What Do We Really Know about the Long-Term Evolution of Central Banking?

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Abstract: This paper surveys the evolution of central banking by taking a functional, instead of an institutional approach. It covers the provision of both microeconomic (financial stability) and macroeconomic (monetary stability) central banking functions in the West since the Middle Ages. The existence of a number of trends as well as the importance of political economy are underlined. The findings have implications for the current debate on the institutional design of central banking. Being the outcome of collective bargaining, monetary authorities must sit on a credible institutional equilibrium with fiscal authorities. This equilibrium, however, does not necessarily coincide with central bank independence.


Keywords: Central banking, monetary policy, financial stability, institutional design.

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For nearly three decades to 2007, central banking around the world has experienced increasing convergence – both in the concept (Siklos 2002) and in the practice of it (Bindseil 2004). The series of financial shocks which has taken place since, however, has shaken central bankers’ certainties about their own mission (see e.g. Davies and Green 2010). Any attempt at rethinking this mission would greatly benefit from a non-finalistic survey of the long-term evolution of central banking, showing how problems like the ones we are now facing have been dealt with in the past. Yet such a survey is still missing to date, as ‘teleological’ accounts largely prevail in the literature.

This paper aims at filling this gap by adopting a functional (instead of an institutional) approach. This novel approach allows to shed new light on many aspects of the history of central banking, and in particular on the question of the institutional design of money-issuing organizations and their relationship with the political power. This is a particularly topical issue these days: at a time when central banks face mounting criticism from political bodies concerning both their tasks and policies, history allows for looking at current problems from a different perspective – and hence, hopefully, for inspiring new solutions.

The remainder is organized as follows. Section 1 discusses methodological issues concerning the study of central banking in the long term. Sections 2 and 3 review the state of research concerning the provision of (respectively) financial and monetary stability in history. Section 4 concludes.

Section 1: Methodological Issues

1.1: Central Banking: Definitional Issues

To date, those willing to learn about the history of central banking are confronted with an inconvenient truth: basically all of the available literature does not actually deal with the evolution of central banking, but rather with the evolution of central banks. At first sight, the difference between the two might look exceedingly subtle: to modern observers, central banking is merely what central banks do. As one tries to look into more detail, however, the
question reveals itself more complicated. Do all central banks do the same things? and does one central bank always do the same things over its lifetime? The answer to both questions is negative: from both a cross-sectional and a chronological perspective, a consensual definition (or philosophically speaking, a ‘universal’) of central bank does not exist in practice (see section 1.2). As a consequence, saying that ‘central banking is what central banks do’ inevitably leads to define a multiplicity of entities (like e.g. ‘1870 British central banking’ or ‘1990 Japanese central banking’) which are hardly useful as analytical tools. This suggests that reasoning should go the other way round: instead of defining central banking as the bundle of properties characterising a central bank in a given particular setting, we should rather define a central bank as the agent which instantiates some of the properties of central banking in that particular setting. The remainder of section 1 will explain why this considerable departure from the current approach is necessary in order to get a more rigorous analytical framework for understanding the long-term evolution of central banking. Sections 1.2 and 1.3 will enumerate the difficulties arising when one tries to define properties from some of the heterogeneous agents which do instantiate them – i.e., if one adopts what Merton (1995) calls an institutional approach. By contrast, section 1.4 will show the advantages of first focusing on properties and only subsequently looking for the agents which do instantiate them – i.e., of taking a functional approach. Section 1.5 will eventually cope with sampling issues under the two approaches.

1.2: The Institutional Approach: What Is a Central Bank?

As we have already pointed out, basically all of the available accounts of the long-term evolution of central banks adopt (more or less consciously) an institutional approach to the issue\(^1\). The institutional approach takes central banks as given entities and looks at what they do over time. But what is a central bank? Even today, the word ‘central bank’ is used to describe institutions which widely differ in structure and practice, so that ‘in truth, no two central banks are identical’ (Singleton 2011, p. 9). Going back in time, the question gets considerably more complicated. When did central banks appear? Linguistic evidence is of

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\(^1\) A remarkable exception consists of those pages in Goodhart (1988, pp. 31-43) which deal with the emergence of central banking functions within free-banking systems – thus taking, de facto, a functional approach. Another interesting one is Taus (1943), which focuses on the central banking functions of the U.S. Treasury.
very little help in order to answer this question: when the term ‘central bank’ started to be used in the early 19th century, it was originally employed to designate the headquarters of a multi-branched bank (see e.g. Joplin 1837, pp. 22 and 38); only some decades later was it applied, by extension, to describe the position of the Bank of England (see e.g. Gilbart 1865, pp. 557-70). Hence, the lack of a ‘universal’ of central bank really is a problem to institutional historians. Some have proposed to take, as a proxy, a theoretical construct which seems to have played as a benchmark historically – viz., Walter Bagehot’s popular work Lombard Street, recognized as ‘orthodoxy’ in Britain by the end of the 19th century (Fetter 1965). The idea is well synthesized by Grossman’s (2010a, pp. 42-4) claim that before the late 19th century central banks did not exist as ‘there was no accepted concept of a central bank’, and that only thanks to Bagehot (1873) ‘the modern concept of central bank began to gain widespread acceptance’. Such a strategy, however, is prone to criticism under at least two respects. First, Lombard Street does not lend itself much to such an operation because – as suggested by its subtitle (A Description of the Money Market) – it is much more of a positive than a normative work. In fact, Bagehot merely describes what the Bank of England had already been doing during recent financial crises (Bignon et al. 2012), and basically recommends the Bank to continue that way in the future: no reference whatsoever is given to the applicability of such recommendations to other contexts than mid-19th-century Britain.

Second, Bagehot’s account is overwhelmingly focused on the question of lending of last resort: while 21st-century central bankers would certainly agree that the latter is one of the tasks of modern central banking, they would probably hesitate to indicate it as the defining one (see section 1.4). As a result, Lombard Street can provide no good proxy for the ‘universal’ of central bank institutional historians are in need of.

All of the above-mentioned difficulties have led most scholars to give up rigorous definitional efforts. In their institutional survey of the history of central banks, Capie et al.

