat money in one part of the country, while in the remainder a monopoly was one of the privileges enjoyed by an old established chartered bank with close relations to the State.

From the point of view of evaluating the virtues and the vices of competitive versus monopolistic arrangements, it is obvious that the last of these classes offers the greatest scope and within this, it will be argued here, Portugal was the most illuminating of the two cases available.One reason why England is less useful is that after 1833, when satisfactory data becomes available, Bank of England notes ceased to be strictly like other notes given their unique status of legal tender throughout the country.Outside the London and 65 mile radius area, therefore, there was no longer a truly unregulated situation of competition suitable for the comparison which interests us here.In the second place, while the notes issued by the other banks can be and have been quantified, it is impossible to know , in terms of Bank of England circulation,how much stayed within the monopoly area and how much was outside it.It becomes impossible , for example, to break down the composition of the per capita circulation by regions and therefore to determine which factors may have influenced its growth as well as the relative success of different kinds of issuers. Lastly,in judging how economic agents reacted to these two fundamentally opposed systems of issue, it would be desirable to be able to contrast regions that were socially,economically and culturally similar and also exhibited a certain degree of internal homogeneity.Patently, this is not what happened in England either before or after Peel's Act of 1844.

In the case of Portugal between 1860 and 1890 it is much easier to satisfy these conditions. There were two territorially distinct regimes for the creation of paper currency, both of them subject to convertibility into specie under the provisions of a gold standard rule adopted in 1854.In the Lisbon district, the Bank of Portugal , which since its inception during the financial crisis of 1846 had a specially close relationship with the State, enjoyed among other privileges that of being the sole issuer of interest-free bearer notes.(8) While not legal tender ,all state offices were bound to accept them at par, although the State could not compel its creditors to accept them in turn.Almost until the end of the period we are considering, there were no quantitative limits to this right. The law merely stipulated that "this issue will be in such a proportion as to never expose the Bank to any interruption or delay in its payments."(9)Only in 1887 did new legislation establish that the total amount should be covered by easily realizable assets (of not more than three months duration), that it should not exceed twice the paid-up capital and that notes plus deposits should be covered by one third of gold coin or bullion.

The Bank of Portugal was also permitted to circulate its notes in the rest of the country in competition with other authorized issuers .In practice,however, it only did so on any scale in Oporto, with insignificant amounts also being put out in Faro and on the island of Madeira. All of its notes were domiciled, which meant that normally they were redeemable only at the point of issue and were stamped accordingly. It is possible therefore to know how much ,at any moment ,the Bank of Portugal kept in circulation either within or without its zone of monopoly .

In the rest of the country, the issue of fiat money was competitive but not entirely free.Regulation limited both entry and the amounts that could be made available to the public.Apart from the Bank of Portugal, altogether eight other joint stock banks with limited liability were empowered to circulate their own notes. This was not an automatic right but could only be granted by a special act of parliament,something which was very much sought after - in 1877, there were twenty one petitions in Parliament awaiting a decision.[10] It was usually subject to two rules: a ceiling equal to three fourths of the paid up capital and gold and silver reserves to cover at least one third of all deposits and notes in the hands of the public.[11] Each bank printed and circulated its own, readily distinguishable notes and was obliged to redeem them on sight, subject to the rules and penalties for commercial paper in general laid down in the Commercial Code.[12]

In a country peopled mainly by illiterate rural folk who were highly suspicious of paper money and where transport and communication costs were high, it is hardly surprising that its fiduciary circulation should have been confined to the cities, where it was issued and where the head offices that redeemed it were situated.As one contemporary complained, in the provinces "notes are exchanged with difficulty, in minute quantities and often at a discount...If you have one, you either keep it or you have to send it to one of the two commercial centres where it circulates."[13] The consequence was that notes circulated basically in Lisbon and Oporto, since the only two other banks of issue located elsewhere, respectively at Braga (population - 24,000 in 1864) and Guimaraes(population -13,000 in 1864),barely did anything at all in this line of business.

Besides the neat geographic definition of their scope of the two systems, the second advantage presented by Portugal is the likeness, at this time, between the cities in question.Though Oporto may have been more "industrial" and Lisbon had a greater relative weight of administrative functions, they were the country's two principal port cities and manufacturing centres.Indeed ,Justino has considered that at mid-century, when the country was still poorly integrated as one market, each one of them was the economic "capital" of its respective half.[14] They were also the locus of most of the financial activity as together they accounted for three fourths of the paid-up capital and one half of the number of banks established during these years in Portugal.

Since the rise in the public's preference for forms of money other than specie is generally deemed to be closely related to real income and the standard of cultural development, it is important to note how close Lisbon and Oporto were in these respects too. Regarding the first , obviously there are no direct estimates but the two indicators which are available point clearly in this direction. Meat consumption on a per capita basis, a much favoured proxy variable, shows no great differences between the inhabitants of the two cities , over the period considered.[15] The same is true for the receipts of the contribuicao industrial, a direct tax which fell on manufacturing,trade and certain other service activities.In 1878, for example, each inhabitant of Lisbon paid an average of 2.2 milreis, while in Oporto, the equivalent figure was 2.3 milreis. As for the second aspect, the best available evidence are the statistics on the numbers who could read and write.These show the country's two main cities as islands sticking out in a sea of abysmal ignorance and with levels of literacy that were very close - 55% for Lisbon and 51% for Oporto, in 1878, in contrast with 18% for Portugal as a whole.[16]

From the outline thus presented, it would seem that better conditions could not have been devised for examining how markedly different systems of issue performed under similar economic and social conditions and ,in particular, how ,from this point of view, monopoly compares with deregulation, .In the next section , we shall therefore turn to this question , beginning with an assessment of the degree of instability associated with either of these two regimes. This will be followed by a look at which of them was the most successful in promoting the progressive replacement of specie by convertible paper and a comparison of the social costs of fiat money production under each one.

## III

In all of its thirty years of existence ,the plural and competitive issue of banknotes was never an unstable affair and in this respect there is nothing to distinguish it from Lisbon's monopolistic arrangement.In Oporto,there was not a shred of "wildcatting" and the public suffered zero losses in its holdings of this kind of money because none of the banks in question was ever liquidated or even suspended payments. In fact, as far as we know, economic agents who used this paper in its normal place of circulation did not even have to face the contingencies of any discounts to its face value since it rated always at par. Likewise, it cannot be claimed that overissuing contributed to either setting off or propagating any of the commercial or banking crises of the period.

The most notable of the latter , that of August 1876, can be ascribed to a speculative bubble during 1873-1875, which was fuelled by a strong inflow of funds from Brazil and by the pyramiding of assets by les scrupulous operators. The aggregate note issue of the northern banks,however,remained a small fraction of assets throughout the preceding period of expansion and its increase in 1874-1875 was proportionately smaller than that of the Bank of Portugal.

