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The Gold Standard Peripheries

Monetary Policy, Adjustment and Flexibility in a Global Setting

Edited by Anders Ögren and
Lars Fredrik Øksendal

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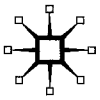

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Bergen and Paris

ANDERS ÖGREN
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List of Abbreviations

BMR	bimetallic ratio
CIC	Comité Inteventor del Cambio
GDP	gross domestic product
GNP	gross national product
IMF	International Monetary Fund
IRF	impulse response function
LLRI	log-linear rate of inflation
LMU	Latin Monetary Union
MRI	mean rate of inflation
MRPC	mean rate of price change
ODR	official discount rate
ROA	return on assets
ROE	return on equity
SDHPT	standard deviations of the observed price value from the corresponding HP-trend
SDM	standard deviations of inflation from the mean values
VAR	vector-auto-regression
WPI	wholesale price index

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The Case for the Peripheries

Anders Ögren and Lars Fredrik Øksendal

In a world that is presently experiencing increased volatility and pressure on exchange rates, and when one of the most ambitious fixed exchange rate projects in history – the European Monetary Union – is on the brink of destruction, the classical gold standard again rises as a spectacular event in global monetary history. How, despite all the difficulties inherent in fixed exchange rate regimes, could this system remain for such a long time only to be interrupted by the outbreak of World War I? Even more intriguing is the question of how all the small, peripheral and capital-importing economies successfully managed to remain on the gold standard – especially as these economies were the first to experience deflationary pressure in times of international capital shortage. Consider: adherence to the gold standard was up to each economy and it was thus always possible for economies suffering from the negative effects of the fixed exchange rate to opt out. Yet, in Western Europe this only occurred on one occasion; when Portugal, the second country to adopt the gold standard in 1854, left the gold standard as a result of the Baring crisis in 1890.

For almost a century, the gold standard has served as an enigma for economic historians and economists interested in the past. From an abundance of perspectives, drawn from different disciplines, this book examines the monetary regime that dominated the world economy for almost four decades before World War I and again, briefly, during the interwar period. Seemingly, no stone has been left unturned. Presented with yet another volume claiming new insights, the enlightened pundit has earned the right to ask what is new.

The motivation for the present volume is a twofold lacuna in the literature. By tradition, the literature on central banking and monetary policy under the gold standard is dominated by accounts built on empirics from

the core countries of the regime. Both in regard to single country studies and as a basis for generating overall, systemic understanding, the experiences of the United Kingdom, France, Germany and the United States vastly overshadow those of other countries. The empirical asymmetry is arguably justified by the simple truism that major powers matter; minor powers, less so or not at all. The importance in terms of economic weight and shaping rules notwithstanding, the core was *not* the gold standard. As a world system, the gold standard knitted together minor and major countries, sophisticated and less-advanced economies, through their common choice of gold as a monetary reference. Using the core as a point of departure for understanding the gold standard easily underestimates the diversity of the gold standard experience. As Flandreau and James recently argued, the gold standard must be assessed *'from the point of view of each country's needs, constraints and potentials'*.[1] Thus, to obtain an overall grasp, one needs to move beyond the core and take into account the varied experience of other countries.

To the extent that regions outside the core major Atlantic economies have caught the attentions of gold standard researchers, this interest has been concentrated on the experience of the Latin American world and Mediterranean Europe. In the early 1960s, scholars such as Triffin and Ford emphasized that the adjustment process functioned differently in the periphery than in the core, resulting in more volatile economic outcomes.[2] Around the turn of the century, Martin-Aceña and Reis followed in their footsteps, editing an important anthology on the gold standard in the periphery.[3] Again, drawing on Latin America and Mediterranean Europe, strong common patterns were identified. Their typical peripheral economy was a dependent country; i.e. strongly dependent on the export of a limited number of articles, chiefly raw materials or foodstuff, with prices set in international markets. The volatile nature of export incomes created strong boom–bust cycles that, in combination with exogenous set prices, made traditional adjustment working through changes in relative prices difficult and often fell squarely on domestic demand. Thus, for many countries, opting for going periodically off gold or adherence to the gold standard in name only became a logical outcome.

The insights gained from these studies notwithstanding, the world outside the gold standard core was more than the traditional periphery; i.e. Latin America and Mediterranean Europe. While operating with *one* core catches important structural characteristics, operating with *one* periphery does not. There were several *peripheries* that, in some areas, differed significantly from each other. One of these was the advanced smaller nations of North West Europe which, as with the traditional

periphery, were *regime takers* with limited influence on the regime, but in terms of economic development, political institutions and cultural links enjoyed strong ties with the gold standard core. This group, which include Belgium, the Netherlands, Switzerland and the Scandinavian countries, can be labelled the advanced periphery. The group adhered consistently to gold standard commitments and enjoyed favourable ratings in international credit markets. Another periphery that hitherto has attracted even less attention is Central Europe, which ranged from countries or regions that resembled the advanced periphery, to somewhat backward countries where subsistence farming remained the mainstay of the economy. The bias in the study of the peripheries constitutes the second lacuna.