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2 It is interesting to note that even Bagehot makes use of the word ‘central bank’ only twice in Lombard Street – and in both cases, with reference to the headquarters of a multi-branch bank, not to a bank of issue (Bagehot 1873, pp. 57 and 88-89). The term definitively became current with the publication of the extensive enquiries by the National Monetary Commission for the creation of the Federal Reserve System – to which, once more, the geographical dimension was particularly crucial.

3 This idea is extensively enunciated by Capie (2002). Also see Siklos (2002, p. 10) and Davies and Green (2010, p. 11).

4 This is confirmed by the fact that the explicit purpose of Lombard Street is to suggest second-best remedies to the dysfunctionality created by the action of the government in the money market, to which the emergence of a central bank is a consequence. In the absolute, Bagehot’s preferences would not be for a system where a central bank exists, but rather for a free-banking system (Bagehot 1873, pp. 101-110).
(1994, p. 5) admit that the task is problematic and conclude: ‘in one sense, we recognize it when we see it’. Still, how do they recognize it? To do so, institutional historians have to construct – more or less consciously – their own definition of central bank: which means that they have to ‘universalize’ the features of one particular central bank they have actively selected – according to their own personal preferences – among a bunch of heterogeneous ones. The result is that very different accounts of the evolution of central banks can be dressed according to the writer’s own preferences. For instance, Goodhart’s (1988) influential account revolves around the microeconomic aspects of central banking and only incidentally mentions the macroeconomic ones, while the opposite is the case with Giannini (2011). As long as only relatively recent periods are concerned (19th-20th centuries), alternative accounts like Goodhart’s and Giannini’s may still be seen as compatible and can reasonably well coexist. When one moves a little further back in time, however, differently-founded institutional investigations end up providing incompatible accounts which cannot be admitted to coexist. This is proved by an ongoing dispute about the origins of modern central banks, which will be illustrated in the next section.

1.3: Shortcomings of the Institutional Approach: Where Do Central Banks Come from?

Concerning the question of where should we look for the precursors of modern central banks, two inconsistent positions have emerged from the institutional literature. On the one hand, those who think that the most important feature of a modern central bank is the provision of liquidity have maintained that its true precursor is represented by early banks of issue: along this line of reasoning, many scholars have bought the (fundamentally Darwinist) argument that the Bank of England – in its capacity as most successful early bank of issue – has naturally been the model from which every other central bank in the world has constantly drawn inspiration (see e.g. Goodhart 1988; Capie et al. 1994; Wood 2005). On the other

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5 The view is well illustrated by Goodhart (1988, p. 104), who argues that the solution to the problems endogenously arising within banking systems ‘occurred naturally in England’ with the evolution of the Bank of England into a modern central bank, and that ‘this model was widely seen as so attractive that it was copied in virtually all other major countries’. However, this Anglo-centric view – already disapproved of by U.S. observers at the time of the foundation of the Fed (National Monetary Commission 1912, p. 5) – needs serious scrutiny. True, especially during the interwar period, English central banking has often been presented as ‘best practice’ – also thanks to the ‘almost missionary fervour’ displayed by British officials like Otto Niemeyer (Capie et al. 1994, p. 21), whose aim was to create the necessary international infrastructure for the working of a
hand, those who think that the most important feature of a modern central bank is the provision of a stable means of payment have maintained that its true precursor is represented by giro banks: according to this view, the primacy of central banking should not be assigned to the Bank of England, but to Amsterdam’s Wisselbank (see e.g. Kindleberger 1991; Schnabel and Shin 2006; Quinn and Roberds 2007).

The disagreement between the supporters of the British primacy in central banking and those of the Dutch one has its roots in the 18th-century dispute between proponents of banks of issue and proponents of giro banks (Gillard 2004). It even has a fallout at the etymological level, which concerns the origin of the word ‘bank’ in English. According to the traditional interpretation, ‘bank’ would derive from the Italian equivalent for ‘bench’, meaning the counter over which medieval moneychangers used to deal their transactions: this would be consistent with the idea that central banks were created to manage the payments system. This interpretation, however, is questioned by some, according to whom ‘bank’ would rather derive from the Germanic equivalent for ‘cliff’, meaning the amount (the joint stock) of public debt handled by the institution – which would correspond to the Italian word ‘monte’ rather than ‘banco’ (Conant 1909, pp. 8-9): this would be consistent with the idea that central banks were created to manage the provision of liquidity to the state.

For all of its relevance, this debate perfectly illustrates the limits of an institutional approach to the evolution of central banks. Actually, both positions in the debate suffer from the same major drawback: they fail to recognize that banks of issue and giro banks differed in the organizational model they embodied, but not in the functions they performed. As a matter of fact, both banks of issue and giro banks used to provide, at one time, both liquidity and a stable means of payment. This is illustrated by figure 1, which is a styled representation of the balance sheet of these two kinds of organizations. What really marked the difference between the two types of banks was the institutional arrangement that presided over their creation and perpetuation.

6 Incidentally, the latter interpretation seems to be backed by the fact that, up to the late 19th century, private bankers used to be called ‘merchants’ in London, while the word ‘bankers’ only applied to the directors of joint-stock banks.

7 See sections 2.1 and 3.1 for more details.

only consisted of deposits, and they could only purchase assets against reserves (i.e. by diminishing the coverage ratio). This explains why giro banks used to be state-controlled companies: in practice, the state kept for itself a given privilege (i.e. the monopoly of some kind of financial operations), and assumed full responsibility for it – both for its benefits (profits, and the possibility of monetizing deficits) and for its costs (eventual losses). This also explains why this organizational form – which was particularly prone to abuses – was only adopted in city states, where control of moneyed interests over the political power was very strong. On the contrary, banks of issue were founded with a substantial capital endowment, originally destined to fund the sovereign debt: their liabilities consisted of deposits and capital, and they could purchase assets against either reserves or capital. This explains why banks of issue used to be privately-owned companies: in practice, the state signed a derivative contract with a group of private stakeholders, according to which the benefits and costs of a given privilege were swapped against the funding of a certain amount of long-term sovereign debt. This also explains why this organizational form – which was more resilient to abuses – was rather adopted in monarchical states, where the relationship between moneyed interests and the political power was not as osmotic as in city states.