When the moment of truth finally came, none of the Oporto banks was seriously involved and it was the Bank of Portugal which had to suspend payments briefly,for a few days, and which had to ask the government to declare a general moratorium.As one of its critics remarked at the time,"the Bank of Portugal , in spite of the important improvements brought about by the present Board, was unable to inspire in its depositors and note bearers the confidence which is necessary if it is to fulfill a mission that places it above other institutions", a barbed reference to the plan to make it the country's sole issuer and an officially consecrated "lender of last resort."(17) It is true that the four establishments which precipitated the crisis were all located in the north.On the other hand,none of them was a bank of issue and when in the aftermath ,it became necessary to wind up some of these establishments,again they were all non-issuing. It is also interesting to note that in May,when a preliminary shock was felt, considerably more money had to be made available to help banks in Lisbon than in Oporto.(18)

The next major upset to the Portuguese financial system , in 1891, sealed the fate of the dual arrangement for issue which had flourished since the 1860s , but again overissue was not even remotely responsible. In fact , the circulation of the Oporto banks had stabilized since 1887 . This time the roots of the problem were a growing budget deficit which caused suspicions concerning the State's solvability and doubts over the imprudent speculations of certain banks .This time, however, external factors were present too. One was the virtual drying up of the remittances from Brazil ,as a result of the crisis in that country , coupled to a worsening of an already adverse balance of trade. Another was the generally tight conditions of international financial markets brought on by the recent Baring crisis which rendered them less open than usual to the credit needs of the Portuguese government.(19)

One of the consequences of all this was the end of convertibility and the government's decision to unify the issue of inconvertible money under the single aegis of the Bank of Portugal. In June 1891, the northern banks of issue signed a contract with the Bank of Portugal whereby they relinquished their rights of issue in exchange for a 36 year loan equivalent to the amount they were supposed to have in circulation at the time.

Contrary to what has been claimed for the Scottish system , it was not the caution induced in these establishments by their unlimited liability which explains their already noted stability and the absence of losses to noteholders.(20) In fact, the example of Oporto shows that limited liability can coexist with restraint in note issue but it must also be recognized that this was so owing to certain particular features of this situation.One of these, as we shall presently see, was the small scale of the supply of paper money.Another was the large denomination of these notes.Except for the Nova Companhia de Utilidade Publica, where the lower limit was 5$000 milreis, the smallest was worth 10$000 milreis, roughly the equivalent of 2.2 pounds sterling or of 40 times a male labourer's daily wage.And even these somewhat smaller types were not the most common ones. As is illustrated by the Banco Mercantil Portuense, in 1885 out of an issue of 310,000$000 milreis,80% was represented by notes of 20$000,50$000 or 100$000 milreis,that is ,roughly five pounds and up.(21)

This meant that note bearers were not only few in numbers and often known to each other but also the sort of people who used paper money to carry out large transactions and were familiar with the current condition of the issuing banks.Lacking here then was the possibility of that dispersal of bank notes over a wide area which supposedly facilitated the task of those who wished to indulge in wildcatting.(22) Under these circumstances, it would have been difficult for any bank to increase its issue sharply without this being noticed by the interested public .Since the latter had always the option of redeeming its notes in gold, at a moment's notice , the market was sufficient to keep any bank of issue in line.If a bank tried to overissue,the public became aware of this very quickly and prudently would start to return its notes for conversion into specie.As was said at the time of the speculative fever in 1874,"it is never out of prudence that the banks refuse deposits or that they hold back their circulation. It is simply because they cannot do otherwise."(23)

The fact that Oporto notes were,historically, as safe as those which circulated in Lisbon does not necessarily mean that, at the time, the public perceived them in this way or that it was prepared to hold them to the same extent. The latter would depend partly on the general demand for money and partly on the public's preference regarding the form this money was to take . Converning the demand for money, it seems fair to assume that there were no significant differences between Lisbon and Oporto , in view of what has been said already about the economic and social characteristics of the two cities. To this we must add the fact that by this time they constituted an integrated capital market, with practically the same rates of interest . Consequently, it seems plausible to think that the differences in the demand for paper currency should have been ascribable simply to the differences between the systems under which it was provided in either place.

Contemporary discussion of monetary problems in Portugal mirrored that which took place in more advanced countries. As such , it concerned itself , among others, with the question of whether it was monopoly or free banking which was the more conducive to that great civilizational step forward which consisted in replacing cumbersome and costly metallic currency with paper money.(24) In fact, there was good reason for concern in this matter. Under the gold standard, the supply of money was heavily dominated by currency - between 1854 and 1891 , the Portuguese currency ratio never fell below 74% and was usually much higher - and the stock of currency was heavily weighted towards specie, most of it gold. Moreover, the aggregate supply grew slowly and was low in per capita terms compared to the richer economies, something which was held by several writers to be responsible for the high rate of interest and for the general backwardness of the country.(25)

While both sides were right about the comparatively low appeal to the public of notes as a form of money, the figures in table 1 clearly show that they were wrong when it came to claiming any advantages for either of the two competing systems . The difference in the global values of the note circulation in Lisbon and Oporto,respectively, was merely a function of population size and , with the exception of the critical year 1876, the per capita figures were always remarkably close and exhibited the same time trend.Thus there seems to be no evidence to support the view that monopoly of issue was more successful than competition , in "modernising " the way money functioned in Portugal, or vice versa.

Table 1
Bank Notes in Circulation in Portugal, 1864-1891

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| year | Total Lisbon | Total Oporto | Per cap Lisbon | Per cap. Oporto |

| | (contos) (milreis) | (contos) | (milreis) | |
|---|---|---|---|---|
| 1864 | 1443 | 817 | 7.6 | 9.2 |
| 1865 | 1486 | 985 | 7.7 | 10.8 |
| 1866 | 1427 | 851 | 7.2 | 9.2 |
| 1867 | 1575 | 507 | 7.9 | 5.4 |
| 1868 | 1513 | 687 | 7.5 | 7.2 |
| 1869 | 1693 | 692 | 8.2 | 7.2 |
| 1870 | 1791 | 763 | 8.5 | 7.8 |
| 1871 | 1992 | 881 | 9.3 | 8.9 |
| 1872 | 2248 | 1042 | 9.9 | 10.3 |
| 1873 | 2318 | 1172 | 9.7 | 11.4 |
| 1874 | 2531 | 1076 | 10.4 | 10.3 |
| 1875 | 3425 | 1359 | 13.8 | 12.8 |
| 1876 | 3590 | 704 | 14.0 | 6.6 |
| 1877 | 4079 | 1008 | 15.6 | 9.2 |
| 1878 | 3949 | 1144 | 14.5 | 10.3 |
| 1879 | 4466 | 1624 | 16.1 | 14.4 |
| 1880 | 4563 | 1987 | 16.0 | 17.1 |
| 1881 | 5423 | 2566 | 18.5 | 16.8 |
| 1882 | 4207 | 2045 | 14.6 | 16.8 |
| 1883 | 4658 | 2022 | 16.1 | 16.3 |
| 1884 | 4778 | 2390 | 15.5 | 18.8 |
| 1885 | 5498 | 2108 | 18.1 | 16.2 |
| 1886 | 5811 | 2545 | 18.7 | 19.1 |
| 1887 | 7361 | 3340 | 21.9 | 24.6 |
| 1888 | 9508 | 3409 | 28.3 | 24.4 |
| 1889 | 10083 | 3258 | 29.8 | 22.8 |
| 1890 | 8605 | 3137 | 24.3 | 21.5 |