The emphasis on the core and the lack of attention rendered to peripheries other than the traditional are the point of departure for the present volume. We argue that a more systematic examination of the peripheries in the plural sense, not excluding the traditional periphery of Latin America and Mediterranean Europe, will enhance our understanding of the gold standard. In particular, we will argue that such a broadening of the empirical base will capture the variety in gold standard experiences. However, although we strongly believe that there never was one single gold standard experience, there were strong patterns in terms of common challenges across differing structural positions.

Silver or gold?

The classical gold standard is still a strong symbol of a successful international monetary system. In consequence, the choice of gold as a monetary reference is often seen as making a fundamental difference. Thus, the fact that the monetary standard was based on gold in itself made the regime completely different from other mono-metallic specie standards; such as, for instance, the silver standard. The choice of metal was therefore instrumental for the success of the system.

It is true that the use of gold as the anchor should mean a tighter more disciplined monetary policy than the use of a less precious metal, since the higher transportation costs for bulkier metals would allow a larger deviation from the par value before it became profitable to move bullion across borders.

In reality, the change from the silver to the gold standard did not make any significant difference. It did not produce any shifts in international or domestic interest rates, in access to credit, or in the size of the money supply. Eichengreen and Flandreau have shown that the

fact that an economy was tied to a specie standard was considerably more important than the standard chosen. The importance of the gold standard has to be looked for elsewhere than in the choice of the nominal anchor.

Managed or automatic?

There are usually two strands of explanations for the successful working of the gold standard. The first strand is based on the idea that it was a system that was managed from above, where the central banks in the economic centres – most notably the Bank of England, but also Banque de France and the German Reichsbank – acted as facilitators of the system. Basically, this explanation is based on two empirical observations: that central banks did lend to each other in times of financial distress, and the dominant position of the pound sterling as reserve currency.[4] Not surprisingly, the second strand harbours an absolute *contraire* position: that the gold standard system was completely automatic and that no central bank had the opportunity to manage the system. According to this notion, capital flows would force central banks to follow certain policies in order to maintain the fixed exchange rate. Thus, an automatic adjustment mechanism was more or less embedded in the system. This explanation for the success of the gold standard focused on central banks as price-takers in a global economy where convergence through purchasing power parity would make national central banks too small to be able to have a real effect international capital flows at large.[5]

Empirically, it appears that both of these sets of explanations can find support. Individual preference for one explanation over another often mirrors the focal point of the study. By extension, this means that both explanatory models for how the classical gold standard worked are seriously flawed because they are both too simplistic in their respective ways. In short, reality of the gold standard was much too complicated to be summarized in such a stylized way as these models suggest. It is clearly not the case that one central bank (or a small number of them) managed the gold standard in all the countries that independently decided to tie their respective currencies to gold. But it is equally not true that central bank policies had no effect, because all were tied to gold. The decision to tie a currency to gold was by no means irreversible – which the literature often tends to forget. Moreover, countries managed the gold standard in completely different ways; there were numerous ways of defining what kind of assets constituted reserves, to what extent gold was needed to back note issuance, what kind of policy responses could

be used, and so on. Thus, the responses to, and the outcomes of, international capital flows were not homogeneous.

There are three main reasons why the gold standard was neither managed by a central economy nor automatic but, rather, guided by the concerns and constraints of the countries in question:

- the first reason was *the role of politics*, since politics decides to what extent an economy will go through deflationary pressure to save the fixed exchange rate;
- the second reason is that *the fiscal system was instrumental* for the opportunity of each gold standard nation either to bring in capital from international markets in times of capital scarcity, or to keep up liquidity by breaking the rules of the game without having to abandon the fixed exchange rate;
- the third reason is that, over time, *central banks in the gold standard economies were able to consolidate their positions* by building up reserves and, thus, to create increased room for manoeuvre; i.e. provide increased opportunities to sterilize capital flows. This was most important in small capital-importing economies – which tends to be the case for many peripheral economies.

So, it was a managed system, but it was not managed by any particular central bank at the centre of the system; instead, each country was obliged to resolve its own commitment to the monetary regime. The international aspect was fundamental as access to international capital markets was essential for the system to work. By extension, this means that economic growth was of importance because, should international capital dry up, there would be considerable pressure on the system.[6]

The problem of adjustment and the 'rules of the game'

At the forefront of historical monetary studies is the question of adjustment; what kind of policy should a country presented with a persistent balance of payments deficit follow and what kind of mechanism describes the return to equilibrium. In the traditional interpretation of the gold standard, adjustment has been seen in light of the price–specie flow mechanism, while central bank policy has been understood as reflecting the so-called 'rules of the game'. Thus, a balance of trade deficit followed by gold outflows would reduce the domestic money stock and put a downward pressure on prices, leading to a reversal of trading fortunes. According to the rules of the game, central banks would strengthen the

adjustment process by responding to outflows of gold by increasing the bank rate. Thus, the traditional interpretation of the gold standard portrays a semi-automatic adjustment mechanism with a central bank following only one policy target: to maintain the gold convertibility of notes. In this perspective, the gold standard becomes the hard version of a fixed exchange regime.

