



EUROPEAN CENTRAL BANK

EUROSYSTEM

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Central banking before 1800 - A rehabilitation



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Frankfurt am Main
House of Finance

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De Kock (1939) (Central banking);
Capie, Goodhard, Schnadt (1994) (350 years of
Bank of England volume)

This presentation relies on two closely related projects:

- A forthcoming book: *Central banking before 1800 – A Rehabilitation* (Oxford University Press)
- A working paper: “Some Pre-1800 French and German Central Bank Charters and Regulations” Available in SSRN:
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3177810

De Kock (1939) (Central banking);
Capie, Goodhard, Schnadt (1994) (350 years of
Bank of England volume)

- (1) Defining CBs is “by no means straightforward”;
- (2) Sveriges Riksbank and Bank of England were first;
- (3) Early central banks had no policy mandate and there was no concept of “central banking” – both developed in late 19th century;
- (4) LOLR discovered only in the course of the 19th century.

All four points can be challenged.

- *“The solution to these [LOLR] problems, which occurred naturally in England... was the development of the noncompetitive, non-profit maximizing central bank. This model was widely seen as so attractive that it was copied in virtually all other major countries.” (Goodhard 1988)*
- *“It was the metamorphosis from their [central banks’] involvement in commercial banking, as a competitive, profit-maximising bank among many, to a non-competitive non-profit-maximising role that marked the true emergence, and development of proper central banking.” (Goodhart, 1988)*
- *“Defining central banking is problematic. In one sense we recognise it when we see it. The Bank of England was established in 1694, but at that time there was no concept of central banking.” (CGS, 1994)*
- *“Defining central banking is by no means straightforward, nor for the early years is it easy to identify a central bank. It is often asserted that the Swedish Riksbank, founded in 1668, was the world’s first central bank. But by almost any definition there was no such thing as central banking at that time.” (Capie, 2016)*

Table 1: CGS’ chronology of first central banks according to CGS (1994, 5/6)

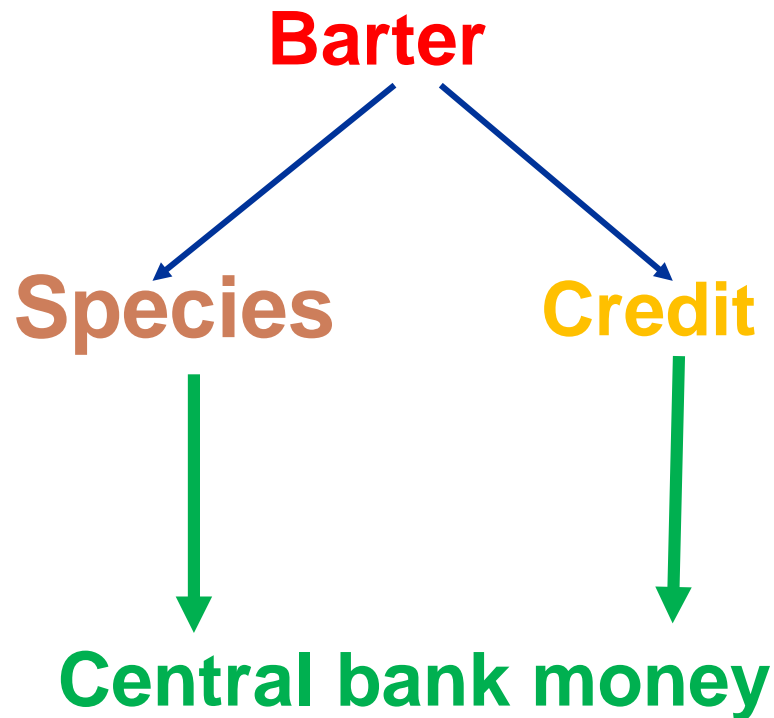
Bank	Founded	Monopoly note issuer	LOLR (decade)
Sveriges Riksbank	1668	1897	1890
Bank of England	1694	1844	1870
Banque de France	1800	1848	1880
Bank of Finland	1811	1886	1890
...			

Actually central banks are easy to define

- **They issue central bank money** financial money of highest possible liquidity and credit quality that is accepted for ultimate settlement of any other financial claim in same way as species (i.e. it is being considered risk free), and that is significantly used as means of payment.
- **Because of natural monopoly and systemic relevance properties of money they are always established on the basis of a law, giving them a unique role in the jurisdiction**
- **They always have specific policy mandates**
- **Illustrations of public legal basis, and of policy mandates:**
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3177810

Why central bank money?

John Law(1705): “Before the use of money was known, goods were exchanged by **barter**, ... This state of barter was inconvenient, and disadvantageous... there was little trade”



William Potter (1650):

“The greatest part of men’s returns in most places of the world, are either upon the **credit of particular persons, as here in England**, or else, **by means of some brass or copper money made current by law, as in Spain, Holland and other places**, both which are bad enough, though **the former much more liable to hazard than the latter**, as I could prove at large. And considering, that notwithstanding the **so many and great inconveniences of trading upon such private credit, so long experienced by men of all trades and nations, it still continues so common a thing amongst them, to make use of their own words and credits, instead of money, for transferring goods to and from one another...**”.

Central Bank Money = highest possible credit quality, divisible and transferable financial claim that is accepted in the economy for the settlement of all other forms of claims. CBs:

- allow to **improve** the monetary base for the sake of more convenient payments
- allow to **increase** the monetary base for the sake of facilitating trade while preventing the excessive reliance on private credit, which also creates financial stability problems

Issuing central bank money: inefficiency of species



(Painting by Holland of 1539)

Inconvenience of species has to be understood against heterogeneity and poor quality of species before 1800, including implied permanent adverse selection issues. In addition: risk of theft and destruction.

