



# The suspension of the gold standard as sustainable monetary policy

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## ABSTRACT

This paper models the gold standard as a state contingent commitment technology that is only feasible during peace. Monetary policy during war, when the gold convertibility rule is suspended, can still be credible, if the policymaker's plan is to resume the gold standard in the future. The DSGE model developed in this paper suggests that the resumption of the gold standard was a sustainable plan, which replaced the gold standard as a commitment technology and made monetary policy time consistent. Trigger strategies support the equilibrium: private agents retaliate if a policymaker defaults on its plan to resume the gold standard.

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## 1. Introduction

Traditionally the gold standard has been modelled as an automatic and impersonal monetary system, 'golden fetters', which restricted sovereigns' power over economic policy. The gold standard rule obligated each central bank to maintain the value of the national paper currency in terms of a fixed weight of gold by buying and selling gold at a fixed price on demand. The convertibility rule and reserves set a limit to the money supply and guaranteed almost zero inflation.<sup>1</sup> Yet, if we expand our focus from the relatively short-lived International Classical Gold Standard of 1880–1914 to a wider time horizon, the gold standard and other commodity standards do not emerge as such disciplinarian rules. According to the surveys by Bordo and Kydland (1995, 1996) and Bordo and Schwartz (1997) 21 countries defaulted on the convertibility rule on a total of 38 occasions before World War II. For example, the commodity standard was suspended in France during the French Revolution, in England from 1797 to 1821 during the French Wars, in the US from 1862 to 1878 during the Civil War and in several countries during the First World War.

Instead of a monotonic policy rule, this paper considers the gold standard as a commitment mechanism that restricted monetary policy during normal times, but which became unfeasible during major wars and crises. Because monetary authorities were able to decide how much inconvertible fiduciary money to issue during the suspension periods, they were predecessors of the modern fiat money system. But compared with the hyperinflationary paper money experiments of the

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<sup>1</sup> See calculations by Santoni (1984).

twentieth century, suspensions were relatively successful: in 24 out of 38 cases the inconvertible paper money remained in circulation and the gold standard was resumed without devaluations.

According to Bordo et al. monetary policy under the suspensions was credible, because the gold standard was a contingent rule: during a wartime emergency, when the government needed to collect seigniorage revenue, the gold standard rule could be abandoned temporarily on the understanding that after the emergency had passed safely, convertibility would be restored at original parity. Along the lines of this theory, agents considered the gold standard and the suspension to be essentially the same monetary system and could not think of any feasible alternatives to gold: 'Thus, when an emergency occurred, the abandonment of the standard would be viewed by all to be a temporary event since, from their [the public's] experience, only gold or gold-backed claims truly served as money (Bordo and Kydland, 1995).'

My interpretation of contingency differs from that of Bordo et al. in that I assume the resumption of the gold standard to be endogenous, not exogenous. I chose this alternative approach because it is supported by historical evidence: firstly, the resumption was not an automatic event: the date was unknown during the suspensions or policymakers moved previously agreed resumption date forward; and secondly, on several occasions the return to the gold standard created strong political opposition. In this paper the bad state, war, can lead to two potential defaults. The first default is what Grossman and Van Huyck (1988) call excusable and it occurs when the authority is forced to abandon the gold standard, upon arrival of the bad state. The second potential default follows the monetary authority's decision not to resume the original gold convertibility rule even though the state of the world has switched back to the good state. This default is total and unjustified, and leads to the loss of the monetary authority's reputation. But if the resumption of the commitment rule involves incurring a cost, as in this model, the authority might not have an incentive to resume the rule. A key objective of the model is to define conditions which ensure that the second default does not occur and the gold convertibility rule is resumed.

In this paper I evaluate the question of what makes monetary policy credible in the absence of the commitment mechanism—the gold standard. To avoid getting entangled with the historical details of various suspension periods, I develop a dynamic stochastic general equilibrium model of the gold standard and the suspension, and use it to analyze the extent to which the gold standard functions as a contingent rule. The model demonstrates that the gold standard with a fixed gold reserve ratio is a commitment technology that solves the inflation problem if the economy has nominal rigidities, but the suspension of the gold standard subsequently reveals the problem. Because the money base under the suspension is not fixed to the existing gold reserve, the central bank, in the presence of rigid nominal wages, has an opportunity to expand output and yield seigniorage to the government by issuing inconvertible paper money.

As suspension periods often lasted several years, even decades, the policymaker and the public had time to interact, and, therefore, my model emphasizes the paramount role of the public's expectations and policymaker's reputation in making the suspension, and potential future suspensions, credible regimes. Following Chari and Kehoe (1990), the model adapts Abreu's (1988) optimal penal codes under discounting to policy games played between a benevolent, strategically behaving central bank, and a large number of private agents, who behave competitively. Resumption of the gold standard is supported by a reputational equilibrium in which private expectations display an extreme form of trigger-like behavior: a single deviation by the central bank from its announced plan to resume the gold standard causes the economy to revert permanently to its worst possible state, which, in this commodity standard setup, I call a commodity *money*. If compared with the gold standard, the commodity money regime, where only gold coins circulate as a medium of exchange, is inefficient and reduces welfare. The gold standard is resumed if the incentive compatibility constraint is satisfied: the discounted net utility of the adjustment and the gold standard has to be larger or equal to the discounted net utility of default and the commodity money thereafter.

My theoretical analysis produces three main results. Firstly, the suspension is a credible regime, because the resumption of the gold standard is a sustainable plan. The central bank's plan to resume the gold standard at some future point replaces the gold standard as a reputational device, which limits discretionary money creation and solves the time inconsistency problem. Secondly, the model explains why the central bank resumes the gold standard although the suspension, by increasing a degree of flexibility in the economy, proves to be a relatively successful regime. The gold standard is resumed, because it maximizes social welfare in the long-run as during normal times the central bank cannot conduct time consistent monetary policy without commitment technology. Finally, suspension of the gold standard enables the central bank to (i) stabilize output and consumption through private discount policy; (ii) derive seigniorage revenue to the government through public discount policy and (iii) postpone the welfare reducing adjustment to peacetime.

Despite the long-standing interest of economists in the suspensions, only a handful of open market models exist, and the suspension has not been modelled in the general equilibrium, or a credibility and time inconsistency framework. Although many aspects of my model are in the tradition of the relatively recently published classical models on a commodity money standard proposed by Barro (1979), Sargent and Wallace (1983), Goodfriend (1988), Velde and Weber (2000) and Bordo et al. (2003), the fundamental difference is that I model the gold standard as an endogenous domestic monetary policy rule, not as an exogenous fixed monetary constitution or as a fixed exchange rate system. The model is not a complete presentation of the economic policy under the suspension, and I focus on monetary policy and theory. Neither do I model some specific historical period but describe a new framework which includes key elements of the suspension.

The paper proceeds as follows. In Section 2, I present the baseline model, and in Sections 3 and 4 I use this model to analyze monetary policy under the gold standard and the suspension. In Section 5, I characterize the sustainability of the resumption plan and develop some numerical examples. The final section acts as a conclusion to the foregoing.

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