This interpretation of the gold standard has been remarkably tenacious – even in the face of mounting evidence over recent decades pointing to a more nuanced understanding. Neither with regard to the actual adjustment process nor the policy pursed by central banks does the evidence fit the theoretical expectations. Adjustments did not work through changes in relative prices but, rather, through changes in overall demand, employment and capital movements.

In practice, central bankers took a broader view of policy formation than that called for by the rules of the game and did not necessarily respond to outflows of gold by curbing domestic credit. Moreover, countries enjoying a balance of payments surplus tended to sterilize the impact of inbound gold flows, thereby further putting the price adjustment mechanism out of play. When this traditional interpretation is still persistently applied by many, particularly economists, the reason might be found in the pure beauty of the text-book explanation.

The most important common theme running through the articles in the present volume is how national central banks, representing a broad variety of peripheral experiences, were putting strong emphasis on maintaining some freedom for manoeuvre in their monetary policy. Although their intellectual frame of reference obviously was rooted in the liberal price–specie flow mechanism, the actual policy followed testifies to a surprising willingness to circumvent the impact of this acknowledgment. Depending on the structural position of the country in question, central banks employed numerous devices aimed at limiting the impact of the balance of payments on domestic monetary policy. No central bank adopted the position of the theoretical expectation of simply letting the money stock float with its gold reserves. In understanding the central bank policy of the nineteenth century, we suggest that one needs to move beyond monetary theory and to reduce the weight attached to the gold standard as an international regime. Although, for obvious reasons, the gold commitment (including monetary stability and international credibility) was important, central bankers entertained a much stronger awareness of the domestic impact of policy than hitherto recognized. With some notable exceptions (such as the Swedish Riksbank, with roots back in the seventeenth century), most of the

central banks of the gold standard peripheries were established during the course of the nineteenth century as part of nation-building. The main objective of these central banks was to supply a stable domestic currency.

At the forefront of the initial decisions to tie the currency to specie were the yearning for currency stability as a precondition for an ordered economic life and future economic development. Although the general move to the gold standard from the 1870s onwards was strongly influenced by the desire for a universal currency, central banks did not lose an eye for the domestic side of monetary policy. Rather than seeing central bank policy under the gold standard in the light of one single policy rule – the maintenance of currency convertibility – we suggest that policy must be regarded as a question of mastering two concerns that were sometimes, or even often, at odds with each other: on the one hand, the role of managing domestic liquidity, which would secure a steady supply of credit to the ongoing economic activity; and on the other, fulfilling the fixed exchange rate commitment. Our studies also clearly reveal the fact that many central bankers believed that, in practice, the causal link between international gold flows and the domestic was rather weak, often reflecting quite separate parts of the economy. Thus, central bankers craved some degree of freedom for manoeuvre in order to avoid a situation where the fixed exchange rate commitment played havoc with the banks' role as managers of domestic liquidity.

What made it successful?

There are numerous explanations why the classical gold standard was so successful, but the most plausible explanation is a combination of monetary and fiscal prudence and continuing economic growth. It is, as is evident from the current crisis, much less pressure on exchange rates during times of economic growth. During downturns, and even crises, risk assessments change and imbalances will be regarded with more scepticism, and agents will scramble to get out of those holdings (including currencies) that are regarded as more risky. The classical gold standard was a period of economic growth: crises did, of course, occur (as in 1890 and 1907), but the gold standard remained. This has led some researchers to the conclusion that the gold standard in itself was an engine of international economic growth due to its apparent stability. But there is strong evidence that the monetary regime was not the basis for countries' economic performances and, moreover, that the

monetary regime was not the most important variable when countries were seeking capital on international capital markets.

But, even if the economic growth was not a result of the gold standard but, rather, a reason for its success, it is not a sufficient explanation in itself. Again, why did the crises in 1890 and 1907 (plus the numerous crises on a national scale during the period) not cause the system to break down? The answer has to be political as well as economical; the central banks' monetary policy was, above all, aimed at preserving the gold standard. But, according to the way the system was constructed, it was up to each country within the system to decide how it would handle matters. The classical gold standard had an inbuilt escape clause that it was up to each national economy to use.

What can we learn from the peripheries?

Most of the stylized facts concerning the classical gold standard emanate from what was the case in the most important economy of the system: the UK. But there is an immense difference between the opportunity to run monetary policy under a fixed exchange rate as, for example, the producer of the world's most demanded reserve currency when compared with the circumstances of a small capital and import-dependent emerging economy at the outer reaches of the system.

The Scandinavian central banks, for instance, were not able to maintain the same monetary policy as the Bank of England – an issue which became increasingly apparent in times of crisis. But the way issues were handled in small peripheral economies in relation to the global economy during the classical gold standard will give us further understanding on how the gold standard system actually worked. More importantly, it will also shed light on how any international exchange rate system may be constructed by incorporating flexibility and fixed rules, and the responsibility of policymakers in each economy.

Chapter 2, on Sweden, underscores how the rise of international capital markets, and increasing access to them, was more important than the common choice of gold as an anchor. But, as the chapters on Bulgaria (Chapter 9), Colombia (Chapter 10), Japan in the interwar period (Chapter 11) and Spain (Chapter 8) show, the international capital market would also penalize countries that monetized their debts to an excessive degree. The case of Japan also shows how the disciplinary force of the gold standard actually worked through international capital markets.