Of note: when species is paid in and out of a central bank, these issues (including adverse selection) also materialise, bringing central banks (e.g. Bank of Amsterdam) to find ways to minimise in- and outflows at the discretion of depositors

Defining and identifying central banks

- They are **like commercial banks** since they have to seriously manage their credit and liquidity risk (not like paper money standard central banks)
- **But they are different**
 - **particularly short term** liabilities in view of their core “business” model: issuing CBM. Implies predominance **of low-risk and high-liquidity assets, such as to ensure to be always in the no-run equilibrium.**
 - business model entails **unlimited economies of scale (public good) => need for public charter regulating them**
 - **Liabilities need to be of the highest possible credit quality**



*18th century
medals of
Hamburger
Bank and
Caisse
d'Escompte
emphasising
absolute
trustworthiness*

- **Mandate of Hamburger Bank of February 1619:** “developing commerce and trade” (“Beförderung der Commerzien und Handlung”)
- **Preamble of regulation of its Lending Bank branch:** *“According to experience, which also has been reported bitterly to the City Council, honest people in emergency situation who need to borrow money for their business have to pay excessive interest rates, and pledge collateral, to egoistic, advantage-seeking individuals... Therefore, the City Council, to help the deserving poor and anyone else, has decided to establish a lending bank such that everyone can as of now get funding there at a fair interest rate.”*

400 Years anniversary of Hamburger Bank



Policy objectives: Bank of England (Paterson, 1694):

- *“The want of a bank...for the convenience and security of great payments, and the better to facilitate the circulation of money, in and' about this great and opulent City, has in our time, among other inconveniencies, occasioned **much unnecessary credit, to the loss of several millions, by which trade has been exceedingly discouraged and obstructed: This, together' with the height of interest and the forbearance of money**, which for some time past has born no manner of proportion --- to that of our-rival neighbours, and for which no-tolerable reason could ever be given either in notion or practice, considering the riches and trades of England. ...(p. 1-2) ...*
- *And as the effects of this bank will be a growing' and increasing money, and **bring great advantage to trade, by the secure, easy and convenient way of receipts and payments therein**, it's' safety from fire, thieves, and other disasters, which' gold and silver are subject unto... the practise of which will naturally and gradually' lower the interest of money, as it has done in Holland, Genoa, and all other places where bank and public funds are used: all which win render it the **highest interest of the government and people**, to preserve, maintain, and improve it in all time to come (p. 13-14)”*

Defining and identifying central banks

A. Taula de Canvi, Barcelona	1401
B. Casa di San Giorgio, Genoa	1407
C. Naples banking system	1580
D. Banco di Rialto, Venice	1587
E. Banco di Santo Spirito, Rome	1605
F. Bank of Amsterdam	1609
G. Banco del Giro, Venice	1619
H. Hamburg Bank	1619
I. Nürnberg Banco	1621
J. Stockholm Banco	1657
K. Riksens Ständers Bank*	1668
L. Bank of England	1694
M. Bank of Scotland	1695
N. Land based banks of N-America	1700
O. Banco di Depositi, Leipzig	1698
P. Banco di gyro, Cologne	1705
Q. Wiener Stadtbank	1706
R. Banque Générale, Paris	1716
S. Copenhagen Banco	1737
T. Royal Bank in Berlin	1766
U. Russian Assignment Banks	1768
V. Caisse d'Escompte, Paris	1776
W. Banco Nacional de San Carlos	1782
X. Bank of North America	1782
Y. Bank of the United States	1791

More than 20 institutions before 1800 fulfil the definition of central banks. (few amongst the 25 were not successful in issuing means of payment)

Defining and identifying central banks

DIE ERSTEN GIRO- UND DEPOSITENBANKEN

THE FIRST GIRO AND DEPOSIT BANKS

Als der Handel im Hochmittelalter immer mehr zunahm, entstanden in Städten wie Venedig, Florenz, Genua oder Barcelona erste Giro- und Depositenbanken. Kaufleute konnten ihr Geld bei der Bank einzahlen und sicher verwahren. Die Bank wickelte Zahlungen bargeldlos ab: Sie buchte einfach den Betrag vom Konto des Zahlungspflichtigen auf das Konto des Empfängers um – der Vorläufer der modernen Überweisung. Ab dem 15. Jahrhundert gingen viele dieser Städte dazu über, solche Banken als öffentliche Einrichtungen zu betreiben. Das schützte die Kunden besser gegen das Risiko eines Bankkonkurses. Zudem verwalteten die öffentlichen Giro- und Depositenbanken auch die städtischen Finanzen.

As trade became more and more important in the High Middle Ages, the first giro and deposit banks emerged in cities like Venice, Florence, Genoa and Barcelona. Merchants could lodge their money at the bank for safekeeping. The bank processed payments without using cash by simply transferring the sum from the payer's account to the recipient's account – the forerunner of the modern-day transfer. From the 15th century onwards, many of these cities moved to operating such banks as public institutions. This protected customers better against the risk of a bank insolvency. The public giro and deposit banks also managed municipal finances.



In Genua entstand 1408 mit der *Casa di San Giorgio* eine der ersten kommunalen Giro- und Depositenbanken.

One of the first communal giro and deposit banks, the *Casa di San Giorgio*, was established in Genoa in 1408.

Following the example of the public giro and deposit banks in Italy and Spain, similar institutions were established in Central Europe in the 17th century. Amsterdam founded the *Wisselbank* ("exchange bank") in 1609. Ten years later, Hamburg followed suit with the *Hamburger Bank*. In order to organise the financial market, all larger financial transactions in Amsterdam and Hamburg had to be settled via these banks. Since the variety of coins in circulation at that time complicated payment transactions, both institutions accepted sums of money in all kinds of currency and converted them into an internal book currency. Thus, bills could be settled simply by transferring the uniform book money from one account to another.

Money Museum of Deutsche Bundesbank

Early continental public- and deposit banks are acknowledged, but...

Defining and identifying central banks

DIE GEBURT DER ZENTRALBANKEN

THE ORIGINS OF CENTRAL BANKS

Geld gibt es schon seit Jahrtausenden, aber Zentralbanken – die heutigen „Hüter des Geldes“ – sind vergleichsweise junge Institutionen. Die älteste Zentralbank der Welt ist die schwedische *Riksbank* von 1668. Bald darauf, im Jahre 1694, wurde die *Bank of England* gegründet. Der *Banco Nacional de San Carlos*, Vorläufer des *Banco de España*, entstand 1782, die *Banque de France* im Jahre 1800. Die meisten europäischen Staaten gründeten ihre Zentralbank im 19. Jahrhundert, darunter Deutschland 1876 mit der *Reichsbank*. In Japan entstand 1882 die erste Zentralbank in Asien. Die meisten Länder der Welt schufen jedoch erst im 20. Jahrhundert Zentralbanken. Oft hatten die heutigen staatlichen Zentralbanken zunächst andere Ziele und Aufgaben.