Once acknowledged that the difference between giro banks and banks of issue was merely organizational (and not at all functional), the limits of an institutional approach to central banking will be clear. As it obliges historians to look for the ‘true essence’ of a central bank (be it the provision of liquidity or of a stable means of payment), the institutional approach obfuscates the fact that central banking can well be performed by organizations which do not structurally resemble modern central banks. This suggests that a different strategy is needed in order to really improve our understanding of the questions at issue.

Figure 1: Stylized balance sheets of a giro bank (left) and of a bank of issue (right).

\textsuperscript{9} In alternative, in case they had not paid dividends to the state over time, giro banks could purchase assets against retained earnings.
1.4: The Functional Approach: What Are Central Banking Functions?

Following Merton (1995), this paper proposes to adopt a functional approach to the study of the evolution of central banking: this means taking central banking functions as given and looking at which organizational structures allow for their performance in any chronological setting. The functional approach is methodologically superior because it allows to define which agent instantiates the properties of central banking without arbitrarily imposing axiological evaluations: while under the institutional approach categorization is conditional to subjective components (the observer’s preferences regarding the staple central bank), this is not the case under the functional one. The reason is that an established and consensual view of what central banking functions are does actually exist.

Sure, the issue is not fully uncontroversial. Singleton (2011, pp. 4-11) reports the lists of central banking functions which can be found in the literature: some feature five, some seven, some eight, some even ten (plus) elements. Yet, not all of the functions which have been proposed are equally rigorously defined: many of them are actually redundant, either because are tailored to some peculiar 20th-century condition that did not exist in other settings\(^\text{10}\), or because they can be easily seen as ascribable to another, more general, function\(^\text{11}\). Therefore some pruning is desirable, as redundancy gives scope for inconclusive discussions about which functions are core and which ones are peripheral – as Singleton (2011, pp. 10-11) himself does recognize. This suggests not losing sight with the ‘basics’. Nowadays, central bankers agree in acknowledging that they are entrusted with two main (possibly conflicting) duties: providing both financial stability and monetary stability (see e.g. Issing 2003). This is a long-established conventional interpretation (see e.g. Aldrich 1910, pp. 17-21). The two tasks correspond to what are consensually called – respectively – the ‘micro’ and ‘macro’ functions of central banking: the former include the issue of money and the conduct of monetary policy, while the latter include the working of the payments system, lending of last

\(^{10}\) For instance, this is the case of Singleton’s (2011, pp. 8-9) function number 9 (“participating in cooperative international agreements”). As a matter of fact, central bank cooperation did not exist before the 20th century (Flandreau 1997).

\(^{11}\) For instance, this is the case of Singleton’s (2011, pp. 5-8) functions number 2 (“implementing monetary policy”) and 6 (“managing foreign reserves and exchange rate targets”), which can be seen as two different facets of the same phenomenon.
resort, and banking supervision (see e.g. Goodhart 1988, pp. 5-7). As sections 2 and 3 will recall, the need for some kind of organization to play such functions has almost constantly been experienced in sufficiently advanced financial systems, and different solutions have been adopted across time and space with the aim of meeting this need.

1.5: The Functional Approach: Sampling

From what precedes, it will be evident that switching from an institutional to a functional perspective on central banking considerably broadens the scope of historical investigation. To date, general enquiries (e.g. Capie et al. 1994) have only covered banks of issue still existing today or their strictly immediate predecessors (e.g. the Preussische Bank and the Reichsbank as forerunners of the Bundesbank), while they have almost ignored other organizations that might have provided analogous functions in the past: this makes them suffer dramatically from the survivor bias. On the contrary, the functional approach is not subject to this sampling problem, as it allows for covering also those organizations which did (at some time) provide central banking functions, but did not evolve into modern central banks. These include: 1) banks that evolved into pure commercial banks (e.g. the Bank of Ireland, the National Bank of Greece, Belgium’s Société Générale, Italy’s Banco di Napoli and Banco di Sicilia, or Switzerland’s cantonal banks); 2) banks that were liquidated, either because of the disappearance of the polities to which they were inextricably tied (e.g. Genoa’s Banco di San Giorgio, Venice’s Banco del Giro, Amsterdam’s Wisselbank, or the Hamburger Bank), or because of some domestic political discontinuity (e.g. Austria’s Wiener Stadtbank, Denmark’s Kurfürstenbanken, Spain’s Banco de San Carlos, or the First and the Second Bank of the United States); 3) non-banks, and especially government departments (e.g. Venice’s Grain Office, or the pre-Fed United States Treasury).

All this makes the sampling of the organizations providing central banking functions a daunting task given the current state of the literature. In what follows, a survey of secondary sources is implemented with the aim of establishing the bases of a general interpretative framework – without, of course, any ambition to completeness. The coverage is limited to the Western world from the Middle Ages to nowadays. This restriction is certainly not due to the fact that societies located in other times and spaces lacked outstanding examples of organizations providing central banking functions (the grand architecture of the Chinese
payments system over the centuries being just one case in point); rather, it is due to the limits of the author’s knowledge on the subject.

Section 2: Financial Stability in History

2.1: The Payments System

In any sufficiently advanced financial system, the need for the centralization of interbank transactions naturally arises. According to the classical proponents of free banking, this demand can be adequately met by the setting up of a clearinghouse: through a transparent clearing mechanism, commercial banks can monitor each other and thus prevent competitors from expanding too much their liabilities (Smith 1936). Opponents of free banking are sceptical about the resilience of such an arrangement: as a matter of fact, in a pure clearinghouse system the growth of banks’ liabilities cannot be restrained from spiralling as long as all participants expand them together at a broadly similar rate. Moreover, scope economies often lead to a single bank dominating the clearing process – or differently said, the clearing process tends to be a natural monopoly. Conflicts of interest, however, will prevent a self-interested commercial bank from playing this role appropriately enough. All this makes the establishment of a non-profit-maximizing central bank preferable to a pure clearinghouse system in order to insure the stability of the payments system (Goodhart 1988).

