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International shocks and the balance sheet of the Bank of France under the classical gold standard

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ABSTRACT

Under the classical gold standard (1880–1914), the Bank of France maintained a stable discount rate while the Bank of England changed its rate very frequently. Why did the policies of these central banks, the two pillars of the gold standard, differ so much? How did the Bank of France manage to keep a stable rate despite international constraints? This paper tackles these questions and shows that the domestic asset portfolio of the Bank of France played a crucial role in smoothing international shocks and in maintaining the stability of the discount rate. As a result, the French discount rate was only changed in exceptional circumstances, for which a change in the English rate was not a sufficient condition.

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1. Introduction

The textbook account of the classical gold standard emphasizes the crucial role of the “rules of the game” in international adjustments. Two components of the “rules of the game” should be observed in central banks’ practices (Whale, 1937; Nurdse, 1944; Bloomfield, 1959). First, central banks should raise their discount rate when their gold reserves decrease. Second, they should not sterilize gold flows; that is, it is unwise to expand (or reduce) domestic assets to offset outflows (or inflows) of gold. Adherence to these “rules” implies that domestic assets of central banks are positively correlated with international assets (e.g. gold) but negatively correlated with the domestic interest rate. It is well known that the Banque de France (BdF henceforth) – one of the main pillars of the classical gold standard along with the Bank of England and the Reichsbank – did not frequently change its discount rate between 1880 and 1913.¹ Regarding the second component of the

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E-mail addresses: gbazot@gmail.com (G. Bazot), bordo@econ.rutgers.edu (M.D. Bordo), Eric.MONNET@banque-france.fr (E. Monnet).¹ Gallarotti (1995, p.219) claims that the BdF was the true hegemon of the gold standard as it served as a lender of last resort to England in 1890 and

rules of the game, Emanoil (1932); White (1933), and Bloomfield (1959) claimed – using annual data – that the BdF did not behave as expected: its discount portfolio varied negatively with gold flows between 1880 and 1913.²

In this article, we show that keeping the BdF discount rate stable required a negative correlation between domestic and foreign assets. This made it possible for the BdF to maintain a stable rate when the Bank of England (BoE) changed its discount rate. Since the world money and capital markets were centered in London, the BoE's rate pushed other central banks to align their interest rates to the English rate (Eichengreen, 1987). An increase in the English rate pushed the liquidity ratio and gold reserves of the Banque de France down, and pushed the money market rate in Paris up. However, the BdF did not generally increase its discount rate in response to such market pressures. Instead, the domestic portfolio of the BdF (domestic discounts and advances) increased in response to higher demand by banks at the central bank's discount window. As a consequence, the expansion of the domestic assets of the BdF stabilized the spread between the French money market rate and the BdF discount rate, it sterilized the effects of gold flows on the economy, and the BdF discount rate could remain much more stable than the BoE discount rate. Narrative evidence from the minutes of the BdF's board meetings and contemporary writings support the view that the central bank sought to preserve the stability of the French discount rate and that French policymakers were well aware that it implied sterilization of gold flows. In order to explore these mechanisms and channels, as well as to quantify both their timing and their magnitude, we use a VAR analysis to study the response of French financial and economic variables to an increase in the BoE discount rate. Consistent with previous literature on France under the gold standard, our results emphasize that the BdF used the gold premium (until 1900), the foreign portfolio (after 1906), and, most of all, its large gold stock to avoid following the official discount rate of the BoE. The BdF – unconstrained by a legal reserve ratio – could allow for short-term gold losses in order to keep the discount rate stable. We then show that it nevertheless needed to be supported by the adjustment of the domestic portfolio within the balance sheet of the BdF, since demand for liquidity increased at the discount window. Gold losses and the increase in the domestic portfolio were two sides of the same coin. Both were necessary to stabilize the money market rate and avoid changes in the official discount rate. The previous literature has neglected this key mechanism in favor of focusing on gold and the gold premium, although Pallain (1908) and Emanoil (1932) mentioned it clearly, if briefly. In our VAR estimations, we control for imports, prices, and railway revenues in order to show that a reaction to an international shock (i.e. a change in the BoE rate), not domestic business cycles, indeed caused these adjustments. Moreover, the fact that a decrease in the liquidity ratio occurred immediately after an increase in the BoE rate (and was accompanied by an increase in the BdF domestic portfolio and a decrease in the spread between money market and official discount rates) makes it unlikely that short-term changes in French preferences caused the short-term changes in the liquidity ratio observed in the VAR.

This article also contributes to the literature by accounting for non-linearities in the determination of the official discount rate of the Banque, a point that follows directly from our analysis of the central bank's balance sheet. The balance sheet of the BdF reacted to changes in the English discount rate and international capital flows immediately and systematically while the BdF discount rate was modified very infrequently. As a result of this, the official discount rate of the BdF did not depend linearly on either domestic variables (domestic interest rates, discounts and advances) or international variables (gold flows, exchange rate). However there were a few occasions when the Banque de France did change its discount rate in response to the Bank of England. Looking at the transcripts of BdF policy decisions available in the archives, we show that these interest rate changes required the presence of additional factors, especially undue pressure on the gold stock and on the exchange rate. Previous studies of French central banking based on OLS estimations found that neither exchange rate deviations (Gallarotti, 1995; Morys, 2013) nor the level of the liquidity ratio (Tullio and Wolters, 2003) affected the discount rate. Not surprisingly, these studies concluded that standard reaction functions explain little of the variation of the French discount rate compared to other countries (Gallarotti, 1995; Contamin and Denise, 1999). In the last part of this paper, we propose to account for the prevalence of a “switch” in the policy reaction function of the BdF, using methods (Markov switching estimations) that no scholar has yet applied to the study of central banking under the gold standard. Two cases, or regimes, as the econometric literature terms them, stand out. The first regime allowed for the discount rate to remain stable, whereas the second regime led the BdF to change its discount rate because of exceptional pressure on the gold stock and on the exchange rate. Accounting for the regime switch, we find that the BoE rate, the gold stock, and the deviation of the exchange rate from the gold points in fact determined the BdF's decision to change its discount rate. Thus, we show that, although normally the BdF did not follow the BoE, it did on some occasions when both the state of the gold stock and the exchange rate had deteriorated more than usual.

Multiple economic historians consider the BoE and the BdF to be the two extremes of the spectrum of the monetary regime during the classical gold standard (Whale, 1937; Bloomfield, 1959; Gallarotti, 1995; Reis, 2007). While extensive work has addressed the objectives and interventions of the BoE under the gold standard, this paper focuses on the opposite

(footnote continued)

1906–1907. Between 1880 and 1914, there were only 30 changes in the French official rate of discount versus 194 in the Bank of England's rate. Such a peculiar behavior was the subject of many discussions by contemporaries in France and other countries alike and it has always been treated as a curiosity in the subsequent literature on French monetary policy under the gold standard (White, 1933; Whale, 1937; Bopp, 1952; Nishimura, 1995; Gallarotti, 1995; Contamin, 2003; Rodgers and Payne, 2014). See our discussion in Section 2. It strongly differed from BdF policy under bimetallism when the official discount rate changed frequently (Roulleau, 1914; Bopp, 1952; Flandreau, 2004).

² We show in Section 4.1 that this correlation is actually not statistically significant at the annual level. It is observed, however, at the monthly level after an increase in the English interest rate.

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