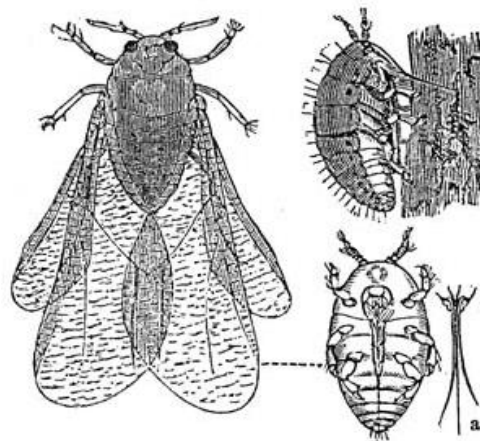


Economic crises and the lender of last resort

By [V.Bignon](#) and [C. Jobst](#)

Economic history and wine may contribute to understanding contemporaneous economic issues. The wine crisis caused by phylloxera in the late 19th century helps identify the causal impact of refinancing operations of central banks (CBs) on firms' defaults. The geographical distribution of the branches of the French CB meant that varying ease of access to discounting bills of exchanges varied when the crisis struck. Regions that benefitted from easier access to central bank refinancing exhibited a lower increase in default rates during the crisis.

Phylloxera, the near-microscopic bug that destroyed the French vineyards



Source : <https://fr.wikipedia.org/wiki/Phylloxera>

Who should access CB refinancing with which assets?

According to two reports of the Bank of International Settlements ([2013](#), [2015](#)), the answers vary widely among CBs today. Some CBs like the Eurosystem give almost every financial institution direct access to their refinancing operations against a widely defined set of collateral including e.g. corporate bonds or credit claims. Other CBs restrict their normal operations to a small set of counterparties allowing them to use only the most liquid investment-grade assets like treasury bills or government bonds. In normal times these differences matter little. When the central bank is the lender of last resort, those details may matter a lot.

In a [new paper](#), we show that the operational framework of central bank matters substantially in crisis time. Having access to the CB and disposing of the required collateral can determine whether or not many institutions may survive.

Using historical events to establish causality

We evaluate the real cost of having an overly restrictive eligibility rule on the basis of a historical study. It is important to establish the effects of eligibility on the economy and not the impact of other CB policies such as interest rate changes or of government intervention such as increases in the fiscal deficit.

History provides an example that allows us to circumvent the difficulties associated with constructing a proper counterfactual.

What is needed is two groups of identical banks, with one being eligible for central bank refinancing and the other not. In reality, however, eligibility is always tied to some economic criteria so that non-eligible counterparties (and assets) differ by definition from eligible counterparties in a number of important economic aspects, rendering a proper comparison between the two groups impossible.

The economic impact of phylloxera in 19th century France

The wine crisis in 19th century France caused by the appearance of the phylloxera in 1863 provides a unique natural experiment to circumvent the constraints that normally arise when testing the effects of eligibility on economic outcomes. Innocuous in its natural habitat, the near-microscopic bug destroyed the vine when it hanged on it.. Indeed, Phylloxera sucks out the sap from the vines and ultimately causes its death, which entailed the disappearance of 40% of the French vineyard at the time. The result was a sharp decrease in the share of wine as a percentage of GDP. While the French production of wine represented 6.4% of GDP in 1862, by 1890 the revenues from wine production had dropped to 2.75%. This shock was so huge that it increased both [the crime rate](#) and the default rates of non-agricultural firms.

Against this background of an unknown disease, the fiscal authorities did not react, nor did the Banque de France as it was forbidden by law to refinance the farmers. This income shock was not smoothed and hence was transmitted to the other sectors of the economy. From the perspective of the design of a scientific studies; this allow ruling out the opinion that the crisis was caused by an increase of risk-taking behaviors triggered by the certainty of the access to the CB discount window in which economic agents had bet on a bail-out by the central bank. The Banque de France was however especially helpful in containing the contagion from the crisis to the non-agricultural sector thanks to its network of branches and its eligibility rule. In the 19th century the Bank implemented its monetary policy by purchasing short-term debt. In the language of the time, it was discounting bills of exchange. The purchase made the Bank liable for collecting the payment at maturity at the door of the drawee and, to this end, it operated a network of branches across the French territory and employed bank tellers.