Commitment to gold was delayed in the cases of Bulgaria, Colombia and Spain for the same reason. The effect was more pronounced in the

case of Colombia and even more so Spain, where connections to the gold standard were less stringent or even, in practise, non-existent. The case of Japan in the interwar period illustrates the choice of not adopting the gold standard in order to be able to provide the economy with funds, especially during the financial crisis of 1927.

As international capital was at heart of the system, the chapter on Norway (Chapter 3) shows how monetary policy in the long and the short run was designed to maintain the gold standard without having to submit to the rules of the game to an excessive degree – i.e. so that the Bank of Norway could successfully sterilize the effects of international capital flows. The Bank of Norway held buffers consisting of financial instruments to be bought and sold on international markets but that were not part of the central banks' legal reserves. These buffers were monitored and changes in them, together with the state of the international economy, signalled that monetary policy actions had to be taken through changes in discount rates. But, as in the case of Sweden, without access to international capital-building these buffers would not have been achievable. Thus, the international capital may have been disciplinary but it also provided the opportunity to increase the central banks' rooms for manoeuvre.

One of the issues of the gold standard is the notion of how the adjustment mechanism worked. Typically, it is based on the idea that prices are related to one another. In Chapter 2, on Sweden, we can see that domestic prices varied as years of inflation were met by years of deflation. In the long term, however, there was domestic price stability. Chapter 4 also shows that there was long-term price stability during the gold standard both domestically and internationally (at least, among the Nordic countries); it can also be seen that there was no inflation persistence. Such a result is not compatible with the most classic theory on the adjustment mechanism, the Hume price–specie flow mechanism. However, it could lend support to the monetary approach to the balance of payments, as the law of one price on integrated (international) markets would predict such cross-border price stability. By extension, however, changes in central bank reserves and money supply would be bound to follow such price stability. As illustrated by the cases of Norway and Sweden, quite significant imbalances could be built up due to access to international capital before adjustment had to take place. Thus, reserves could be achieved by borrowing on international markets. The fact that adjustment seemed to be a long-term issue also supports the importance of the opportunity to build up buffers, as illustrated by the case of Norway (Chapter 3) such external funds were used to ease the effect of a significant domestic crisis in the years 1899–1905.

It seems that, in general, both prices and monetary policy were integrated in the Nordic countries. Chapter 5 presents a study in a Wicksellian framework, where the overall result is that monetary policy in terms of changes in interest rates did follow the rules of the game, in that the central banks responded by increasing their own interest rates as responses to rising natural (international) interest rates. The framework also provided the result that monetary policy was, indeed, effective – i.e. that changes in central bank interest rates did affect domestic price levels. So, apparently, the gold standard was a system where domestic monetary policy played a role, and where liquidity and credit were available provided this did not mean encouraging spending through a monetary policy that promoted low interest rates.

Chapter 6, on Belgium from the mid-nineteenth century, shows what is also argued with regard to Sweden (Chapter 2): that the foundations of the international monetary system were laid before the heydays of the gold standard; and that it was the emergence of this international capital market that paved the way for the development of the gold standard. The Belgian National Bank is a pivotal body to study since it was established early after guidelines that made it 'modern' in comparative terms. Increased demand for reserve accumulation, coupled with globalization, had already made reserve management a pillar of the central banks' activities since the 1850s. There were monetary instruments with which to conduct such management that were much more convenient than the shipping of specie and the use of bills of exchange. In reality, this also made the classic gold standard period much more of a gold exchange standard system. An interesting comparison from this case is the fact that operational risks were high, due to skewed incentives with profit-seeking private national banks, low transparency, and few checks and balances on those conducting the reserve management operations. On the other hand, financial risks were very low as exchange rate fluctuations were limited due to the credibility of the fixed exchange rate: the gold standard. Today, the opposite is the case – and we are now learning once more how incredibly high exchange rates risks, expressed as volatility in exchange rates, can be – the cost of this remains to be seen.

The fact that the gold standard worked by access to international capital, reserve management and monetary prudence means that there were disciplinary forces on fiscal policies. As stated, the times when the gold standard became an obstruction was when the need for fiscal spending was greater than could be allowed under the gold standard. This made the system a highly political issue. An interesting example of this is the case of Spain (Chapter 8). Due to problems with structural

current account deficits, together with the European crisis in the early 1880s, in 1883 the Bank of Spain in practice ended its commitment to the gold standard by ending convertibility of notes into gold. The reason was the deplorable state of the economy; the Bank of Spain feared that the public would refuse to accept the Bank's notes, as reserves were deteriorating. Some countries managed to combine inconvertibility with exchange rate stability; this was not so in Spain. The reason for this was twofold: a fiscal policy that omitted provision for any such attempts; and the fact that the Bank of Spain, as a private institution, put its own objectives (high dividends) before exchange rate stability. It is notable that all Spanish governments wanted to join the gold standard, but that the Bank of Spain was sufficiently powerful to fight such concerns – which probably would not have been possible had fiscal policy been sound. It was evident that the private owners of the Bank of Spain were against any such resolution: even when attempts were made to stabilize the exchange rate during the interwar period, the Bank argued that the gold standard should be adopted at pre-1883 par. In this, the Bank was supported by the Ministry of Finance.