Sources: For the value of notes in circulation , the annual reports and accounts of the following banks:Banco de Portugal,Banco Alianca, Banco Uniao, Banco Comercial do Porto ,Nova Companhia de Utilidade Publica and Banco Mercantil Portuense.The Oporto data include Bank of Portugal notes domiciled in that city. For population, data from the national censuses, with interpolations kindly supplied by Maria Ioanis Benis.
Note: 1 conto= 1,000 milreis; 1 pound sterling=4$500 milreis (i.e.,4.5 milreis)

The current literature advances several reasons which could lead one to expect a different result, that is ,a systematically higher holding of notes by Lisbon's inhabitants.(26) The most obvious perhaps is the higher risk of loss due to counterfeiting which is associated with the greater diversity of notes in a situation of plurality of emission or, if one prefers, the higher cost of their detection. Another reason is what King(1983) called an " external economy of scale" which is present when there is only one bank of issue and there is therefore a lower "probability of meeting an individual uninformed about the value of one's note" and a lower cost of trading with it .

In the example we are considering neither of these factors was likely to have a significant impact. Between 1860 and 1890, counterfeiting in Portugal was rare and the reason was simply that the relative sophistication of the people who handled bank notes and the small size of the milieu in which these circulated made it extremely hard to pass forgeries successfully and for any length of time.The counterproof for this is the enormous amount of crude counterfeiting which started to appear after 1891, as soon as inconvertible paper money was widely disseminated among an essentially illiterate population, which could only distinguish the face value of each note by its colour.(27) "External economies of scale" were neither gained nor lost between Lisbon and Oporto because, as mentioned earlier, in neither place were notes ever circulated at a discount and consequently the multiplicity of issuers is unlikely to have raised transactions costs in Oporto.

Other things being equal, a weaker preference for competitively issued notes might arise because there is always a chance,under these conditions, that one bank will try and "surreptiously" overissue, something which might pass unnoticed for a while if the others are "well behaved". If it does so to excess and fails, then not only the holders of its notes but also those of the other issuers in the system face a significant probability of losses due to generalized suspicion and possibly the occurrence of a panic. The result should be a naturally greater caution vis-a-vis paper currency.But again, the particular characteristics of the problem in Portugal precluded this from happening. The number of banks and the number of note holders were too small for unobserved overissuing to take place on any scale and for any length of time.At the same time , the costs of monitoring the banks of issue to note holders were low because this required knowhow which people in business had to have anyway. On the other hand, the close relationship of the Bank of Portugal with the State, which to some might act as an enhancer of respectability and trustworthiness, to others was a clear disadvantage, not a reason for preferring its fiat money. If it is true that when in difficulty the Bank of Portugal was more likely to be helped by the government than any other,it was also argued that the authorities were more likely to interfere in its life and therefore threaten its stability than with the others.(28)

As White(1984) correctly pointed out in his study of Scottish free banking, there is no limit to how much a bank wants to issue. The restriction lies in the amount of its notes the public is prepared to hold and not return at once for redemption into specie.In any case, there is always a certain flow of note returns and just as the bank has to hold precautionary reserves with respect to its other demand liabilities, under convertibility so too must it do so in order to back its issue of notes with a fractional reserve of specie.The greater its note circulation, the larger this reserve must be;or, for a given value of notes in circulation, the greater the confidence of the public in the bank's ability to exchange them for coin, the lower the reserves which have to be held in order to assure smoothness of operation,i.e. an acceptably low probability of having to suspend payments.For the individual bank of issue, the opportunity cost of maintaining these reserves is the so-called "liquidity cost" of putting out its own fiat money and it is one of the main factors determining how much it will issue. For the system as a whole, the aggregate specie backing needed for a given note circulation is the social cost of having this amount of fiduciary paper made available.

Contemporary analysis in Portugal was concerned with the enormous amount of gold the country had to import in order to develop its stock of money in harmony with the needs of the economy .The question which naturally followed was whether, in replacing coin with notes, monopoly was more economical of specie reserves than competitive issue.[29] Unfortunately, since banks of issue had to hold reserves to back deposits as well as notes in the hands of the public , it is impossible to estimate separately what was the social cost of the note issue under one and the other of these two regimes.We have to make do therefore with the overall reserve ratio statistics (reserves divided by total demand liabilities,i.e.notes plus deposits at call) and assume that the public's confidence regarding the deposits of any bank was the same as that towards its note issue.

The data in table 2 enable us to compare the effect of the monopoly situation of the Bank of Portugal with that of the competition among the Oporto banks, from this point of view . Once again, it is far from clear that the former had any advantage. Overall, the mean reserve ratio of the Oporto banks was practically the same as that of their Lisbon rival and three of them outperformed it in terms of saving specie in the process of providing the public with money other than coin. It is also interesting that though the Bank of Portugal was legally not subject to the one third rule for reserves to demand liabilities like the Oporto banks were, it complied with it all the same.

Table 2

Reserve Ratios of Portuguese Banks of Issue,1865-1890

| Banks | Mean Reserve Ratio(%) |
|---|---|

| | |
|---|---|
| Oporto | |
| Banco Alianca | 50.3 |
| Banco Comercial do Porto | 34.5 |
| Banco Mercantil Portuense | 30.0 |
| Banco Uniao do Porto | 28.7 |
| Nova Companhia de Utilidade Publica | 26.1 |
| All banks | 32.1 |
| Lisbon | |
| Banco de Portugal | 32.0 |

Sources: same as for table 1

Results such as these call for some discussion, as there are several reasons why one might have expected them to be otherwise. Some of them have been examined already and have to do with how the public's confidence in paper money was affected by the different features of either monopolistic or competitive issue. The point is that for a given circulation, the greater this confidence , the lower the probability of a note holder wanting to redeem his notes and therefore the lower the amount of specie which had to be held against this event.From what we have seen, it does not appear that the particular advantages usually thought to accrueto monopolists helped to enhance the perceived trustworthiness of the Bank of Portugal vis-a-vis its Oporto counterparts.