Money has been around for centuries, but central banks – today's "guardians of the currency" – are comparatively recent institutions. *Sveriges Riksbank*, dating back to 1668, is the oldest central bank in the world. The *Bank of England* was founded soon after in 1694. *Banco Nacional de San Carlos*, the forerunner of *Banco de España*, was created in 1782, followed by the *Banque de France* in 1800. Most European countries set up their central banks in the 19th century, like Germany's *Reichsbank* in 1876. The first central bank in Asia was founded in Japan in 1882, but it was not until the 20th century that most countries in the world established central banks. Often, the present-day national central banks originally had other aims and tasks.



Die im Jahre 1668 gegründete *Sveriges Riksbank* ist die älteste Zentralbank der Welt. Ihre Aufgabe bestand ursprünglich in der Finanzierung des schwedischen Staats.

Sveriges Riksbank dates back to 1668, which makes it the world's oldest central bank. Its original role was to finance the operations of Swedish government.

... no link is seen between those and the origins of central banking.

Why?

- (1) Liability side: Banknotes vs. deposits? But both constitute “CB money”
 - (2) Asset side: 100% reserves vs. lending to governments and private borrowers?
- Both explanations could be challenged

The early literature gave prominence to the early central banks

	USA (1791)	France (1776)	France (1716)	Vienna (1703/06)	Scotland (1696)	England (1694)	Sweden (1657/68)	Hamburg (1619)	Amsterdam (1609)	Venice (1587)	Naples (1584)	Genua (1407)	Barcelona (1403)	
Pre-1800 literature:														
Janssen (1698)														
Law (1705)														
Marperger (1717)														
Franklin (1729)														
Cantillon (1730)														
Berkeley (1734) ¹														
Savary & S. (1750)														
Smith (1776)														
Gaudot (1789)														
Hamilton (1790) ²														
Madison (1791)														
Büsch (1801)														
More recent literature														
Van Dillen (1934)														
De Kock (1939)														
Redlich (1947/1968)														
Klein (1982)														
CGS (1994)*														
Roberds&Velde(2014)														
Ugolini (2017)														

Deposits versus banknotes

- Deposits are 250 years older form of CBM: Barcelona, 1401. Naples public banks invented Fede di Credito in 1580s. Stockholm Banco invented modern banknotes in 1661 (but Chinese state paper money: 13th century).
- Banknotes give CB new reach and scale, in particular in surface economies (Sweden and England vs. city republics).
- Authors and legislators regard banknotes as more dangerous form of CBM (more temptation to over-issue and risk for convertibility)



Classifying central banks in terms of their monetary liabilities

	CB liabilities used as means of payment	"CB" liabilities not used as means of payment
Convertible	1a (<100% reserve CB)	3
	1b (100% reserve)	
Non-convertible	2	4

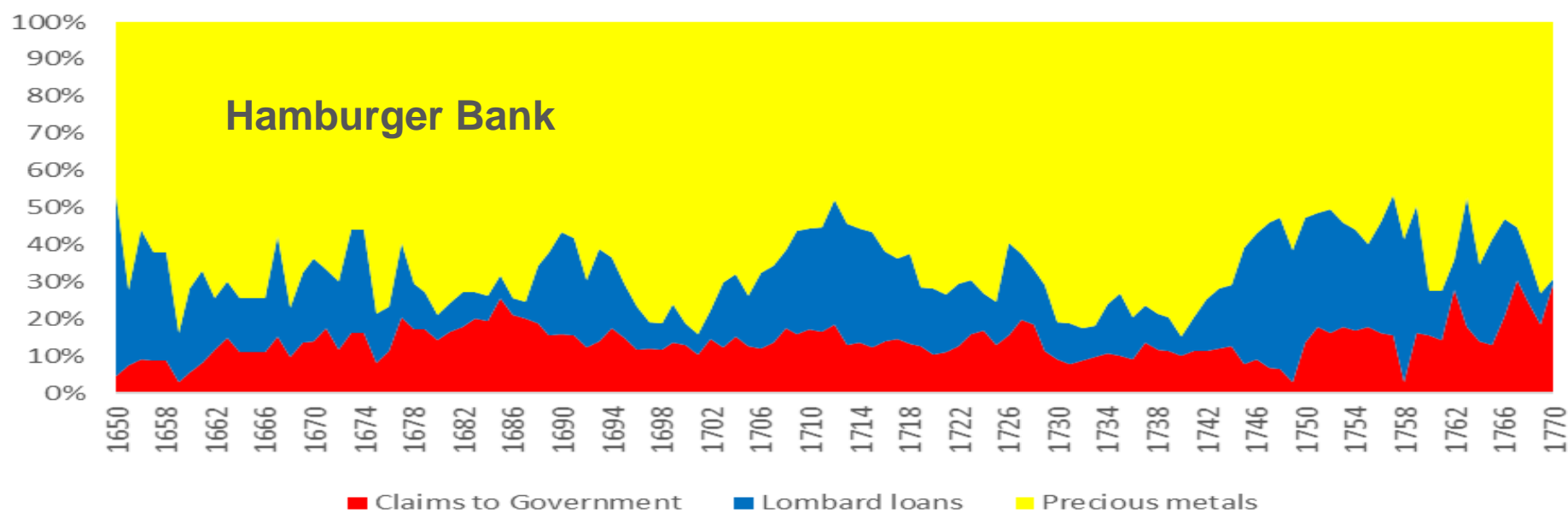
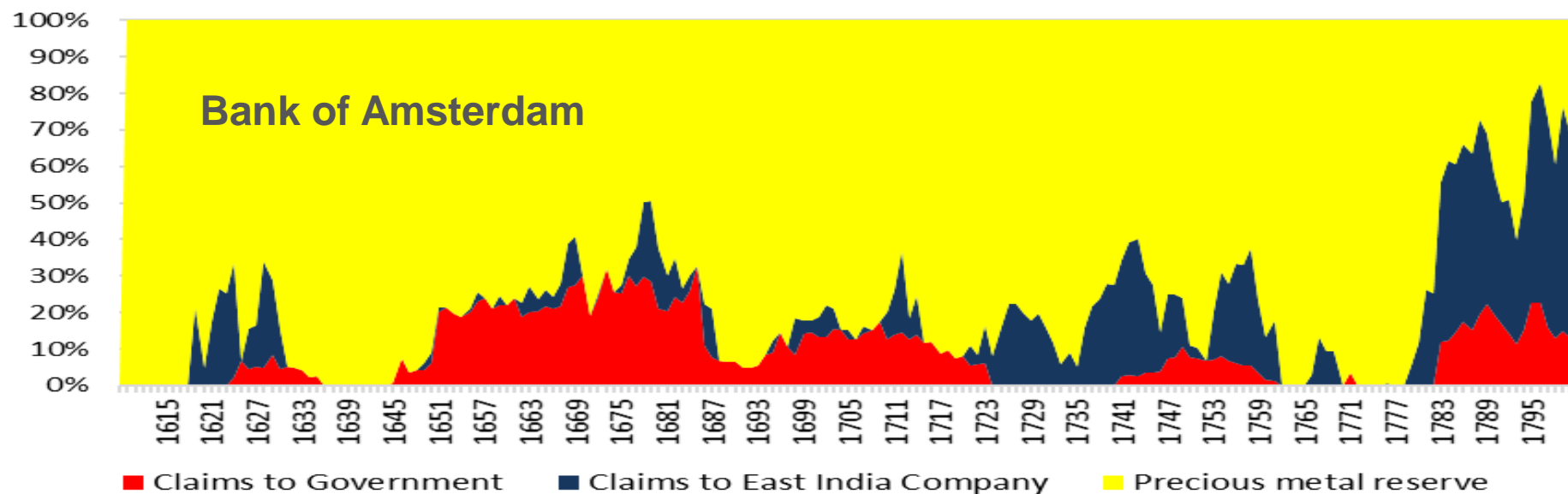
- 1.a. Hamburger Bank and Bank of England, both with few interruptions
- 1b. Banco del Rialto, 1587-1638
- 2. Riksbankens Ständers Bank during parts of the 18th century: Banknotes were used as means of payment, but they traded often at a discount relative to their theoretical value
- 3. Royal Bank in Berlin, 1766-1806. Convertibility was achieved, but the deposits issued were savings deposits and were not used for payments; banknote issuance was immaterial
- 4. Royal Bank in Berlin, 1806-1830: deposits were neither convertible nor a means of payment.