One of the main findings during the gold standard period (and one that is valid for any economy) is that fiscal and monetary policy should be harmonized; inconsistencies between the two not only offset the effect of the policies, but can also be directly harmful. In the case of Spain, the Treasury seemed to have their incentives to maintain autonomy in fiscal issues and the Bank their incentives to keep their monetary autonomy. As the authors of the chapter on Spain state, the cost of being outside the fixed exchange rate system – in terms of galloping debt and impeded growth – was probably significant.

It should be noted that most national banks were private and still functioned well. Yet again, it all comes down to the extent to which monetary and fiscal policies are consistent and prudent. And it is definitely not certain that such a task is resolved by making the central bank 'autonomous', which, for some considerable while, was seen as one of the most important pillars in the building of currency and/or price stability. Central banks, as with Treasuries, are part of an economical and political system: to work well, these institutions need to have inbuilt checks and balances. In the same way, the design of a financial system is a political issue: to change a badly-designed financial system is costly (as can be seen in Chapter 11, on Japan during the interwar years). It is also a fact that such changes are usually imposed during turbulent times.

In Chapter 7, concerning the Belgian case during the interwar period, we can see how the changing playfield for the gold standard gave rise

to significant changes for the position of the Bank of Belgium. After the gold exchange standard under the leadership of the UK and the US ended with the 1931 sterling crisis, there was no monetary leadership to follow. Belgium moved into a gold bullion standard but more important was that the government seized the opportunity, first (unlike in the case of Spain), to make the national bank a public institution; and, second, to reinforce its monetary and credit facilities, thus making it more like a modern central bank.

This event also shows how important monetary leadership was for the peripheries. Without access to stable reserve currencies, the whole internationalization process and the opportunity to build up reserves (as seen in Chapters 2, 3 and 5) would have been seriously hampered. In fact, the gold standard would have had to be much more rigid in following its text book ideals and not allow the expansion of money and credit in relation to the economic growth that it did.

Bulgaria (Chapter 9) is an interesting case, as the country joined the gold standard quite late (1906). The question here is why Bulgaria was not initially in the gold standard, and then why and how it managed to adopt the gold standard. Again, there was the issue of a Treasury that issued a large part of the money supply as debt – money that circulated outside the control of the National Bank of Bulgaria. However, Bulgaria admitted to a bimetallic standard after the example of the Latin Monetary Union – but it superseded the silver clause and, by doing so, could issue vast amounts of coin. Eventually, by the turn of the century, as the silver-backed notes that were issued by the National Bank instead of coin started to become a significant part of the money supply, the Bank of Bulgaria could gain some control over the monetary situation. Moreover, the fiscal situation was improved and the amount of money issued to cover state debt had decreased quite significantly from 74 to 56 per cent.

The case of Colombia shows the various ways that countries could be tied, or at least related, to the gold standard. But Colombia, as seen in Chapter 10, is another example of the intimacy between fiscal and monetary issues. Once more, it shows the importance of international capital markets, but it also shows how international capital under crumbling domestic political institutions may lead to dire and unimagined consequences. It is a reminder of how political such issues as money and finance are, and how the mutuality between politics and economics may lead to the promotion of less favourable outcomes – even such as horrendous circumstances as civil wars. It is a powerful lesson that, in hindsight, teaches that once this point of debt degradation and falling

credibility has been reached, enormous efforts are required to reverse the situation.

Japan's experience in the interwar period (Chapter 11) shows how countries that are serious about restructuring a badly-designed domestic financial system would actually be hampered by belonging to the gold standard. So, the choice not to adhere to the gold standard made it possible for Japan to use fiscal stimulus to ease the situation in addition to restructuring the financial system. The lessons learned in the domestically induced financial crisis in Japan in 1927 were then re-used to combat the internationally induced crisis in 1930–31 successfully. But, as the gold standard system broke down with the Great Depression, it seems that the disciplinary forces of international capital markets could no longer impose control over fiscal spending. And, as no other mechanism was implemented to achieve fiscal discipline, it came to rest, unsuccessfully, on the personal capabilities of the Minister of Finance – who made it a fiscal policy to provide cheap government credit through the central bank. Thus, what we see is how political and economic structures are intertwined – and how the gold standard worked as a disciplinary force through international capital markets.

What all these experiences from the gold standard peripheries tell us is that, in the long run, we cannot escape the pressure of fiscal and monetary prudence if we wish to adhere to a stable currency – not then and not now. But prudence does not mean that foreign debt and the deployment of international capital markets are unwise activities. Rather, it means that, at some point, structural imbalances have to be adjusted, and thus that the political system has to be constructed in such a way that debt is not allowed to spiral out of control. Countries solved this differently – or, in some cases, did not solve it at all; as a consequence these countries were not on gold and usually not on specie at all.