On the currently held assumption that the larger the bank, the safer it is thought to be,size could be another one of those "confidence-bolstering" aspects to which White(1984) refers .In all relevant ways, the Bank of Portugal was always considerably larger than its northern rivals. Its paid-up capital of 8,000 contos was just over three times that of the biggest of the Oporto issuers and was four times the average for all five of them. In terms of total assets, the contrast was even sharper and in terms of the note issue the ratio to that of all the other banks put together was 3:1 on average over the entire period.And yet it is questionable whether this mattered much.

It does not seem easy to devise a quantitative test for the relevance of a bank of issue's dimension to the public's confidence in its notes . However, the fact that Bank of Portugal notes freely circulated in Oporto alongside those of other banks provides us with a useful insight. For accounting reasons,good data are only available for the 1870s and 1880s but what they show that in spite of all its power and resources (not to mention privileges), the Bank of Portugal only managed to hold first place for half of these years and in several of them , it appears behind more than one of these visibly weaker banks. Thus, either scale did not impress the rather special note handling public much, or if it did, it was counteracted by other factors, of which more will be said later.

There is another set of reasons, of a "technical" as opposed to confidence-building nature, which ought to have helped the Bank of Portugal have a lower reserve ratio than the Oporto banks of issue. Their role was to keep down the variance of the reserve losses caused by note redemption and therefore the amount of commodity money needed as a precaution.They did not affect the behaviour of private economic agents directly but made themselves felt via the institutional design of the monetary regime and the effect of this on the way in which notes circulated within the system.One of these factors was the privilege whereby Bank of Portugal notes enjoyed the status of legal tender in all payments to the State. Given the close relation between the latter and the Bank, it is indubitable that normally governments would not present the notes accumulated in the Treasury's coffers for redemption into gold , without prior consultation with its bankers as to the convenience of such an operation. This being so, the probability of a Bank of Portugal note being returned without warning, which is what determined the desired size of the specie reserves, should have been lower , other things being equal,than for the other issuers, who did not enjoy this advantage.

It is difficult to tell how significant this may have been , since we lack any evidence regarding what part of this circulation was used to pay the State. There is cause, however, to suppose it would not have been substantial. One reason is that with notes quoted everywhere at par, there was no special advantage in using them for these payments. as opposed to any others.(30)Another is that there is no difference in the behaviour of the Bank of Portugal's reserve ratio either before or after 1876, the year in which this privilege was terminated.

It has been convincingly claimed in various studies that where there is competitive note issue, participating banks will sooner or later find it advantageous to establish a note exchange system. This is so much so that such procedures should emerge "spontaneously", simply by dint of self interest and the workings of the invisible hand.There is no evidence that arrangements of this kind ever existed in Oporto - at least the published sources we have do not make any explicit reference to one - and this being the case, the consequence should have been a higher reserve ratio for these banks than if they had operated in a framework of note exchange. More importantly, in comparative terms, this would have given the Bank of Portugal , in Lisbon, a further advantage , since it was not subject to the possibility of "note duelling" with rival issuers which forced late 18th century Scottish banks , for example, to hold relatively higher specie reserves .(31)

The historical record provides no direct way of finding out if these banks did in fact have to face higher "liquidity costs" on this account. It may be questioned , however,whether it can have made much of a difference, when we consider that they competed among themselves for thirty years, without any legal barrier to the institution of a note exchange, and yet failed to set one up.One part of the explanation for this probably lies in the reduced scale of the aggregate issue , the high denomination of the notes and their dissemination among a small number of bearers , all of which would have made the returns from such efforts negligible and the exercise therefore pointless. The other part has to do with the liability structure of these banks. One of the principal ways in which a note of a certain bank fell into a rival's hands was by being deposited there.(32)In the absence of a note exchange, this would lead to their being rapidly presented for conversion into commodity money, since no bank of issue has any interest in holding another's notes as reserves and ,specie must therefore be held against the likelihood of this event. The smaller the ratio of deposits to notes in circulation, the higher the probability that the latter would get returned in this manner, and therefore the less it would be possible for the issuing bank to economise on its holdings of specie.Thanks to the establishment of a note exchange system during the late 18th century, Scottish free banks were able to keep very low reserve ratios but they had also strong incentives to do so insofar as their deposits were only less than double the worth of their notes in the hands of the public and consequently the pressure of returning notes on reserves was strong.(33) In late 19th century Oporto, it was quite otherwise.The ratio of deposits to notes for the banks of issue was 4 or 5:1 and if we assume that non-issuing banks would have treated notes deposited with them much more like reserves and not troubled to exchange them ,it becomes easier to understand that no note exchange should have emerged.

Size appears on this list of "technical"factors too. The grounds are that if the variance of the reserve losses of a bank rises less than proportionately as the number of its depositors increases , it seems likely that the same will happen with its note bearers too, the number of which should rise with the note circulation.(34)This then becomes simply a problem of internal economies of scale and we can test, bank by bank, for their presence by correlating with the value of each year's circulation a variable which somehow measures the short run variability in reserves associated with the redemption of notes.Unfortunately, all of these institutions were , in the jargon of the period, not only banks of circulation but also of deposits, and although we posess fairly detailed monthly statistics for the financial sector in this period, these do not distinguish the effect on reserves of, respectively,notes and deposit withdrawals . (35) We have therefore resorted instead to the variance of the monthly note circulation figures calculated over the 12 month of each calendar year as the dependent variable .

The result of this test lends no support to the hypothesis of increasing scale economies.In the case of all five Oporto banks, none of the coefficients of the independent variables (log of the mean circulation in the nth year) was significant. Only for the Bank of Portugal was the result statistically significant but here the elasticity of the variance relative to scale was practically unity.The explanation is probably that as long as note denominations remained high and the numbers of bearers continued to be small, there was not a sufficient degree of cross-sectional independence among individual redemptions for these economies to make themselves felt.(36) This was apparently true also in the higher range of values of the Bank of Portugal's circulation , the inference being that increments to this circulation did not imply putting notes into the hands of bearers with an attitude towards them that was distinctly different from the average of economic agents which already held them.In conclusion, the effect of scale was not to reduce the specie needs of issuers nor to affect their reserve ratios,a finding which fits well with the data presented in table 2.

