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## Rules for a lender of last resort: An historical perspective <sup>☆</sup>

Michael D. Bordo <sup>a,b,c,\*</sup>,<sup>1</sup><sup>a</sup> Rutgers University, United States<sup>b</sup> Hoover Institution, Stanford University, United States<sup>c</sup> NBER, United States

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### ABSTRACT

The Federal Reserve was established in 1913 to be a lender of last resort. Paul Warburg, its principal architect had in mind that a U.S. central bank would follow Bagehot's strictures 'to lend freely at a penalty rate' in the face of a scramble for high powered money. Yet the Federal Reserve Act never spelled out how the Fed was supposed to act as an LLR. This omission came to the fore in the Great Contraction 1929 to 1933 when the Fed failed to prevent four banking panics which turned a serious recession into the Great Contraction. Reforms in the 1930s corrected some of the Fed's failures but clamped down on financial activity for 40 years. The financial crisis problem returned in the 1970s with financial liberalization. The Fed abandoned Bagehot's strictures and adopted the 'Too big to fail' doctrine and 'creative ambiguity'. This policy shift contributed to moral hazard and created new threats to financial stability with the rise of the 'shadow banking system'. The subprime mortgage crisis prompted the Fed to take unprecedented LLR activities which have opened up a Pandora's box of perils. The Fed has moved away from rules based policy in its LLR function.

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### 1. Introduction

The lender of last resort (LLR) is one of the earliest and most crucial functions for a central bank. Instances of lender of last resort actions can be traced back through several centuries, at least since the advent of fractional reserve banking (Kindleberger, 1978). Discussion about the appropriate policies central banks should follow as a LLR have long been intertwined with discussion over the appropriate rules that monetary authorities should follow to allay financial panics. Henry Thornton and Walter Bagehot were the pioneers in clearly stating the rules to follow. In this paper I define the concept of a LLR, then consider its historical origins in England and survey its history in the United States from the National banking era to the advent of the Federal Reserve. Much of the paper describes how the Fed evolved as a Lender of Last Resort in the 20th century.

The Fed was established primarily to prevent the banking panics that plagued the 19th century yet the Federal Reserve Act never spelled out exactly how the Fed was supposed to act as an LLR. This omission came to the fore in the Great Contraction 1929 to 1933 when the Fed failed to prevent four serious banking panics which turned a serious recession into the worst downturn in our history.

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\* Correspondence address: Rutgers University, United States.

E-mail address: [bordo@economics.rutgers.edu](mailto:bordo@economics.rutgers.edu)

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Reforms in the 1930s corrected some of the failures of the original Federal Reserve Act and also clamped down on financial activity so that for 40 years there was little financial instability.

The financial instability problem returned in the 1970s with financial liberalization and the Fed became very active in heading off crises. However it changed its approach to LLR and abandoned Bagehot's and Thornton's strictures adopting the Too Big to Fail doctrine and constructive ambiguity. This shift in policy contributed to moral hazard and combined with ongoing financial innovation created new threats to financial stability with the rise of the shadow banking sector.

The subprime mortgage crisis of 2007–2008 prompted the Fed to take unprecedented LLR actions which helped allay panic. However its new actions opened up a Pandora's box of perils for the future. I conclude with an evaluation of the Fed's LLR policies and make the case for more rule like behavior.

The 2007–2008 crisis led to significant financial reform with parallels to the 1930s in the Dodd Frank Act of 2010. These are briefly evaluated in a postscript.

## 2. Some definitions

A lender of last resort is a monetary authority who can allay an incipient banking panic – a scramble for liquidity – by timely assurance that it will provide whatever high powered money is required to satisfy the demand. A banking panic represents a widespread attempt by the public to convert their deposits into currency and in response an attempt by commercial banks to increase their reserve holdings relative to deposit liabilities. A banking panic can occur in a fractional reserve banking system when an important bank failure or series of failures leads to bank runs which in turn become contagious threatening the solvency of otherwise sound banks. In a more modern context a lender of last resort needs to accommodate liquidity shocks before they have systemic consequences.

## 3. Origins of the lender of last resort in England

The origin of the concept of lender of last resort goes back to the end of the 18th century in England when Sir Francis Baring referred to the Bank of England's role as a 'dernier resort' (Grossman, 2010, page 99). The principal proponents of the concept were Thornton (1802) who urged the Bank of England to allay a panic by lending freely to the money market on the basis of sound collateral. Walter Bagehot formulated Bagehot's Rule(s) in 1873: (1) In times of crisis the Bank should lend freely in the face of an internal drain (a liquidity crisis) and to discount all sound collateral; (2) to charge a high (above market) rate in the face of an external drain (an outflow of the Bank's reserves); (3) to lend freely at a high rate (often referred to as a penalty rate) when faced with both an internal drain and an external drain; (4) Prevent illiquid but solvent banks from failing; (5) Clearly state the policy in advance (Humphrey, 1975; Bordo, 1990).

To understand Bagehot's Rule(s) it is essential to understand the context of the financial system in England in the late 19th century. The key elements of that system were (a) adherence to the classical gold standard i.e. maintain convertibility of the pound sterling into a fixed weight of gold; (b) that the Bank of England was a joint stock, profit maximizing bank with public responsibilities; (c) that it was operating in a very sophisticated and stratified financial system whose main components were: the Bank of England; merchant banks which financed trade; bill brokers who dealt in bills of exchange in a very deep and liquid market; discount houses which purchased and rediscounted bills of exchange and which served as an intermediary between the Bank of England and the banking system; the commercial banks.

Under the gold standard the Bank of England's gold reserve (the ultimate monetary base) had to clear international payments imbalances and serve as the base of the domestic financial system. Hence in the face of a liquidity shock or domestic banking panic, gold convertibility was sometimes temporarily suspended by a 'Treasury Letter' to allow the Bank to supply the necessary bank notes to meet the liquidity demand. A temporary suspension only worked because adherence to gold was viewed as credible. For a private central bank to freely discount commercial bills it had to avoid credit risk. In the late 19th century the collateral that was taken in rediscount operations was two named bankers acceptances used to finance international trade. These bills were issued by reputable merchant banks (such as the Rothschilds). The Bank would also charge an above market rate on these loans to maximize its profits (Goodfriend, 2012).

The Bank of England did not deal directly with individual banks in its LLR operations. It generally provided liquidity anonymously to the market. The commercial banks would turn to the discount houses to rediscount their paper, and the discount houses in turn, would go to the Bank of England for accommodation. The Bank's discount rate 'Bank rate' served as the anchor to the financial system.

According to Capie (2002) 'The mechanism can be envisaged as the central bank having a discount window made of frosted glass and raised just a few inches. Representatives of institutions could appear at the window and push through the paper they wanted discounted. The central banker would return the appropriate amount of cash, reflecting the going rate of interest. The central banker does not know, nor does he care, who is on the other side of the window. He simply discounts good quality paper or lends on the basis of good collateral. In this way institutions holding good quality assets will have no difficulty in obtaining the funds they need. Institutions with poor quality are likely to suffer. In times of panic the interest rate would rise'.

The Bank of England was a chartered bank of issue with a public responsibility. It took the experience of a number of serious banking panics from 1825 to 1866 when the Bank acted to put its shareholders interest above that of the rest of the financial system, before it fully accepted Bagehot's (1873) Responsibility Doctrine to put the public's interest first.

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