Also, in the long run, low interest rates were not retained to stimulate the economy. This requires that monetary and fiscal prudence is high on the agenda of the policymakers. The political dimension is important, as it seems that, in a system as rigid as the gold standard, there were still many different ways to be on the gold standard. Moreover, besides constructing their own particular way of adhering to the gold standard, countries were allowed to adjust to upcoming events (external shocks). But, behind all the success of the gold standard lay the dual role of the international capital markets, which acted both as facilitators of the system (by allowing countries access to capital in times of need and to build up a buffer) and as a regulating influence (by making capital expensive – if not completely unavailable – for economies that

behaved badly). This access to capital was probably the result of general economic growth during the period and the belief that such growth would continue.

It also reveals that, where the core countries provided stable reserve currencies, monetary leadership was important for the peripheries. Otherwise, such turbulence would not have arisen in the wake of World War I and the gold exchange standard – a turbulence that only seems to be beaten by the volatility of the currency market at the time of writing: autumn 2011. What the result of this turbulence will be for the peripheries, politically and financially, is anyone's guess – but it is clear that, even today, there are valuable insights to be discovered in the experiences of the gold standard when designing or evaluating an international monetary system. This is why Chapter 12 discusses similarities and differences between the Euro zone and the gold standard as monetary systems.

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Part I
Scandinavia

2

Central Banking and Monetary Policy in Sweden during the Long Nineteenth Century

Anders Ögren

The working of the gold standard is surrounded by interpretations and explanations based on theory. The most fundamental of these is the idea of central banks and their monetary policy as summarized in the expression 'the rules of the game'. The 'rules of the game' means that the monetary policy of the central banks should aim to facilitate the effects of capital inflows or outflows on domestic markets – i.e. central banks' monetary policy should work in a pro-cyclical manner. It is even said that a central bank should amplify the effects of the capital flows to ensure a quicker and more efficient adjustment of the current account.

Regardless of this theoretical explanation for the working of the gold standard, empirical research points in one direction – that central banks used sterilization; i.e. that they ran a monetary policy that was meant to counteract the effects of the international capital flows.[1] But on the other hand, we know that admitting long-term imbalances by sterilizing effects of international capital flows should make it impossible to maintain the fixed exchange rate. So, clearly, there were disciplinary forces within the gold standard regime – they were just not as direct or working along the same channels as is proposed by the idea of the 'rules of the game'. There was, in fact, flexibility in the system – which is one of the explanations as to how the gold standard regime has managed to stay in place for such a long time.[2]

The gold standard, as with any fixed exchange rate, was a stable regime in terms of external relations – i.e. prices on foreign currencies were stable. However, such external stability was met by internal, domestic adjustment in prices. So, the general public stability in consumer prices was not a result of the gold standard. As can be seen in Figure 2.1, periods of increasing prices were met with period of falling prices – so, in this

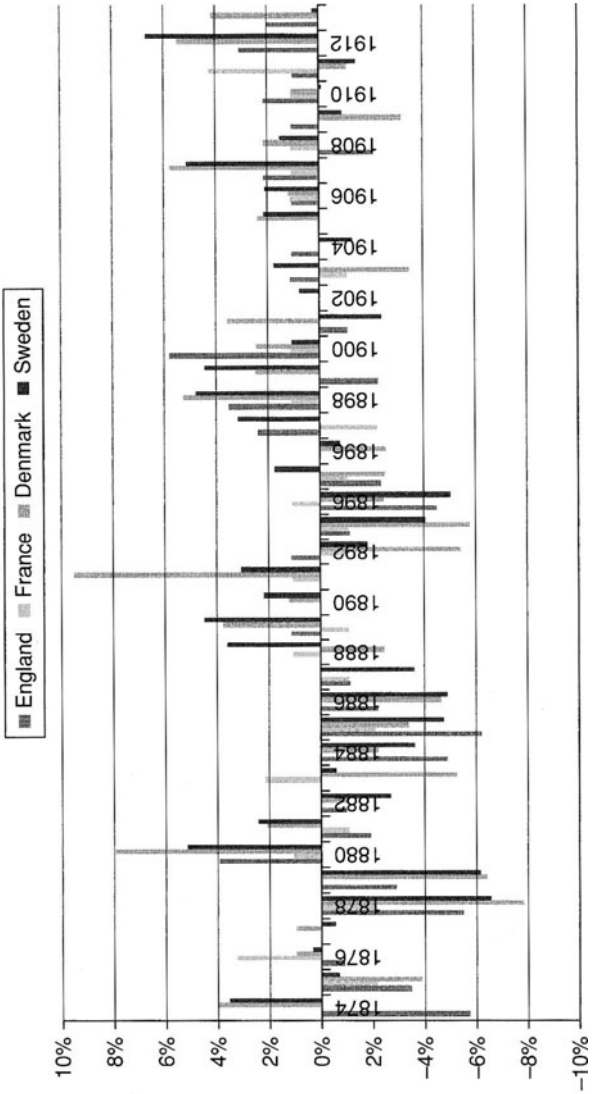

Figure 2.1 Annual percentile changes in consumer prices in England, France, Germany, Denmark and Sweden, 1874–1913
Sources: Mitchell (2003): 863–5; Myrdal and Bouvin (1933).

respect, the gold standard functioned in a way that was diametrically opposed to a floating currency (which focuses on domestic price stability through targeting inflation). Price volatility was also higher for the peripheral countries (as illustrated by Denmark and Sweden) than it was for more central countries (as illustrated by England and France).