This debate is a very old one, as it has been around since at least the 14th century. Contrary to what is generally believed, fractional reserve banking already used to be widespread in the Middle Ages (De Roover 1974); as a result, confidence crises periodically engendered runs à la Diamond and Dybvig (1983), which threatened the overall stability of the banking system. In 14th-century Venice, where a modern clearing system had long been in operation, the frequent occurrence of such episodes suggested to some that the clearinghouse system was not adequate enough to prevent excessive expansion of liabilities by private banks. In order to improve the resilience of the domestic payments system and to avoid the occurrence of further losses by depositors, two reform bills were presented to the Venetian Senate (in 1356 and 1374 respectively). Both proposals concerned the creation of a bank under the control of the
Republic: backed by a one-hundred-percent reserve, deposits at the bank would be state-guaranteed and transferable to other accounts, but not interest-bearing. While the first project assumed deposit insurance to be a sufficient incentive for the public to take their deposits to the bank, the second one was aware of the limits of this assumption: accordingly, it asked for the establishment of a monopoly of deposit banking (Mueller 1997). Such proposals were repeatedly rejected, on the grounds that the state should not have meddled with operations (viz. money management and trade) that did not fall beneath its competences (Tucci 1991) – once again, a very frequently recurring argument in monetary debates over the centuries. Yet the Venetian banking system continued to be prone to frequent crises; only as late as 1587, when the system came close to a general meltdown, did the Senate eventually adopt a plan for the creation of a state-backed giro bank, the Banco della Piazza di Rialto, which held the monopoly of the encashment of bills of exchange (Luzzatto 1934).

The Venetian debate nicely illustrates the problems inhering the working and resilience of a centralized payments systems. On the one hand, entrusting the management of the payments system to a non-profit-maximizing organization (i.e. an independent arbiter) may well be a remedy to the private clearinghouse’s inability of checking the expansion of banks’ liabilities (due to the fragility of cooperative equilibria between self-interested agents). On the other hand, though, the non-profit-maximizing organization can easily fail to play a role as centralized clearinghouse if the incentives structure is not adequately designed within the banking system: to put it differently, even if the clearing process tends to be a natural monopoly, it needs not necessarily be located where political authorities would like it to be. This risk has been frequently experienced by early banks. For instance, Barcelona’s Taula de Camvis (established in 1401) had not been granted the domestic monopoly of deposit banking: as a result, the bank heavily suffered from the competition of private deposit collectors, which it tried to address by authorizing its customers to overdraft (an operation it was formally prevented from allowing: Usher 1943). The solutions adopted over time in order to fix this problem rest on the effects of i) legal restrictions, ii) scope economies, or iii) a blend of the two.

i) An outstanding example of solutions based on legal restrictions is provided by giro banks (Venice’s Banco della Piazza di Rialto, Amsterdam’s Wisselbank, or the Hamburger Bank), which were granted the monopoly of the encashment of bills of exchange above a given threshold sum. This arrangement had a twofold implication. Not only did this oblige big transactions to be cleared through the centralized system; what is more, it did act as a
supervisory device bound to enhance the quality of the bill market – as bills accepted by the ‘central’ bank bore no credit risk (Gillard 2004). In the absence of such a device, this role ended up being played by reputed private agents (De Roover 1974), who eventually evolved into specialized acceptance houses (Flandreau and Ugolini 2013).

ii) Solutions based on scope economies, instead, have built on the state’s role as the biggest actor within the financial system in order to attract all transactions on the same platform – viz. the one on which the state itself was operating. As a matter of fact, the volume of the state’s business may be so substantial that a unified Treasury cashier may become the centre of the domestic banking system\(^2\). This was the case, for instance, in 16\(^{th}\)-century Tuscany, where the Grand Duke’s choice of concentrating all his transactions at the Ricci bank transformed the latter into the leading actor of the Florentine money market (Cipolla 1987). Once more, the Venetian experience on the subject is very instructive. From 1619 to 1637, two public banks were operating in Venice: the Banco della Piazza di Rialto (meant to centralize the clearing of interbank transactions) and the Banco del Giro (meant to centralize the clearing of government transactions). In fact, scope economies quickly induced private banks to participate into one clearinghouse only, and the one in which the state was operating was preferred: as a result, the Banco della Piazza was soon outcompeted, and eventually liquidated (Luzzatto 1934).

iii) Finally, the centralization of interbank clearing to an agreed organization has also been sought through a combination of legal restrictions and scope economies. The English case is illustrative of this strategy. At the time of its foundation, the Bank of England was not granted the monopoly of the encashment of bills or deposit collection; yet, it did get the monopoly of both joint-stock banking and banknote issue in London (Clapham 1944). Together with its role as state cashier (Bagehot 1873), these privileges made the Bank the one large banking company operating in the capital city. But there is more: unlike any other European country, in the 18\(^{th}\) century England required all her foreign transactions to be cleared in London (De Roover 1974; Flandreau et al. 2009). Being the only big bank in the Kingdom’s only financial centre, the Bank of England easily emerged as the country’s clearinghouse – which, as Thornton (1802) recognized, constituted the cornerstone of its power.

\(^2\) This argument is also found in chapter IV of Lombard Street, where the centralized structure of the British money market is explicitly connected to the government’s choice of concentrating all its deposits with the Bank of England (Bagehot 1873). Also see Goodhart (1988, p. 35).
In the course of the 19th century, central banks tried to reinforce their position at the centre of national banking systems by expanding their operations into the provinces. The Bank of England’s branching outside London, seen as a competitive threat by country bankers, came to a stalemate after the passing of Peel’s Act in 1844 (Ziegler 1990). On the contrary, Continental central banks managed to establish dense branch networks throughout their respective countries, thus providing the infrastructure for the emergence of national monetary systems (Jobst 2010; Ugolini forthcoming). These networks started to be demised in the 20th century, when they were made redundant by the merging process of nationwide-branched commercial banks.

2.2: Lending of Last Resort and Banking Supervision

Misunderstandings have been spread across the literature on central banking by the lack of a clear-cut definition of lending of last resort. As a matter of fact, many scholars have interpreted lending of last resort as a synonym to bailout: this is the case, for instance, with Buyst and Maes (2008), who argue that the Banque Nationale de Belgique did not act as a lender of last resort in the 19th century because it did not participate into rescue operations of troubled banks. Yet lifeboat arrangements are a completely different thing than Bagehot-style lending of last resort13. Bailouts of insolvent but systemically important banks have long been organized by political authorities without any direct involvement of monetary authorities: they can be traced back to at least the 1490s, when the Venetian Senate proposed to levy an extraordinary tax in order to fund the bailout of the troubled clearing banks of Rialto (Tucci 1991). By contrast, Bagehot-style lending of last resort actually is a typical task for monetary authorities: its aim is not to eliminate bankruptcies of insolvent banks, but to avoid the drying-up of liquidity in the money market.