Size and some balance sheet ratios of six central banks – 1700-1770

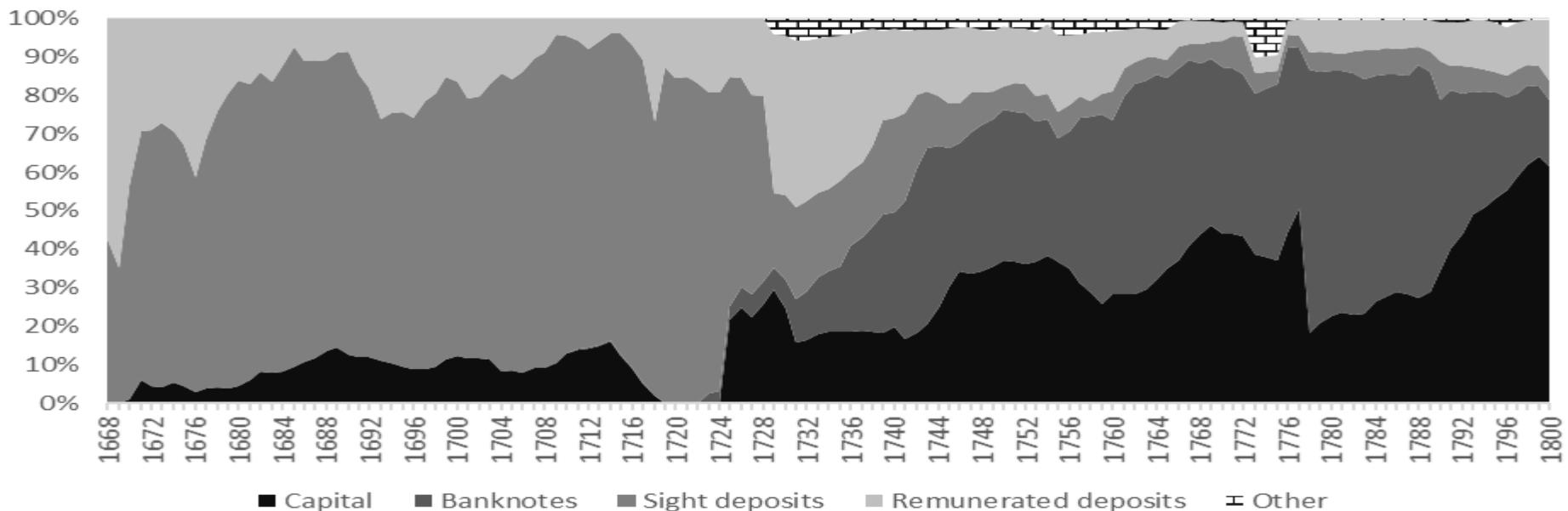
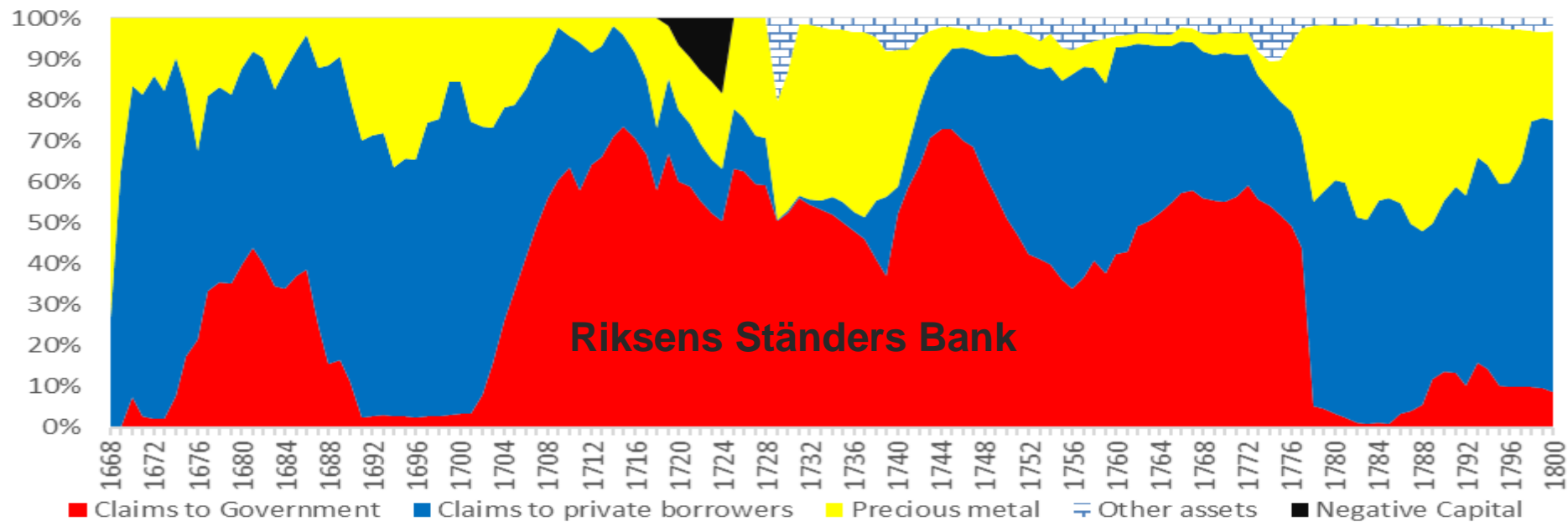
	Bank of Amsterdam	Hamburger Bank	Bank of England	Riksbank
Metal reserve, tons of silver	138	26	241	3
Money issued, tons of silver	166	40	371	22
Balance sheet, tons of silver	166	40	1703	103
Metal reserves/money issued	0.83	0.67	0.34	0.12
Metal reserves / total BS	0.80	0.64	0.14	0.07
Gvt exposure / total BS	0.05	0.14	0.78	0.38
Discounting / total BS	0.00	0.00	0.07	0.00
Advances / total BS	0.12*	0.21	0.00	0.26*
Deposits / total BS	0.97	0.97	0.17	0.31**
Banknotes / total BS	0.00	0.00	0.24	0.37
Capital / total BS	0.00+	0.00+	0.55	0.29
Data source	Van Dillen (1934)	Sieveking (1933)	BoE (1967)	Riksbank website