The question, therefore, is how the central banks managed to solve the ever-present dilemma of how to conduct monetary policy in such a manner that the supply of base money was balanced so as not to impede economic activity with the quest for a stable value of the currency.[3] Balancing these elements is even more difficult, as we know that it is impossible to insulate the economy from international influences. Also, changes in economic trends may take place abruptly and be of considerable magnitude.

Although this book concerns the management of the gold standard as a monetary regime, I have chosen to study both the gold and the silver standards with regard to Sweden. The reasons for this are that many important changes in the way that monetary policy was run had already been made during the life of the silver standard (1834–72) and that the change to the gold standard (1873–1913) was not the structural break in international monetary relations, central banking and monetary policy that a focus on the gold standard alone implies. In short, it is not possible to obtain an understanding as to why the gold standard was managed in the way it was without also studying the preceding period of the silver standard.

The influence of the monetary policy of the Riksbank

One fundamental question in the case of nineteenth-century Sweden is the extent to which the Swedish central bank, the Riksbank, actually had any opportunity to run an efficient monetary policy. The reason for this would be that the commercial banks that existed from the 1830s, the so-called 'Enskilda' banks, also were issuing notes. In fact, from the mid-1850s until the early twentieth century the Enskilda banks combined circulated more notes than the Riksbank.

Researchers have made the assumption that bank notes by themselves are more or less perfect substitutes by the mere fact of being bank notes.[4] This assumption means that all banks or no bank, including the Riksbank, is issuing base money. Issuing base money is, in fact, what makes central banks responsible for monetary policy. It then becomes obvious that the breaking point for the Riksbank as a central bank with influential monetary policy must have been when it gained 'monopoly'

on note issuance. As banking legislation in 1897 stipulated an end to the Enskilda bank note issuance to be effective from 1903, this is often considered as the starting point for the Riksbank as a central bank running influential monetary policy.

The fact is, however, that it does not matter what today's definitions of the money supply and its components are;[5] in reality, the private Enskilda bank notes were inside money that added to the circulating liquidity. Riksbank notes were base money held as reserves by the commercial banks and thus added to the money multiplier. The problem is that, at the time of writing, there is no category in the money supply that captures these specifics of the private Enskilda bank notes.

So, what are the arguments that the Riksbank could have run influential monetary policy before the abolition of Enskilda bank note issuance in 1903? The argument is that the empirical evidence clearly shows that the issuance of Enskilda bank notes throughout the nineteenth century was based on Riksbank notes. The Enskilda banks held other Enskilda bank notes to a far lesser degree than Riksbank notes (Figure 2.2). Thus, Riksbank notes were held as reserves by the commercial banks whereas Enskilda bank notes were not. Thus, there was a fundamental difference between Riksbank notes and Enskilda bank notes; the former was base money and potential banking reserves, and the latter was inside money

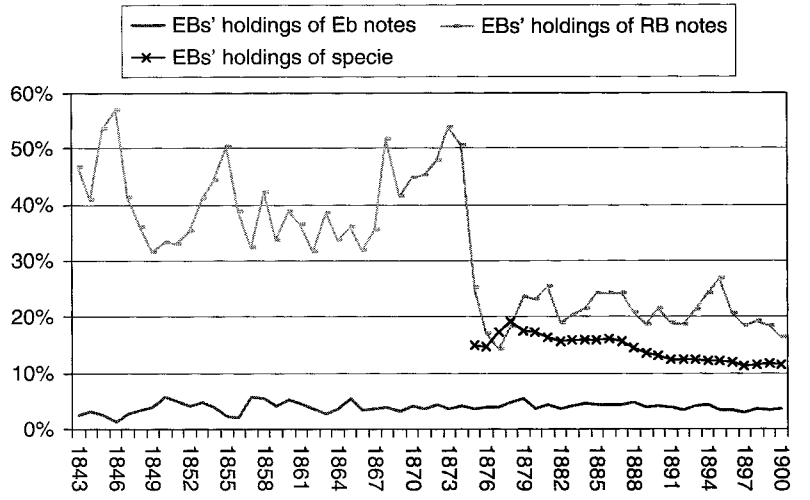

Figure 2.2 Annual data on Enskilda banks cash assets in relation to issued notes, 1843–1900
Source: Ögren (2006).

in the same way as deposits.[6] This means that the assumption made by researchers that the Enskilda bank notes and the Riksbank notes were competing on the same footing is false.[7]

Figures 2.2 and 2.3 show that, even after the Enskilda banking law of 1874 took away the legal right for Riksbank notes to be considered as a basis for the issuance of Enskilda banks' note, the Riksbank notes still comprised the main component of the Enskilda banks' reserves – to a greater degree than gold, which was legal backing. Gold was only held to the extent required by the legislation of 1874. Thus, Riksbank notes maintained their position as reserves in practice, and it is obvious that these were what the public wanted to redeem their notes for. Of course, Riksbank notes throughout the period held the advantage of being legal tender, which the Enskilda bank notes were not.