As financial crises have uninterruptedly occurred before and after the adoption of lending-of-last-resort policies, testing their implementation may not be straightforward. Someone has taken as a proxy the profits made from discount operations, to conclude that such policies already were a fact of life as early as in the 18th century (Lovell 1957). However, lending of last resort does not mean lending more (even if countercyclically): rather, it means lending as

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13 Suffice it to quote Bagehot himself: ‘The cardinal maxim is, that any aid to a present bad Bank is the surest mode of preventing the establishment of a future good Bank’ (Bagehot 1873, p. 104).
much as the banking system demands on given eligible assets. As a result, the proper measure of lending of last resort consists of the spread between the interbank interest rate and the discount rate of the central bank’s standing facility – which provides a test of credit rationing. Performing this test leads to conclude that the defining moment for the appearance of lending of last resort (both in Britain and elsewhere) was the crisis of 1857 (Bignon et al. 2012). Two preconditions made lending of last resort a viable option. i) The first one was the establishment of the central bank at the core of the payments system, which entailed the possibility to meet a contraction of interbank credit with an expansion of central bank money. ii) The second one was the repeal of usury ceilings on interest rates, which entailed the possibility to increase the commercial banks’ opportunity cost of hoarding cash – and hence, to set the right incentives for the whole money market. Once these two preconditions were met, central banks started to practise lending of last resort in an extensive way and thus eliminated the occurrence of credit rationing in their economies; in so doing, they also provided the basis for a wider internationalization of the currency they issued (Flandreau and Ugolini 2013).

Closely related to lending of last resort is banking supervision. The link between the two may not appear self-evident, as the latter is a task that has not always been entrusted to central banks or their likes. In some contexts – e.g. in the United States, or in Scandinavia – supervision has most often been performed by political rather than monetary authorities; in others – e.g. in Italy, or in Spain – it has always remained one of the leading functions of the central bank (Grossman 2010b). In the latest decades, however, a number of countries in which supervision had traditionally been with the central bank – e.g. Britain, or Germany – handed it over to other agencies, in accordance with the so-called ‘unified supervisor’ model. The manifestly poor performance of unified supervisory agencies in the build-up to the recent crisis, however, has strengthened the idea that banking supervision is in fact a built-in function of central banking (Goodhart 2009). There are at least two dimensions along which the latter idea finds validation in the past. First, as already pointed out, central banks’ action in the clearing of interbank payments has allowed them to monitor the overall expansion of commercial banks’ liabilities (Goodhart 1988). Second (and perhaps more important), central banks’ de facto monopoly of crisis-time lending (and the credible threat of exclusion from it) has provided them with a powerful instrument for enforcing the adoption of banking practices deemed as desirable (Flandreau and Ugolini 2013). How much effective these informal types of supervision have actually proven over time, is still something to be assessed by historical
research. Nevertheless, their existence confirms that banking supervision is inextricably connected with the other two microeconomic central banking functions, and that it can be performed regardless of the regulatory arrangements in force.

The latest decades have generally seen the detachment of central bankers not only from banking supervision, but also from banking regulation. This has been tied to the fact that in recent years, the debate on banking regulation has mostly focused on the question of capital requirements – as embodied by the Basel agreements. This is a considerable departure from the way banking regulation has been dealt with in the past: as a matter of fact, the strategy for reducing excessive risk-taking in the banking system has traditionally been identified not with the enforcement of capital requirements, but with the enforcement of reserve requirements. In a sense, private bankers’ ‘forced’ deposits with giro banks (a necessary condition for having the faculty of drawing bills) may already be interpreted as an early form of reserve requirements (Gillard 2004). Throughout the 19th century, the optimal level of reserves of the banking system was the core issue of all English monetary debates (see e.g. Bagehot 1873), not to mention the rationale of the United States’ National Banking System and early Federal Reserve System (Timberlake 1993). As a matter of fact, the likely first attempt by a central bank to influence banking regulation was the Bank of England’s campaign for the introduction of reserve requirements in Britain in the 1890s (Sayers 1936; Goodhart 1972). A period of widespread popularity of reserve requirements begun in the 1930s, when they were gradually transformed into an instrument for the conduct of monetary policy. It was precisely on the ground of their ineffectiveness as a monetary instrument that they have been gradually demised in most Western countries since the 1980s (Bindseil 2004).

Section 3: Monetary Stability in History

3.1: Issuing Money

As argued in section 2.1, the centralization of interbank payments naturally occurs in any sufficiently developed banking system; as a result, because of their liquidity and safety, claims on the organization which finds itself at the centre of the domestic payments system
naturally tend to acquire the status of money – even though they are not granted legal-tender status by the government. In what follows, the term ‘central bank money’ will be used to indicate claims on a ‘central’ organization (in the 19th-century sense of an organization which clears the transactions of ‘peripheral’ banks), which do play the role of domestic medium of exchange irrespective of the fact of being declared ‘high-powered money’ by political authorities.

In the light of this, it is convenient to conceive of the central bank’s balance sheet as of a pure commercial bank’s one. Under this respect, it is possible to say that central bank money is issued whenever the central organization starts to perform fractional reserve banking – i.e., to purchase assets against reserves, as in figure 1. Differently said, issuing central bank money means bearing the power to create credit in favour of some borrowers. This is something which has been performed across the centuries by basically all central organizations, including the most conservative ones (as e.g. Amsterdam’s Wisselbank: Gillard 2004).