Balance sheet structure of pre-1800 CBs

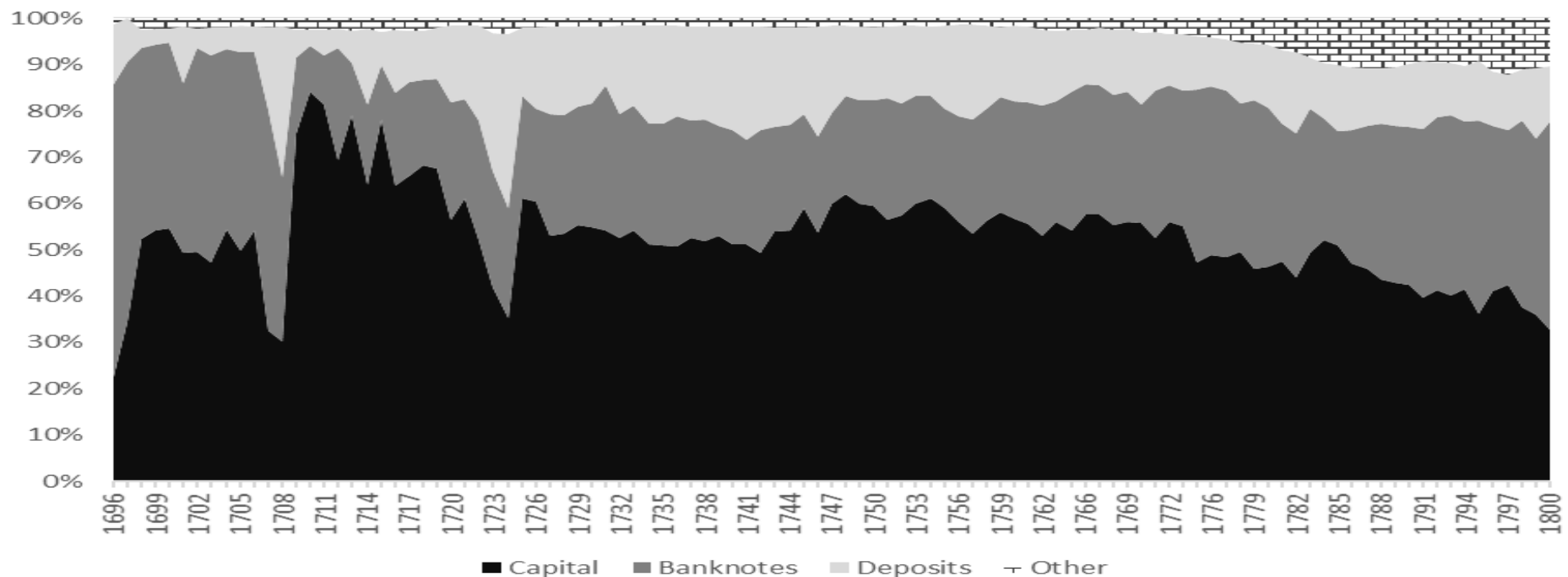
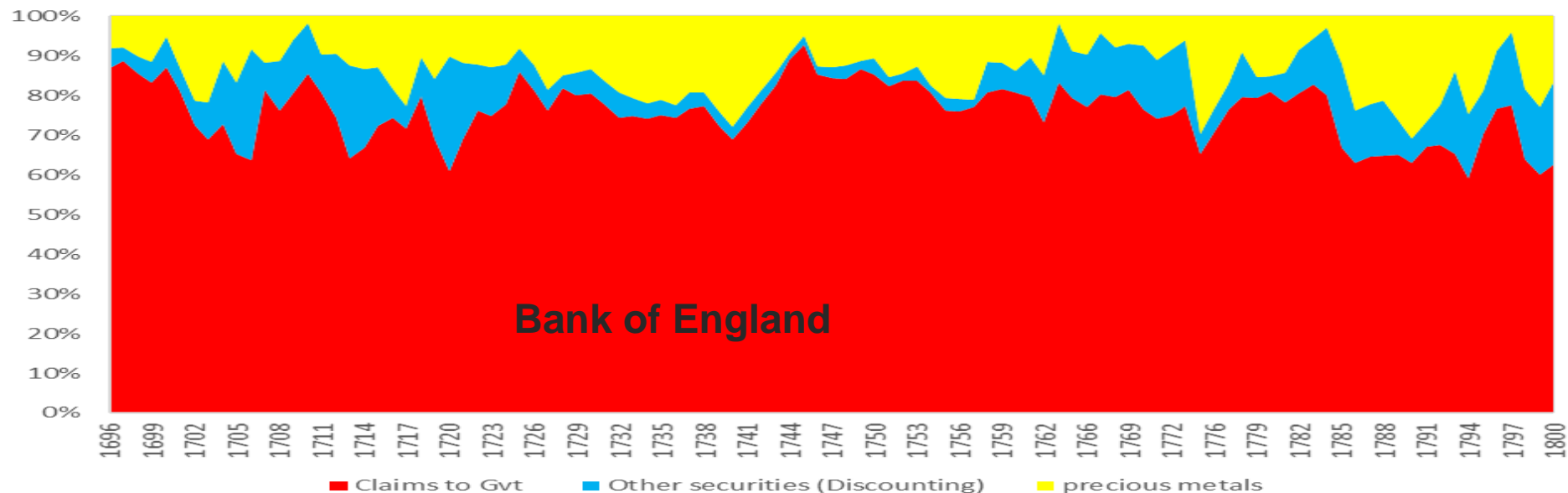
Evolution of asset composition Amsterdam and Hamburg