The final aspect we have to consider here has to do with the comparative benefit to the monopolist issuer of its notes never falling into the hands of competing issuers. According to White(1984),when issued in excess, notes may be handled in one of three different ways.They may be brought back at once to be redeemed for coin, they may be deposited at another bank, or they may be kept as a reserve , with the intention of spending to other agents in the region. Under competitive issue, the first and second of these occurrences serve to check the overissuing bank and to bring about its adjustment via a reduction in its reserves which compels it to reduce the level of its circulation to that which is desired by the public.For a single ,monopolistic issuer these effects are attenuated because there is no inter-bank clearing to generate negative feedback and other banks are content to hold its paper money as part of their reserves. It may be therefore some time before these notes return to the bank of issue and cause it a loss of reserves, and this obviously generates a very different situation as regards the variance of its stock of specie.

The implication for the specific case we are studying is that for the Bank of Portugal, the corrective reflux mechanism described by White should have been less intense than it was for the five Oporto banks of issue. If we assume that whatever their status, from time to time all banks are liable to overissue and that other things being equal (or indifferent, as with the effects of scale), we should expect the latter to exhibit a stronger reserve variance, as a result of a stronger variance in their note circulation.

In table 3, we have presented as a time series for 1868-1890 the coefficients of variation of the monthly statistics on note circulation taken 12 months at a time. This approach is preferable to comparing variances because it renders readily comparable the performance of institutions of rather different sizes. The conclusion the data points to is the confirmation of White's hypothesis, with the Bank of Portugal's circulation considerably less prone to short term fluctuation than its northern counterparts and consequently needing a proportionately lower specie backing for this liability.

Table 3

Short Term Fluctuations in Note Circulation: Coefficients of Variation,1868-1890

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1868 | 0.17 | 0.20 | 0.22 | 0.52 | 0.17 | 0.14 |
| 1869 | 0.19 | 0.24 | 0.21 | 0.86 | 0.17 | 0.10 |
| 1870 | 0.18 | 0.27 | 0.16 | 0.59 | 0.07 | 0.09 |
| 1871 | 0.10 | 0.24 | 0.20 | 0.23 | 0.05 | 0.09 |
| 1872 | 0.16 | 0.17 | 0.19 | 0.19 | 0.02 | 0.08 |
| 1873 | 0.30 | 0.23 | 0.25 | 0.24 | 0.03 | 0.07 |
| 1874 | 0.18 | 0.34 | 0.38 | 0.42 | 0.07 | 0.05 |
| 1875 | 0.13 | 0.22 | 0.21 | 0.24 | 0.09 | 0.10 |
| 1876 | 0.43 | 0.99 | 0.72 | 0.95 | 0.81 | 0.07 |
| 1877 | 0.14 | 0.64 | 0.39 | 0.90 | 0.45 | 0.07 |
| 1878 | 0.15 | 0.19 | 0.27 | 0.14 | 0.27 | 0.06 |
| 1879 | 0.05 | 0.27 | 0.32 | 0.14 | 0.27 | 0.09 |
| 1880 | 0.12 | 0.22 | 0.22 | 0.17 | 0.16 | 0.06 |
| 1881 | 0.06 | 0.24 | 0.22 | 0.11 | 0.04 | 0.08 |
| 1882 | 0.02 | 0.40 | 0.13 | 0.06 | 0.23 | 0.10 |
| 1883 | 0.01 | 0.22 | 0.17 | 0.03 | 0.16 | 0.05 |
| 1884 | 0.04 | 0.19 | 0.13 | 0.06 | 0.15 | 0.06 |
| 1885 | 0.04 | 0.22 | 0.16 | 0.20 | 0.07 | 0.08 |
| 1886 | 0.06 | 0.06 | 0.16 | 0.09 | 0.03 | 0.07 |
| 1887 | 0.05 | 0.17 | 0.04 | 0.09 | 0.01 | 0.08 |
| 1888 | 0,09 | 0.06 | 0.34 | 0.09 | 0.09 | 0.15 |
| 1889 | 0.05 | 0.03 | 0.21 | 0.16 | 0.12 | 0.06 |
| 1890 | 0.09 | 0.03 | 0.20 | 0.17 | 0.11 | 0.09 |
| mean | 0.12 | 0.25 | 0.24 | 0.31 | 0.16 | 0.08 |

Sources: Estatistica Bancaria

Note: 1-Banco Alianca; 2-Banco Comercial do Porto; 3-Banco Mercantil Portuense; 4-Banco Uniao; 5-Companhia Nova Utilidade Publica; 6-Banco de Portugal.

What has emerged then in the last few paragraphs is that, notwithstanding all the supositions to the contrary ,in late 19th century Portugal, the case for the advantages enjoyed by a monopolistic issuer is weak.Despite all its privileges, the Bank of Portugal was unable to outperform the Oporto banks in terms, either of the quantity of paper supplied to the public, or of the savings in specie which the provision of this medium of exchange was supposed to bring about.In the end, the only significant difference between monopolist and competitive issuers lay in the operation of the corrective reflux mechanism, but this was neither enormous nor does it seem to have been turned to practical advantage by the Bank of Portugal, which failed to make the reserve economies which this warranted. Why this should have been so is still hard to say.On the one hand, it is possible that being the posessor of by far the largest institutional gold reserve in a country which was on the gold standard placed on it burdens for which the only remedy was strong reserves. On the other hand, one is tempted to think that it was merely a reflexion of the general inefficiency to which monopolies and large scale firms fall prey.The doubt will only be cleared up when we know more about the role of the Bank in the 19th century Portuguese economy.In the meantime however, this is the appropriate point from which to lead on to the two related questions which constitute the final section of this paper, namely whether the issue of paper money is a natural monopoly, and what, in those situations where monopoly has neither emerged nor been instituted, is the basis for the competition among banks of issue.For this, we shall now focus our attention entirely on what happened in the city of Oporto between the early 1860s and 1890.

## IV

One of the strongest arguments in favour of institutionalising a monopoly for the issue of fiat money has been, down the ages, that this merely provides a legal blessing for something which is "natural" and would happen or is already happening anyway. For the 19th century Portuguese champions of free banking, facts and arguments such as those presented in the preceding section were more than sufficient cause for condemning the legal monopoly established in Lisbon and for putting and end to a situation which was deemed inefficient,unjust and tyrannical.(37)For their opponents, even though fredom was still the first principle, in this particular instance not only was this not so but the issue of paper money was a natural monopoly, like the post office,the provision of justice or the minting of coin, and what was iniquitous was that the profits from this eminently social function should be privately appropriated.(38)

Although hardly a central theme, the problem has not escaped the attention of the more recent literature, the consensus being that "natural monopolies" have not been manifest in the known historical instances of competitive issue where regulation has not forced the matter in favour of legal monopoly.The criterion for ascertaining this has been whether the "industry" exhibits tendencies towards concentration (King,1983,p.133) or , as Vaubel (1984) put is, "only if a governmental producer of money can prevail in conditions of free entry and without discriminatory subsidies is he an efficient natural monopolist."(39)

The relevant part of Portugal's monetary history, is the experience in Oporto between 1860 and 1890 , and here too the evidence does not substantiate the natural monopoly thesis.The two most obvious facts in this respect are that for thirty years there was competition in the issue of notes involving five local banks and a branch of the Bank of Portugal, without either the latter or any of the former having ever succeeded in prevailing over the rest of the field. This is all the more remarkable in the case of the Bank of Portugal when we consider that at least some of the cards in this game were stacked in its favour, thanks to the various statutory privileges it enjoyed.