According to the late-20th-century consensus, those who borrow from the monetary authority are other banks – which, in turn, redistribute credit to the whole economy. In the past, however, such a situation has been the exception rather than the norm. Over the centuries, money-issuing organizations have chiefly supplied credit directly to the state; and even when loans to the banking system have become predominant, central banks have often accorded them provided that the banking system would, in turn, redirect at least part of them towards the government. This disguised obligation has generally taken the form of eligibility criteria for the procurement of credit: in practice, central banks would lend to customers mainly on the security of government bonds, Treasury bills, or the like. With respect to this, the history of the Bank of England is illustrative. During most of its first century of life, the Bank almost exclusively performed direct lending to the government. Only since the 1760s did the sums lent to private customers start to become more substantial; yet, within its portfolio, commercial credit (trade bills) still remained a trifle with respect to government credit (inscribed debt and Exchequer bills: Clapham 1944). The presence of government loans and securities on the Bank’s balance sheet continued to be overwhelming throughout the first half of the 19th century; it was only after the reform of 1844 that the Bank entered the commercial credit market more actively (Wood 1939). With the explosion of war finance in the 1910s and the decline of international trade in the 1930s, Treasury bills almost completely ousted trade bills from the discount market (Scammell 1968), thus making the Bank operate
almost exclusively on Treasury securities (Bindseil 2004). Therefore, on the whole, the Bank of England never ceased to play the role of ‘great engine of state’, famously credited to it in 1776 by Adam Smith (1827, p. 131; also see Von Philippovic 1911). Another noteworthy example is provided by the Federal Reserve: because of an early rebuttal of the use of the discount window (enthusiastically acclaimed by monetarist economists: see e.g. Schwartz 1992), until the recent crisis the Fed basically restrained all its monetary operations to the Treasury bond market only (Bindseil 2004; Jobst 2009). All this suggests that throughout the history of central banking, the monetization of sovereign debt has long played a much more important role than it has generally been recognized – and, as such, it needs being looked at in depth.

In every historical and geographical setting, governments have always been exposed to the risk of facing sudden, unpredictable expenses – mostly related to war. Although markets for long-term government debt have been existing since at least the Middle Ages (Fratianni and Spinelli 2006), in times of emergency only two kinds of strategies have typically been available in order to finance deficits. The first one is monetary debasement – a policy which has widely been implemented in almost any setting, but which suffers from the drawback of systematically creating disarray within the payments system (Sargent and Velde 2002). A less costly, but equally efficient strategy consists of short-term credit creation through some kind of banking organization – a policy which, unlike debasements, does not necessarily disrupt the payments system if wisely implemented (Hicks 1969). Thus, securing the viability of deficit financing without debasements has early been felt as a necessity by governments – especially in those settings in which the negative externalities of debasing money were maximum, i.e. in international financial centres.

Because modern monetization of deficits is often conceived of as a mere ‘reincarnation’ of debasement practices, it is assumed to have appeared as soon as technological improvements allowed to farm seigniorage taxes on a paper instead of a metallic support – i.e. with the invention of banknotes (Selgin and White 1999; Redish 2000). This invention is commonly thought to have occurred in Sweden in the 1660s (Heckscher 1934), although similar instruments already circulated in Naples in the late 16th century (Van der Wee 1977). Deficit financing in the form of credit creation, however, is not a mere transformation of a mint into a printing press: its necessary precondition is the existence of a sufficiently sophisticated
banking system\textsuperscript{14}, not of a technology minimizing the risk of counterfeiting. And indeed, modern monetization of deficits has started to be implemented much earlier than the 17\textsuperscript{th} century – i.e., since at least the emergence of advanced banking practices during the Middle Ages.

What emerges from the historical literature, is that cyclical patterns exist in the way governments have resorted to credit creation for deficit financing over the centuries. Like ‘Coaseian’ firms (Coase 1937), political authorities have at times externalized, at times internalized credit creation – or differently said, they have moved back and forth between market-oriented and state-oriented solutions, according to their relative efficiency. The long experience of the Republic of Venice provides a nice illustration of these patterns. In the 13\textsuperscript{th} and 14\textsuperscript{th} centuries, the Venetian government used to raise short-term funding through one of its departments, the Grain Office. The Office worked as a quasi-bank: on its liabilities side, it took deposits from non-residents and opened drawing accounts to domestic commercial firms which were purveyors to the state; while on its assets side, it lent to other departments. In view of the rampant growth of the domestic banking system, however, this solution was discontinued in the 15\textsuperscript{th} and 16\textsuperscript{th} centuries, when credit creation was externalized to the private clearing banks of Rialto: the government borrowed short-term from banks, which in turn monetized the debt by collecting deposits exchangeable through the clearinghouse system (Mueller 1997). After the collapse of the Venetian banking system, though, in the 17\textsuperscript{th} and 18\textsuperscript{th} centuries the Republic went back to earlier practices and established the Banco del Giro: a state-controlled bank, the Banco took deposits and cleared transactions on the one hand, while it lent to the government on the other (Luzzatto 1934).

These alternating trends – back and forth between internalization and externalization – are similarly well observable in more recent history. At the beginning of the 20\textsuperscript{th} century, almost all banks of issue were privately-owned joint-stock companies, with no formal mandate to lend to governments. After the meltdown of international finance in the 1930s and 1940s, most of them were nationalized and thus reduced to the status of government departments: in this context, central banks were generally required to mechanically purchase government

\textsuperscript{14} It is crucial to underline that this precondition was only seldom met in undermonetized economies, and solutions perfectly working in financial centres often turned out to be inapplicable to other contexts. For instance, in 1593 the municipality of Milan established a bank (Banco di Sant’Ambrogio) which perfectly mimicked the institutional design of Genoa’s Banco di San Giorgio; yet the giro-bank activities of the institution never took off, as the turnover of the Milanese banking place (unlike the Genoese one) never attained the critical threshold necessary to make the institution work properly (Cova 1991).
paper (Tamagna 1963). With the renewed financial expansion of the 1980s and 1990s, however, central banks have regained their independence: in this context, the automatic monetization of government deficits has ceased – which has been vividly described in Italy as the ‘divorce’ between the Bank and the Treasury (Epstein and Schor 1989). The recent period of dysfunctionality of financial markets, addressed by leading central banks with a wave of quantitative easing, allows to wonder if a new cyclical turn is on the way.

3.2: Monetary Policy and Its Implementation

It is often believed that, up to interwar period, monetary policy was a sort of no-brainer: central bankers mechanically stuck to gold-standard rules, and implemented the defence of convertibility by applying a set of conventional instruments (Polanyi 1944; Eichengreen 1996). In reality, convertibility is only one of the policies money-issuing organizations have adopted over the centuries in order to pursue their main macroeconomic target: i.e., the defence of the long-term value of the money they issued\(^\text{15}\). In the implementation of such policies, central bankers have displayed a much higher degree of flexibility than it is commonly thought.