Balance sheet structure of pre-1800 CBs



Balance sheet structure of pre-1800 CBs



Review of pre-1800 literature easily refutes that there “was no concept of central banking”. Outstanding contributions:

1. William Potter (1650)
2. Johan Palmstruch (1652)
3. Paterson (1694), Godfrey (1695), Janson (1697), (in context of the BoE launch)
4. John Law (1705), (1715a)
5. Marperger (1717) – more descriptive
6. Cantillon (1730), Berkeley (1735), Steuart (1767)
7. Adam Smith (1776)
8. Hamilton (1790)
9. Büsch (1801)

Lending to governments...

- **Casa di San Giorgio (1407) and Bank of England (1694)** were both co-motivated by finding a framework for organising the creditors of the government, and claims to government were dominant asset class
- 100% reserve banks like the **Banco di Rialto (1587)** had a strict “monetary financing prohibition”
- Others, like the **Hamburger Bank**, had an intermediate approach, in which lending to the city was one, but not the dominant non-metal asset, and it never exceeded around 1/3 from **1619 to 1875**
- **Monetary financing “scandal” ended Bank of Amsterdam in 1790s**
- **Riksens Ständer Bank** was forced several times in 18th century to lend excessively to crown and suspended convertibility for long periods
- **Possible objectives of CB exposure to the government**
 - CB money issuance perspective: liquid and low risk asset allowing to increase monetary base when species are scarce; generate income which further strengthens CB balance sheet
 - Government perspective: Reducing costs of government debt and providing LOLR to government

Lending to governments...

- **Risks of misuse of the CB by the Government**
 - Confiscation of metal reserve by invading army or by domestic sovereign
 - Quasi-forced loans to government of weak credit quality
 - Default or forced prolongation of liabilities towards the central bank
- **Various institutional arrangements tested** over centuries to find right balance of CB independence, including private vs public ownership. **Public ownership** seems to have worked for **free town republics**, e.g. perfectly for Hamburger Bank (1619-1875). Ownership assigned to Christian charitable institutions worked well in the Kingdom of Naples. **Private ownership (Casa San Giorgio, BoE)** worked particularly well overall in 18th (and 19th) century in **monarchies**, but was phased out in 20th century (return to pre-BoE model of public ownership).
- **Pros and cons of private ownership** extensively debated by Machiavelli (“Casa is a state in the state”), Berkeley, Montesquieu, Mirabeau, Hamilton and Ricardo
- If public ownership, aim at **independence through separate governance**

Relation to governments... and governance

Colour code about pre-1800 performance:

- Bad: never really issued means of payment or ending with haircut
- Medium: limited issuance of means of payment or monetary liabilities trading for long periods below parity
- Good: Extensive periods of issuance of convertible means of payment

	Republic	Monarchy
Private CB	<p>Casa di San Giorgio, Genoa (1407)</p> <p>Bank of the United States (1791)</p>	<p>Stockholm Banco (1656) (failed after few years)</p> <p>Bank of England (1694)</p> <p>Bank of Scotland (1698)</p> <p>Banque Générale (1716-18)</p> <p>Caisse d'Escompte (1776)</p>
Public CB	<p>Taula de Canvi, Barcelona (1401)</p> <p>Banco di Rialto, Venice (1587)</p> <p>Bank of Amsterdam (1609)</p> <p>Banco del Giro, Venice (1619)</p> <p>Hamburger Bank (1619)</p>	<p>Naples banking system</p> <p>Riksbank Ständers Bank (1668) (temp. convertib. suspension)</p> <p>Leipzig Banco (1698) (never really took off)</p> <p>Vienna Banco (1703/06) (eventual drastic haircut)</p> <p>Cologne Banco (1704) (never really a bank; eventual haircut)</p> <p>Banque Royale (1718-1720) (convertibility suspension, closed)</p> <p>Copenhagen (1737-1811) (convert. suspension, event. haircut)</p> <p>Royal Bank in Berlin (1765) (became public savings bank)</p> <p>Russian Assignation Banks (1768) (eventual non- convertib.)</p> <p>Banco de San Carlo (1782) (did not manage to issue money)</p>

Lending to private borrowers ...

Liability side justifications:

- Like government exposures, allows to leverage precious metal reserves such as to increase monetary base.
- By not only having government exposures, but also diversified, granular, short term exposures to private borrowers, increase of the monetary base can be achieved with better asset portfolio properties
- Elastic lending can stabilize scarcity of monetary base in case of cyclical demand and supply factors (cyclical supply factor: in/outflow of species with cyclical balance of payment flows; cyclical demand factors: agricultural seasonality in US in 1900)

Asset side justification:

- Large resources of CB and its top credit quality allows for risk free granular credit provision through Lombard lending against less liquid collateral with high haircuts;
- Elastic lending means additional liquidity for counterparties, that they can use to finance additional long term economic projects => higher economic growth – relates to LOLR function
- “Love of the people”, protecting poor from usury, etc

Lending to private borrowers ...