The market remained in fact quite evenly divided among the competitors , with no apparent trend towards concentration.In table 4 , we show the Herfindhal index for the concentration of market shares in note circulation in Oporto, which illustrates this last point very clearly. There is no upward trend in the evolution of the index except for two brief periods when there was a departure from this situation and these corresponded to special circumstances which distorted the normal condition of competitiveness. The first, 1876-1878, relates to the major banking crisis mentioned earlier, during which non-privileged banks contracted sharply ,while the Bank of Portugal could not because it had been entrusted by the government with the role of lender of last resort. The reason for the second outlying period , from 1888 to 1890, probably lies in the new charter of the Bank of Portugal decreed in that year.According to this , the Bank was to enjoy the monopoly of issue for the whole country, to come into effect as soon as an agreement with the northern banks could be reached for the withdrawal of their notes. Without much certainty concerning the terms of this settlement and with the Bank of Portugal now engaging in "note duelling" with them,presumably to try and drive them out of the market, and that they had simply divided the market among themselves. The long term stability of the Herfindhal index would in this case no more than mirror the stability of this agreement and not the vigour of the competition.

The fact that there is no qualitative evidence to indicate that this was ever the case though helpful is hardly conclusive. The data in table 5, on the other hand, does provide quantitative support for the inital supposition. If there had been collusion, the expectation would be that not only market shares would have remained stable but also that their being unevenly spread among the different banks , these would tend to occupy the same positions in the order of importance of their respective note issues . In fact, this did not happen at all.For the period 1868-1890, there were overall 69 position changes, which means that on average, each bank lost or gained a place on the order list of relative magnitudes of note issue once every two years.It is hardly possible to claim that this represents a situation of restraint of market forces and the conclusion must rather be that , when there was no regulation or government interference,note issuing in 19th century Portugal showed none of the signs of being a "natural monopoly".

Table 5
Yearly Changes in Relative Positions of Oporto Note Issuers

| | Number changes all banks |
|---|---|
| 1868/9 | 3 |
| 1869/70 | 2 |
| 1870/1 | 2 |
| 1871/2 | 2 |
| 1872/3 | 5 |
| 1873/4 | 4 |
| 1874/5 | 2 |
| 1875/6 | 5 |
| 1876/7 | 6 |
| 1877/8 | 4 |
| 1878/9 | 6 |
| 1879/80 | 4 |
| 1880/1 | 4 |
| 1881/2 | 6 |
| 1882/3 | 2 |
| 1883/4 | 0 |
| 1884/5 | 2 |
| 1885/6 | 0 |
| 1886/7 | 2 |
| 1887/8 | 6 |
| 1888/9 | 0 |
| 1889/90 | 2 |
| | 69 |

In looking at how laissez-faire monetary arrangements functioned in the past , several authors have touched upon the existence of "brand names" in the business of issuing notes. Klein(1974) was the first in this line and the idea has since been taken up by White(1984) and Rolnick and Weber(1988). The question is whether the public was able ,as a matter of course,to distinguish between the notes put into circulation by different banks and was capable of attributing varying degrees of trustworthiness to each one. Its relevance is that , as Gorton and Mullineaux(1987) have suggested, if paper currencies of different origins are indistinguishable in this way to their users, there is nothing to prevent an individual note producer from overissuing , since the corrective mechanism described by White cannot function in this case .

In Oporto,1860-1890, as apparently in other known instances, brand distinctions must have existed.Overissue was avoided throughout the period and the question which logically follows is whether this was done on a consistent basis and , in the affirmative case, what criteria assisted the public in shaping its preferences in this regard.Of course, if such criteria can be identified and it is shown that they made economic sense , one would further expect the information on which these judgements were founded to be both readily available and free from bias , either in terms of cost or of reliability relative to any bank.

On this last score, the situation in Oporto was reasonably straightforward. By law, banks were obliged to publish detailed annual balance sheets.Apart from publication in the official register, these received extensive publicity and were commented on at length in specialist sections of the daily papers or in the economic press.Those which had the right of issue were also obliged to present a monthly resume of their state of accounts , which again went into the official register.Moreover, in general, banking affairs were constantly scrutinised in the media throughout the year so that, if anything, there was a plethora rather than a scarcity of information in this field. Finally, it should be remembered that there were only six banks of issue in this city to cope with and that consequently the effort expended in monitoring them for the purpose of evaluating their solvability cannot have been enormous.

In seeking to explain the amount of own paper currency which each one of the Oporto issuers was able to <u>keep</u> in circulation at any time, we have used end-of-year balance sheet data for note circulation, as well as for the other bank characteristics which serve in this exercise as explanatory variables.At first sight,there may seem to be some risk of distorting reality in this way but the tests carried out on a sample of these data showed no significant differences relative to the annual means of their monthly figures.The time series of each bank were all pooled together , not only because this increases the information at our disposal but also because it reflects one of the main points we are checking for, namely to establish if the public's attitude towards different banks regarding the notes issued by them was homogeneous.

The model adopted assumes that banks would issue an unlimited quantity of paper money but that the public was prepared to hold only a certain amount of it, both in the aggregate and for each issuer.Anything in excess would be returned and banks would then incur in reserve losses , which would force them to make a downward adjustment of their issue.In equilibrium, the balance of notes of the ith bank desired to be held by the public would depend on a number of factors which plausibly would affect its perceived ability to pay out these notes on sight and in specie, and we have specified this as

$$N_i^d = f(RES, DEP, LOAN, PORT, LONG, COEF, BANK) + e_i$$

Reserves of coin(RES) are the most obvious influence here and one would expect them to be positively linked to the public's willingness to hold paper redeemable at sight.Deposits(DEP), on the other hand,being the other major claim by the public on these reserves should have had the opposite effect on the dependent variable. We have not distinguished here between time and demand deposits because the published statistics often did not do so either and also because, in stipulating reserve requirements ,some bank of issue charters simply refered to deposits in general and did not even bother to consider the difference.(40)

The next four variables we have included relate to the liquidity and riskiness of certain important categories of bank assets, which are clearly relevant information to a concerned and prudent note holder.(41) Discounts and advances (LOAN) were supposedly very liquid and , under proper management ,safe, particularly if they represented ,as they ought to,commercial transactions.One would expect a positive association between them and the public's confidence in a bank, unless any of these assumptions should turn out to be wrong.