For a long time, money issued by central organizations has not enjoyed the status of legal money. In most Western countries, central bank money has definitely become legal tender only in the second half of the 19\(^{th}\) century (Capie et al. 1994). Prior to that, an exchange rate between central bank money and legal money (viz. gold and/or silver specie) did actually exist: this was a fixed one in case of (internal) convertibility, or a variable one in case of (internal) inconvertibility. The reason why governments have displayed considerable prudence before granting legal tender status to central bank money, is that the move had the potential to annihilate the comparative advantage of credit creation – which, as said, consisted of not creating disarray within the payments system. To put it differently, making banknote

\(^{15}\) In Eichengreen’s (1996) view, the difference between interwar central banking and its predecessors is not merely the importance accorded to fixed exchange rates, but also the incorporation into monetary policymaking of other macroeconomic concerns (in particular, the unemployment rate). However, the recent emphasis on price stability as the ‘Holy Grail’ of central banking (Siklos 2002) allows to wonder whether concern on other macroeconomic factors has been a somewhat transient phenomenon of monetary policymaking – tied to the temporary transformation of central banks into government agencies in the mid-20\(^{th}\) century. For instance, the European Central Bank only has price stability as the macroeconomic target of its monetary policy; under this respect, the Federal Reserve’s unemployment target might appear as a relic of the interwar period.
payments legally enforceable could easily turn to be perceived by the public as a full-scale debasement, because it granted too much discretionary power to the issuer in the absence of a sufficiently credible institutional backing for it. This has often been the case in the early-modern age. In France, legal tender was granted to the notes issued by John Law’s companies under the Regency in the 1710s, and to the assignats issued by the instable Revolutionary government in the 1790s: in both episodes, the value of the instruments rapidly turned to nil. Hyperinflation was also experienced in Austria, Denmark, and Spain (all seriously weakened by military defeats) during the Napoleonic Wars: in all cases, the bank of issue had to be liquidated and replaced by a new organization after the end of the conflict (Capie et al. 1994). This explains why in Britain (an international financial centre), the government tried to resist providing the status of legal tender to Bank of England notes while dropping their convertibility in 1797: such a reluctance gave scope for the emergence of a premium on gold coins, in the face of which the step eventually had to be taken. The ensuing inflation was far from catastrophic thanks to the government’s credible engagement to a rapid return to pre-war conditions (Fetter 1965).

In view of the public’s general defiance towards fiat money, the policies put in place over time in order to defend the long-term value of central bank money have included i) internal inconvertibility, ii) external convertibility, and iii) inflation targeting.

i) During the early-modern era, central bank money often used to be not convertible into legal money. This does not mean that inconvertible central bank money, whose value depended on discreional action, was necessarily worse quality than legal money: on the contrary, inconvertibility was rather a strategy for sheltering the value of central bank money from the instability of metallic media of exchange (Luzzatto 1934). For instance, the money issued by Amsterdam’s Wisselbank was inconvertible, but used to be traded at a premium, not at a discount, with respect to the legal tender unit (Van Dillen 1934). Sometimes, granting convertibility was a way for worsening rather than improving the value of central bank money: this was the case with Genoa’s Banco di San Giorgio, which suffered considerable losses in the 15th century as long as it was required to convert its money into legal-tender one (Fratianni and Spinelli 2006). The general improvement in the state of metallic circulation that took place in the early 19th century (Redish 2000) removed the rationale for internal inconvertibility as a pro-stability monetary policy. As far as we know, the last central

16 Gillard (2004) even sees this as a deliberate sterilization policy.
organization to issue internally inconvertible money was the Hamburger Bank, which eventually adopted convertibility in 1846 (Seyd 1868).

ii) Once central bank money was granted legal tender status, its exchange rate with national legal money ceased to exist; yet of course, its exchange rate with international reserve assets did not. The term ‘international reserve asset’ is used here to indicate an universally accepted medium of exchange for the clearing of international transactions, which is unaffected by liquidity problems under any condition (see e.g. Kindleberger 1989). The exchange rate between central bank money and the international reserve asset could be a fixed one in case of (external) convertibility, or a variable one in case of (external) inconvertibility. Since the early 19th century, external convertibility came to be seen as a convenient expedient to limit the issuer’s discretional power, which was thought to be the cause of inflation (Flandreau 2008). As long as both gold and silver played the role of international reserve assets, convertibility into the one or the other metal (or both) were seen as expedient monetary policies; yet, as soon as silver was suspected to be losing such status in the 1870s, a rush to gold convertibility alone did occur (Flandreau 2004). In the 20th century, two attempts at creating an international gold-exchange standard (the Genoa and Bretton Woods systems) tried to oust gold from this role, and to replace it with (respectively) sterling and the dollar: the first essay failed, while the second one basically succeeded.

iii) The problems experienced by the Bretton Woods system until its eventual demise in 1973 have shown the inconsistency of arrangements which transfer discretional power from domestic to foreign central bankers (Eichengreen 2010). Thereafter, external convertibility has been abandoned and gradually replaced by new strategies for limiting discretionality – viz. inflation targeting, now made feasible by technological improvements (Flandreau 2008).

Thus, preserving the value of central bank money (through internal inconvertibility, external convertibility, or inflation targeting) has always been the monetary policy par excellence of issuing organizations. Concerning the way this has been implemented, quantity and price policies for regulating the value of money have been alternatively put in practice. In early times, quantity policies were the only available option for at least two reasons: first, except for some occasional authorisations to overdraft accorded to depositors (Usher 1943), early banks did not generally lend to private customers; and second, even in those cases in which they did lend to the banking system (as e.g. for the late-18th-century Bank of England), usury ceilings basically ruled out the feasibility of interest rate policy (Hawtrey 1932). As a result, early banks could only try to affect the value of the money they issued by modifying its
quantity through open-market operations. Both Venice’s Banco del Giro and Amsterdam’s Wisselbank, for instance, happened to implement such operations in order to sustain the exchange rate between central bank money and legal-tender one (Luzzatto 1934; Gillard 2004). When in the early 19th century external convertibility came to be seen as the most desirable monetary policy, quantity concerns were translated into reserve requirements for the issuing bank. Sometimes, these were designed in a rather bizarre fashion: for instance, for nearly one century Peel’s Act required the Bank of England’s banknote issue to maintain a one-to-one ratio to gold reserves above a given threshold, but did not call for any bullion backing for demand deposits: the unforeseen outcome of this restriction was that the issue of central bank money came to be infinitely elastic during panics, when the safety of the Bank was sought by the whole banking system (Barrett Whale 1944). In most cases, however, a minimum fractional reserve was legally required to back the total amount of banknotes and deposits issued (Ugolini 2012a).