- **Short term vs. long term lending:** experience led to conclusion that central bank credit should be short term, to support overall liquidity of central bank. Examples of banks providing long term lending and experiencing liquidity problems: Sveriges Riksbank, Royal Bank in Berlin
- **Granular versus concentrated exposure.** Granular is preferable because of smoother maturity profile and lower risk (portfolio diversification). Bad example: concentrated exposure of Bank of Amsterdam to VOC (Dutch East India Company), in particular in 1790s
- **Discount vs Lombard:** Hamburger Bank first official systematic Lombard lending public bank. Bank of England and others more focused on discounting of bills of exchange (being also a credit operation as counterparty who sells the bill to CB has to endorse it). Both operations have their origins in similar private market activities, but fitted well with central banking and reached there large scale. **Alternating dominance:** In 17th century, Lombard prevailed; In 19th century, discounting bills dominated; Since mid 20th century, collateralized lending (Lombard) eventually prevailed over discounting

Lending to private borrowers ...

- Collateral eligibility and haircuts (and eligibility rules for bills of exchange) are partially well described in rules and procedures documents or in subsequent literature (e.g. for Hamburger Bank in Sieveking, 1933)
- Janssen (1697) notes advantages of credit provision to private sector for a central bank (e.g. allows to be loved by the people); Steuart (1765) and Büsch (1801) discuss in most detail credit and liquidity risks of private sector exposures of central bank
- Excerpt collateral rules of Leipzig Banco in 1702 (Lünig, 1724):

Tit. X.

Wie viel eigentlich auf ein iegliches Pfand zu leihen,
und von der Zeit der Wiederbezahlung des darauf
gegebenen Geldes, auch dessen fernerer Ge-
stundung.

Wie, und
wie viel
auf unbes-
wegliche
Güter zu
geben?
Auf be-
wegliche
Dinge.

§. 1. Auf unbewegliche Güter soll die Helffte dessen,
was sie an ihrem Ort werth seyn, gegeben, zuvorhero
aber von dem, so Geld verlangt, durch ein Obrigkeitli-
ches Attestat bescheiniget werden, daß solche mit andern
Hypothecken noch nicht beschweret.

§. 2. Ferner sollen auf bewegliche Dinge, und zwar
Gold, oder Silber, Geschirre drey quart nach ihrem
rechten Werth ausser dem Arbeits-Lohn, auf courren-
te Waaren die Helffte, oder nach Befinden ihrer Qualis-
tät zwey Drittheil, auf nicht courrente aber, oder auch
Jubelen ein Drittheil gelchnet werden. Es müste denn
seyn, daß niemand solche Jubelen, die im Gewicht gut be-
stehen, versehen wolte, sodenn soll der Banco ihm die
Helffte, nach Beschaffenheit derer Umstände, nicht ver-
sagen.

Tit. XI.

Wie die Pfänder zu schätzen, und wie wegen un-
vermutheter Concurse dem Banco zu pro-
spiciren.

§. 1. Ein jedes Pfand muß von einer oder zwey Per-
sonen, denen darvon die beste Rantniß beywohnet, und vor wem
so der Banco darzu ausdrücklich beruffen läßt, taxiret
werden; welches sie bey der Pflicht, womit Sr. Königli-
chen Majestät sie verwandt, an Eydes statt aussagen,
oder auch nach Gelegenheit, vornehmlich bey kostbaren
Sachen, darzu ausdrücklich verordnet werden sollen; wor-
bey die Congregation an niemand, der sonst vielleicht
die Taxation, als vor ihn gehörend, präteridiren möch-
te, gebunden seyn wird. Und zwar so ist solcher Leute
Aussage vor der ganzen Versammlung abzulegen, da-
mit der Secretarius darbey alle vorgefallene Umstände
nothdürfftig registriren könne. Auch sollen bey der
geschehenen gewissenhaften oder auch eydlichen Taxa-
tion diejenigen, so Pfänder einlegen, schlechterdings es
bewenden lassen.

Overview of rules for Lombard loan conditions of some central banks

	Interest rate	Collateral set	Haircuts and valuation
Hamburg; 17 th century	6 ¼%	<u>Initially</u> : precious metals in form of coins, bouillon, silver ware, jewels <u>Since 1630s</u> : non-perishable goods and merchandise; municipal bonds; real estate	HC at least 25%
Sweden, 1668	6%	Mainly land, but also silver, gold, copper	HC: 50% on town properties, 1/3 for land property
England, 1694	5%	“Tallies, lottery tickets, East India bonds, pieces of eight, bouillon and cargoes”. Charter of 1694: “possessions whatsoever”; “any goods, wares, merchandise whatsoever”.	HC: Sub-committee to establish “proportions” of securities to be lent against. Valuation: Sub-committee to establish rules on “values” against which to lend
Scotland 1696	6%, reducible to 4% in case of full compliance	Personal security: “two sufficient cautioners”, but loan not to exceed 500£; Real security: unencumbered land, and one sufficient cautioner (General rules and bank rules for lending)	HC: Land: 1/3 (loan not to exceed 2/3 of unencumbered land value). Valuation: Borrower to give “true accompt of the value of the lands” (General rules and bank rules for lending)
Leipzig 1698 (Regulation)	“7, 8, 9 or more per cent”	Jewelry, gold, silver, tableware, tin copper, various merchandise; Land and estates Term deposits with Leipzig Banco	HC: Land: 50%; Gold and silver ware: 25%; Usual merchandise: 50%; if “confirmed quality”: 33% Non-usual merchandise: 66%; Jewelry: 50% or 66% depending on quality. Valuation: done by sworn experts; fees to be paid by borrower
Berlin	4%	In 1806: precious metals, merchandise, bills of exchange, shares and debt instruments of specific companies and the state, real estate with special approval.	Article 32 of the Regulation of 1766 gives detailed information on haircuts on precious metals, depending on purity.