Portuguese banks also lent a good deal of their money to the government ,either directly through contracts or indirectly, by means of the acquisition of state bonds.During this period, both were considered safe investments but not all that easy to liquidate , the former obviously because of their fixed maturity periods, the latter because of the "thinness " of the market.(42)Shares in other banks and companies exhibited similar features and, for accounting reasons, we have had to lump them all together (PORT) ,although in terms of risk and of liquidity government liabilities certainly rated higher.In the face of this contradiction,the strength and sign of the relation between this variable and the note circulation are hard to determine a priori.

The last major category of income earning assets (LONG) consisted of that very varied and often not insubstantial direct investment in domestic productive activity and services to which these establishments were heavily inclined.As they were typically long term and, in their riskiness, somewhat akin to present day venture capital applications, one would expect them to have a depressing effect on the image of a note issuer and consequently on its circulation.

Besides their financial structure, banks of issue were probably judged on other grounds too. Although a somewhat diffuse aspect, quality of management would be one of them. This could be quantified by means of dividends, turnover or some other such indicator, but for our particular purpose, we have resorted instead to a measure that would be of interest to note holders as opposed to shareholders.From the former's point of view, the best managed bank was that which refrained from overissuing, or at least tried to do so.The more a bank exceeded the public's desired holding of its notes, in frequency of attempts and in amount, the greater the fluctuations shown in its monthly circulation figures, as a result of the reflux corrective mechanism and the appropriate indicator for this is the coefficient of variation (COEF) presented in an earlier section of this paper. A high value for this index, representing a "rash" or "aggressive" use of its note issuing faculty, should therefore penalize a bank's ability to keep its paper currency in the public's hands, and vice-versa.

In discussing , with regard to Scottish banks, what made note brands visible,White(1984) placed considerable emphasis on factors which promoted confidence ease of redemption, such as number of branch offices, hours of service to clients and quality of premises. In the case of Oporto, none of these items seems relevant. Notes were exchanged only at head office in the city centre and time tables were apparently uniform.White's emphasis on the effect of appearances on confidence may be correct but, in our example, again there was little expenditure on "window dressing" and installations were not impressive.Nonetheless, it seems useful to try and find out if the public, apart from its appreciation of the "fundamentals" described in the preceding paragraphs , also attached any importance to the name of the issuing institutions and to all that could be connected with it.The dummy variable (BANK) which associates each set of observations in our data pool with the bank to which they refer is used to test for the existence of such a relationship.

The results of the ordinary least squares regression carried is as follows:

$$\ln(NOTES)=1.48+0.64\ln(RES)-0.20\ln(DEP)+0.02\ln(LOAN)+$$
$$\quad (1.81) \quad (5.03) \quad (-1.66) \quad (0.26)$$

$$+0.15\ln(PORT)+0.14\ln(LONG)-3.27\ COEF+0.03\ BANK$$
$$(1.98) \quad (3.32) \quad (-14.9) \quad (0.69)$$

R2=0.73 D.W.=1.90 F-statistic=44.9 N=115

(t-statistics are in brackets)

They suggest quite strongly that the demand for the Oporto banks' notes was well identified and that the public's attitude towards them was clearly consistent over time and over the range of issuers.The lack of significance of the coefficient for the dummy variable BANK indicates moreover that the public was "realistic" and only paid attention to each bank 's financial and management performance. Either it chose to ignore any reputational elements which might have been present or these differences were in fact slender , something which may be attributed at least in part to their having been founded roughly at the same time and having the same size.As expected ,cash reserves (RES) were important in encouraging the acceptance of a bank's notes while deposits (DEP) had the opposite effect,although it is possible to reject the hypothesis that this coefficient was different from zero at the ...% level.The presumed inclination of economic agents to shun the notes of issuers which were prone to overissuing can be seen from the negative sign and high t-statistic for the variable COEF.

There are surprising reactions, on the other hand, to the asset structure of these establishments.Short term credits (LOAN) , although they have the expected positive sign do not appear as significant, while long term loans (LONG) and government debt and company shares(PORT) had a positive effect on the amount of notes in circulation. Regarding bills and advances, the explanation could be that the note holding public was not convinced that these assets were what they were supposed to be, and they may indeed have had good reason for this. Much of the discounting in Oporto was done with bills of more than three months, which arose in the port wine trade and thus the high liquidity presumption may have been violated to a considerable extent.Their charters,in fact, explicitly allowed them to lend in this way on up to twelve months paper. The fact that larger holdings of bonds and shares stimulated the acceptance of a bank of issue's paper money is perhaps accounted for by the confidence with which the first of these assets was viewed, even if they were of slow liquidation and the latter were not always very solid.After all, Portuguese rentes were reputedly the bourgeoisie's preferred means of accumulating savings and for the 40 years before 1891, the State was ever punctilious in meeting its obligations in this respect.(43)

Finally,there is no obvious explanation for the role played by long term credits in the determination of the demand for notes. This was often an obscure balance sheet category and managements did not provide much detail concerning its real contents. One author called it "a sort of store room where banks put away all the accounts they do not want to publicize"(Lumbralles,1925).It could be that the industrial or other firms which benefitted from these loans and were therefore beholden to their bankers were thereby induced to help in taking and circulating their notes.We have no corroborating evidence for this but if it were true , it would be equivalent, for the Oporto banks, to the part played in Lisbon, vis-a-vis the Bank of Portugal, by the non-issuing banks which held its notes as reserves.

V

This paper points to a number of conclusions which are in line with those of most of the literature on the competitive issue of paper currency under convertibility. It shows ,for one thing, that a set of rules can be devised which both ensures stability and that overissue is checked automatically.Hitherto, this point has been made on the basis of evidence derived from economies like the Scottish one, which had already a considerable degree of financial maturity.What makes these new findings interesting therefore is that the same result should emerge at the other end of the spectrum of sophistication, in a country with a low ratio of financial assets to GNP and with a predominantly metallic stock of money.

In the second place, the data taken from Portugal's monetary history in the 1860-1890 period reveals no superiority for the monopoly of issue over competitive arrangements.This is true as regards both the amount of paper the public is willing to take and the saving in specie which is achieved by replacing it with notes. Neither of the two systems was particularly successful in winning the public's confidence in this "new" medium of exchange, but then neither was the Portuguese banking sector at large much good at persuading economic agents to relinquish the use of coin and adopt scriptural money.Why specie reigned absolute and uncontested in Portugal until so late and until it was driven out by the crisis of 1891 is the subject for another paper but cannot be demonstrably ascribed as a shortcoming of the system of plural competitive issue.