Using the density of the branches to proxy ease of access to Bank's discount window

The choice of location of the Banque de France branches is explained by the history of the Banque and by its relationship with the Parliament and the other banks. Thus, the density of the branches varied across France, which means that, in districts with more branches, more firms had access to the Bank's discount window. We check whether districts with more branches experienced lower increases in default rates than districts with fewer branches. The estimation of the impact of the eligibility rule required the hand-collection of a uniquely rich administrative dataset documenting the number of defaults and the stock of non-agricultural firms in each of the 85 French districts as well as local information on eligibility and the availability of other banking services.

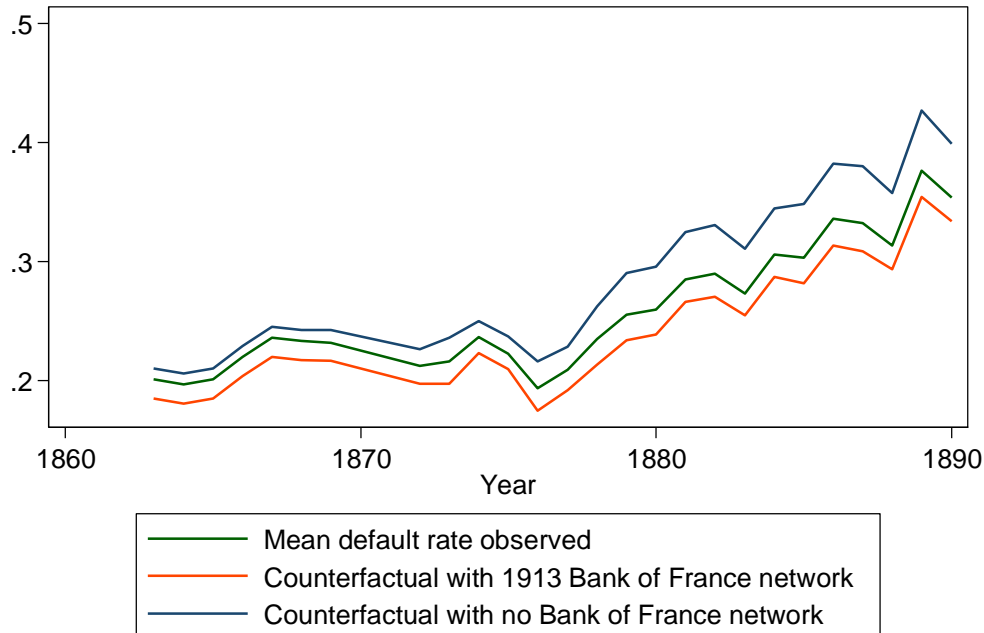
This empirical setup is well suited for evaluating the eligibility framework. First, the arrival of phylloxera is clearly exogenous to having a local access or not to the central bank. Second, because the phylloxera affected some districts more than others and spread gradually throughout France, we can better control for other confounding factors. Last, we can exclude a potential counter-cyclical impact of fiscal policy because the government did not intervene, except by a funding of research in agronomy.

Access to central bank refinancing lowered firms' default rates

The estimations show that better access to central bank lending provided by local branch offices of the Banque de France significantly lowered defaults by non-agricultural firms. A counterfactual exercise

shows that defaults would have been 10% to 15% higher in the absence of the Banque de France branch network, which is an economically significant magnitude. Importantly, the decline in defaults did not require the central bank to purchase loss-making assets, which was surely the outcome of a tight risk management framework. We can thus exclude a bail-out by the Banque de France of the private sector by taking on worthless assets.

Figure 1: Observed/counterfactual default rates of non-agricultural firms, France, 1863-1890.



The chart compares the impact of having restricted eligibility (blue line) or wide eligibility (orange line) compared to the actual data (red line).
Source: Bignon and Jobst (2017)

To summarise, when a crisis hits the financial system, eligibility suddenly becomes a key factor and often central banks adjust their eligibility framework in response to crises. This research shows that with the eligibility framework, the devil is in the details. Our results are consistent with the view that broad eligibility helps mitigate the adverse effects of economic crises. If there is a lesson to draw from this past experience in terms of today's central bank policy, it is to stress the importance of the operational framework used by the central bank to implement its monetary policy.