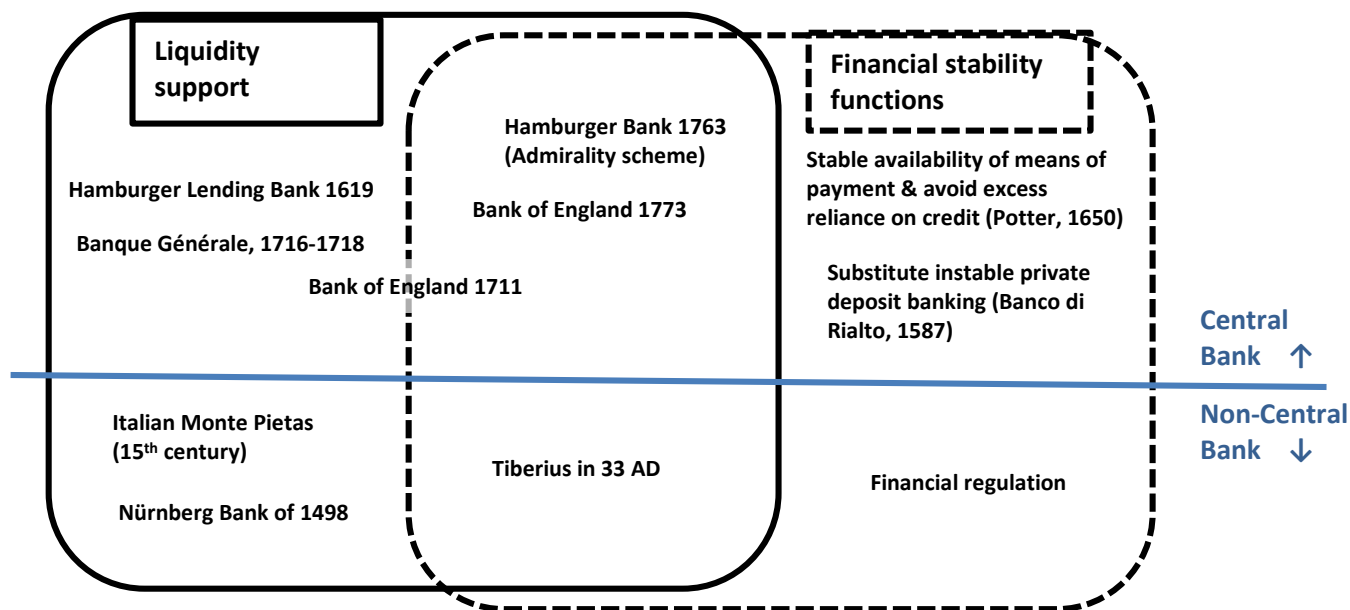
Important to note that LOLR is not the only financial stability related function of central bank:

- Substituting instable deposit banking (Banco di Rialto, 1587)
- Preventing excessive reliance on credit (Bank of England) and related financial instability
- Stabilising and increasing amount of means of payment, improving the general liquidity of debtors, making less likely their liquidity-induced default, and in particular contribute to avoid liquidity squeezes occurring in context of (temporary) balance of payment deficits

For the LOLR, one may distinguish between:

- Individual stressed debtor support
- Systemic LOLR to prevent a financial crisis

Financial stability functions of central banks and the LOLR



Individual stressed debtor support by public banks goes back to Italian “Monte di Pietas” in 15th century. Lending arm of Hamburger Bank had LOLR objective:

“According to experience, which also has been reported bitterly to the City Council, people who need to borrow substantial amounts of money in emergency and moreover for their business have to pay excessive interest rates, and pledge collateral, to egoistic, advantage-seeking individuals, in contradiction with Christian love. Therefore, the City Council, to help the deserving poor and anyone else, has decided to establish a lending bank (Lehn Banco) with the following specification, such that everyone can as of now get funding there at a fair interest rate.”

Examples for Bank of England and Banque Générale in the decade 1710/20.

First large scale, systemic LOLR measure by central bank seems to have been the one by the Hamburger Bank in 1763. Europe-wide financial crisis as described by Schnabel and Shin (2004). Hamburg, Amsterdam, and BoE all took measures:

- Hamburg: special LOLR scheme with particular widening of collateral set with unusually large recourse to this scheme and to the normal Lombard facility
- Amsterdam: also LOLR, but only limited extension of collateral (from species to bouillon) – see Quinn and Roberds (2015)
- BoE: substantial liquidity outflows, lowest end of year precious metal reserve within a century – eventually limiting the ability to act as LOLR (e.g. Lovell, 1957)

Table 9: Hamburger Bank 1763 balance sheet in 1000 Mark Banco; with changes to 1762 (Sieveking, 1933)

Cash (silver)	4242	(+93)	Deposits	9002 (+2505)
Lombard	2650	(+2125)		
Admiralty (special Lombard)	500	(+ 500)		
Claims to city of Hamburg	1610	(-213)		
<i>Total assets:</i>	<i>9002</i>	<i>(+ 2505)</i>	<i>Total liabilities</i>	<i>9002 (+ 2505)</i>

Table 10: Bank of England, simplified end 1763 balance sheet, in 1000 Pound Sterling, and changes relative to 1762 (Annual BoE BS data provided on BoE website)

Government debt	11,686	(+0)	Capital	10,780	(+0)
Coin and bullion	362	(-2,691)	Notes in circulation	4,992	(-758)
Other Government securities	4,576	(+1,268)	Deposits	2,929	(-414)
Other securities	2,914	(+468)	Other liabilities	837	(+217)
<i>Total assets:</i>	<i>19,538</i>	<i>(-955)</i>	<i>Total liabilities</i>	<i>19,538</i>	<i>(-955)</i>

The first central banks... seen from today's perspective

	Barcelona (1403)	Genoa (1407)	Venice (1587)	Amsterdam (1609)	Hamburg (1619)	Stockholm (1668)	England (1694)	Vienna (1703)	Paris (Law) (1716)	Paris (1776)	USA (1791)
Issuance of central bank money											
Based on exclusive public charter											
Pursuing public policy objectives											
Convertibility and value stability											
Increasing monetary base											
Public ownership											
LOLR											

But: BoE was King of central banks from 1700-18[70], with unmatched size, an excellent performance, and its private capital scheme being numerously copied

Conclusions:

- (1) Defining central banking is straightforward;
- (2) Riksbank and Bank of England were not the first central banks, but central banking was invented on the continent;
- (3) Early central banks had a clear policy mandate and orientation towards public objectives; There was a clear concept of central banking
- (4) Already in the 17th century, diversification of assets into claims towards governments and/or lending to private borrowers co-existed to varying degrees.
- (5) CB independence was a major topic with various solutions tried during the centuries before 1800
- (6) The LOLR to individuals was in public bank charters already in the 15th century, and systemic large-scale LOLR operations were done at the latest in 1763.

Thank
you for
your
attention