As in the course of the 19th century central banks’ loans to private customers became more widespread and usury ceiling were generally repealed, scope was provided for the implementation of price policies. This first took place in Britain, where an ‘orthodox’ theory of bank rates gradually emerged: only concerned with the defence of external convertibility, the view held that the central bank should react to a depreciation of the exchange rate (deemed to be automatically followed by an outflow of bullion from its reserve) by increasing the interest rate of its standing facility (Hawtrey 1932). Although officially the doctrine remained worldwide popular until the 1930s, its actual workability had already become a matter of doubt before the end of the 19th century. On the one hand, the extreme interest rate volatility implied by it soon sparked discontent within the real economy, and the Bank of England was forced to invent a number of ‘devices’ in order to smooth its inconveniences (Sayers 1936). On the other hand, peripheral countries experienced difficulties in effectively facing exchange rate depreciation by raising rates, and accordingly their central banks started to rely on foreign exchange intervention rather than interest rate policy for the pursuance of monetary targets (Ugolini 2012a; 2012b).

The events of the 1920s and 1930s destroyed the prestige of the British monetary ‘orthodoxy’, and for many decades the concern of both Keynesian and monetarist economists was with the way of controlling the quantity of money through open-market operations. In turn, however, quantity policies performed very poorly in the 1970s and 1980s, prompting central bankers to come back to price policies (Bindseil 2004). Up to 2008, a general
consensus existed on the fact that price stability could best be achieved through the control of short-term interest rates; but, as it had been the case during the first age of price policies, only in core countries did central banks stick to interest rate steering, while in peripheral ones they once again resorted to foreign exchange intervention. The spectacular reappearance of quantitative policies (such as “quantitative easing”) since the outburst of the recent crisis appears to mark the end of the late-20th-century consensus among central bankers.

Section 4: Conclusions

4.1: Summary of Results

This paper has reviewed the current state of research about the evolution of central banking functions in the West since the Middle Ages. The results of this survey can be summarized as follows. Concerning microeconomic central banking functions, the literature outlines the existence of unidirectional tendencies towards a) the centralization of payments systems, and b) the adoption of lending-of-last-resort policies. Concerning macroeconomic central banking functions, on the contrary, it is found that a cyclical behaviour has characterized the setting of monetary policy over the centuries. As a matter of fact, historical evidence points to the existence of cyclical patterns in A) the monetization of government deficits (from internalization to externalization, and back), and in B) the discretionality of monetary action (from full discretionality to strict adherence to rules, and back) and the way it is implemented (from quantity policies to price policies, and back).

4.2: Implications

These findings bear relevance to the current debate on the institutional design of central banks.

i) First, the results show that not only the targets and instruments of monetary policy, but also the organizational structures for the provision of central banking functions can vary over
time in response to changes in the surrounding political and financial environment. The present form assumed by money-issuing organizations, besides being relatively recent (dating from the last three decades only), is certainly not the only viable institutional solution. As a matter of fact, a high degree of adaptation to the consequences of major political and economic shocks (such as e.g. the Napoleonic Wars, or the Great Depression) has characterized the evolution of money-issuing organizations over the centuries. This means that the optimality of central banks’ institutional design depends on the specific features of the political and economic context to which it is applied: in central banking, one size does not fit all.

ii) The same is the case for what concerns the relationship between monetary and fiscal authorities. In the long history of sovereign borrowing, periods of predominantly direct recourse to financial markets have alternated with periods of debt monetization – the latter being the norm in times of market dysfunctionality. As a result, government deficit monetization should not necessarily be seen as evil, but rather as an option to be subjected to a benefit-cost assessment – in the light, of course, of the constraints imposed by the institutional arrangements in force (Kocherlakota 2011).

iii) On the whole, historical evidence suggests that the efficiency of any solution (concerning both organizational forms and monetary policies) crucially depends on the sustainability of the institutional arrangement backing them. Money-issuing organizations are the outcome of collective bargaining, and the credibility of the former rests on that of the latter. Older forms of central banking organizations like giro banks disappeared not because of flawed organizational structure, but because of the dissolution of the political equilibria which had allowed for their existence. Similarly, banks of issue like the Bank of England and (say) Denmark’s Kurantbanken had opposite fates not because of organizational dissimilarities, but because of the different degree of sustainability of their institutional backing.

All this suggests that while recent research has started to shed light on many previously overlooked aspects of the evolution of money-issuing organizations, there is still one crucial dimension that is in need of clarification. It is the question of the political economy of central banking, which has so far been addressed only in the reductive terms of the debate on central bank independence (see e.g. Toniolo 1988). Central banking is the outcome of collective bargaining: what the historical literature indirectly suggests, is that money-issuing organizations did not derive their actual strength from formal independence, but from the
credibility of the institutional arrangement in force. In order to prevent the equilibrium from being fragile, monetary and fiscal authorities must not be perceived as free-riding the one on the other. On the one hand, central bankers should not entrench themselves behind technicalities: as one connoisseur pointed out at a time of great economic transformation, ‘the cardinal virtue of the central banker is not conservatism in technique, but rather a disposition to discover novelties and to be versatile in technique’ (Sayers 1949, p. 211). On the other hand, politicians should be aware of the fact that the very functioning of modern states depends on central banks and their action within the banking system: as one major Venetian banker argued during the big financial crisis of 1498, ‘quando i banchi no ha’ fede, la Terra no ha credito [when there is no trust in the banking system, there is no credit for the Country]’ (Mueller 1997, p. 425). Free-riding of tax-farming on money-issuing organizations – or vice-versa – is a patently inconsistent institutional arrangement which is not destined to last. After all, monetary and fiscal authorities are but the two sides of the same coin.
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