The search for traces of a natural monopoly in the production of convertible paper money in the Oporto setting proved fruitless,something which echoes the general drift of recent writing on the subject. Portugal thus appears as just one more on the list of countries that did not freely evolve towards the monopoly situation which later came to be regarded as natural or unavoidable, but was propelled in this direction by political choice. In the meantime , the users of bank notes which were faced with a choice of "brands" behaved in a consistent manner and seem to have based their preferences on fairly sound criteria for evaluating the ability of each issuer to redeem "inside" money with specie. To end,one cannot help wondering whether the good fit of the model and the good behaviour of its explanatory variables is due to the unusual conditions in Oporto,i.e.note users who were only few in number, prosperous and financially sophisticated.An answer in the affirmative is tempting but must really wait until we have further analyses of the demand for notes under competition in other countries.

$$$$$$$$$$$$$$$$$$$

FOOTNOTES

[1]White,1990,p.191.
[2]Recent studies of European cases are E.N.White (1990),Jonung (...) and Garcia Ruiz(...).
[3]It has been asserted more than once , on the basis of the evolution of the number of banks of issue present in the market that there is no natural monopoly but in the cases which have been examined, no measure has been given of the trend over time of the degree of concentration of this sector.For examples of this topic, see Vaubel (1984), King(1983) and White and Selgin(1987).(check)

[4]Rolnick and Weber(1988).As far as I know , this is the only paper in the literature on American free banks to address the demand side of the problem of issuing money competitively.
[5]Bordo(1986),p.401.
[6]The publication of balance sheets and accounts was a legal obligation which in earlier banks was inserted in their charters and which , under the 1867 joint stock company legislation became a blanket requirement . Standardization of balance sheets only came into force , however, after 1894.
[7] This group includes France from 1817 to 1848 and Spain from 1856 to 1874. While Germany probably also fits into it , it is more difficult to know whether Italy qualifies ,given that convertibility was the rule there for such short periods of time during the 19th century.

[8]This privilege was originally granted until 1876 and was confirmed and extended,in 1874, for another fifty years .See Legislaçao Propria(1946),vol.II,pp.210 and 435.
[9]Legislacao Propria(1946),vol.II,p.353. This is article 7 of the law of 6 June 1857 confirming and further specifying the provisions of the Bank's charter originally laid down in the decree of 19 November 1846 which established it as successor to the bankrupt Banco de Lisboa and the Companhia Confianca Nacional.
[10] Freitas Fortuna (1877).
[11]These rules were included in the statutes of each bank, a collection of which is published in Ferreira(1970).At the request of the Bank of Portugal, the government issued an order in 1867 stating that in spite of the liberal rules governing the creation of new banks under the law of 1867, the authorization to issue notes continued to be necessary for any new establishment seeking this right.
[12] For the iconography of these notes, see Souza e Silva(1985).
[13]Pinheiro e Silva(1877),p.24.
[14]Justino(1990),p.402.
[15]Ibid.,p.761.
[16]Ramos (1988),p.1115. These rates are for persons over the age of seven.
[17]Rodrigues de Freitas (1876),p.92. Even Oliveira Martins, who believed that in general free banking led to overissuing during phases of prosperity, had to recognize that in this instance this could not be said to have happened.
[18]Naturally,these events sparked off a vigorous controversy and a cnsiderable number of publications .Subsequently, this became the prime ammunition of the champions of free banking, who pointed out that every time there had been a major crisis -1846 and 1876 - the monopoly bank had had to be bailed out by the government.See Rodrigues de Freitas(1876),p.92 and Faria e Maia(1887),p.67.
[19] See Reis(1991).
[20] White(1984) and Gorton(1985).The latter points out panics with free banks originated in the withdrawal of deposits caused by the fears of depositors , who knew that while notes might have a secondary market and sell at a discount, deposits had none. In the case we are examining, this does not arise because the small scale of the banking sector applies to deposits as much as to notes. Therefore, well informed depositors could limit the excesses of banks through their withdrawals , so that panics did not arise.
21 Banco Mercantil Portuense,Relatorio da Gerencia e Parecer do Conselho Fiscal Relativo ao Ano de 1885 (1886),p.7
[22]Rockoff(1975).
[23]Pinto Coelho(1875),p.54.Alexandre de Herculano, the great nineteenth century Portuguese polemicist,historian and writer, believed the same when he wrote , in 1877, to his friend Oliveira Martins, a champion of monopoly:"who will correct mistakes, exageration and falsity? Public

confidence or the lack of it. And that is sufficient, so let the bank note be free."Herculano(n/d),vol.I,p.242.

[24]Oliveira Martins(1877),p.67;Pinheiro e Silva(1877),pp.26-28;Freitas Fortuna(1877),p.32.

[25]For detailed monetary statistics, see Reis(1991). On the rate of interest argument, see Oliveira Martins(1877),p.60;and Serzedelo(1867),p.121.

[26]These arguments are reviewed in King(1983),pp.132-139. It is interesting that Oliveira Martins(1877),p.41 rehearses a very similar list.

[27] King(1983),p.133.

[28]"Report on the Trade and Commerce of Portugal for the Year 1893",Parliamentary Papers.Accounts and Papers.1894 n.1483,p.6.

[29]Freitas Fortuna(1877),pp.35 and 47.

[30]See, for example, Freitas Fortuna(1877),p.58;Faria e Maia(1887),p.29;Castro(1873),p.129.

[31]This was not the case at the time of the Bank's creation in the late 1840s, when there was much depreciated paper money in circulation and it was the government's policy to try and "soak it up", something which had been achieved already by the late 1850s.

[32]Selgin and White(1987),p.448.

[33]White(1984)

[34]Checkland(1975),pp.337 and 340.

[35]Vaubel(1984) citing Balstenberger(1972).

[36]The statistics for the period 1858-1892 have been compiled as Estatistica Bancaria (1894).

[37] King(1983),p.133.

[38] Faria e Maia(1887),pp.155-158;Cordeiro(1873),p.262;Rodrigues de Freitas(1864),p.18.

[39] Oliveira Martins(1883,2nd edition),p.40.

[40] P.47.

[41] Friedman and Schwartz(1967) argued to the same effect regarding deposits in the US, in the 19th century.

[42] Recent work by Economopoulos(1990) has stressed the importance of the asset and liability structures of US free banks in accounting for their chances of survival but this information has not been used to explain the demand for their notes.

[43]The theme runs strongly through 19th century Portuguese fiction, particularly the novels of Eca de Queiroz.The situation changed sharply after the partial suspension of payments by the Portuguese state in 1892 and a former finance minister,Fuschini ,later referring to the high real interest but unreliability of these bonds, quipped that"with the Portuguese funds, one dines well but one sleeps uneasily."Quoted in Valerio(...)