Another important question is the extent to which the Riksbank notes held as reserves by the Enskilda banks were transformed into their note issuance. The summarized results of the regressions in Table 2.1 show, first, that most notes issued by the Riksbank found their way into the Enskilda bank reserves during the entire period that banks were issuing notes. For annual data, we can see that this was the case to a high

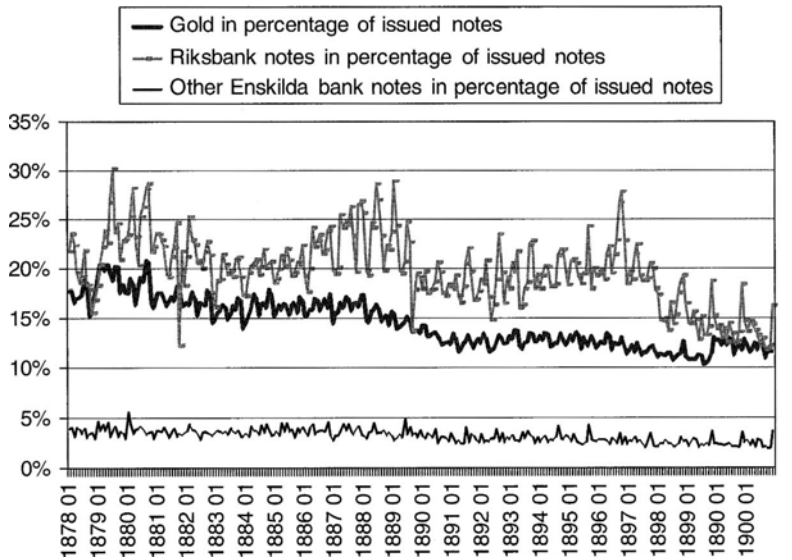

Figure 2.3 Monthly data on Enskilda banks cash assets in relation to issued notes, 1878–1900
Source: Ögren (2006).

Table 2.1 OLS regressions on the determinants of reserves of Enskilda banks

Dependent variable: Enskilda bank reserves DLOG(EBRES)	Eq. 1: annual data 1835–1900 (66 obs) Silver and gold standards		Eq 2: annual data 1835–1873 (39 obs) Silver standard		Eq. 3: annual data 1874–1900 (27 obs) Gold standard		Eq. 4: monthly data 1878–1900 (275 obs) Gold standard	
Independent variables	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*
C	0.05	0.07	0.12	0.01	−0.04	0.06	0.00	0.83
DLOG(ISSRBNOTES)	0.96	0.00	1.10	0.00	0.80	0.00	0.50	0.00
DLOG(GDP)	−0.36	0.65	−0.97	0.40	0.36	0.54		
DLOG(CPI)	0.62	0.28	0.82	0.35	−0.02	0.96		
R-sq.	0.22		0.24		0.48		0.14	
Ad.R-sq.	0.18		0.17		0.42		0.14	

Notes: Dependent variable; variables in logarithmic changes.
Sources: Myrdal and Bouvin (1933); Ögren (2006); Krantz and Schön (2007).

degree during both the silver and the gold standards. Also, with higher frequency data (monthly, which is only available for the period of the gold standard), we see that every second SEK issued by the Riksbank ended up in the Enskilda bank reserves.

The next question is whether the notes that ended up in the Enskilda bank reserves were used as basis for note issuance, or whether they were kept to sterilize the monetary policy of the Riksbank.[8] As seen in the results of the regressions summarized in Table 2.2, even if there were other factors influencing the Enskilda banks note issuance (as seasonal changes), Riksbank notes comprised the reserve component that was the basis of the Enskilda bank notes note issuance.[9]

So, in all respects, the Enskilda banks' note issuance did not make the Riksbank's monetary policy any less influential. The only problem with the Enskilda banks' note issuance with regard to monetary policy would be if the Riksbank was unaware of the fact that its issuance of notes affected the Enskilda banks' note issuance – but this was not at all the case.

In the first Parliamentary gathering following the adoption of the silver standard in 1840/41, the board of the Riksbank summarized the balance sheets of the then existing six Enskilda banks with specific regard to their note issuance and its backing in the annual report to the Parliamentary Standard Committee on Banking. They examined how it had developed and concluded that 'the money supply no longer consists only of Riksbank notes. It also to an important degree consists of Enskilda bank notes, notes that ultimately are guaranteed by the holdings in the

Table 2.2 OLS regressions on the determinants of note issuance of Enskilda banks

Dependent variable: Enskilda bank note issuance DLOG(ISSEBNOTES)	Eq. 1: annual data 1835–1900 (66 obs) Silver and gold standards		Eq 2: annual data 1835–1873 (39 obs) Silver standard		Eq. 3 annual data 1874–1900 (27 obs) Gold standard		Eq. 4: monthly data 1878–1900 (275 obs) Gold standard	
Independent variables	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*	*Coeff.*	*Prob.*
C	0.03	0.10	0.03	0.28	−0.00	0.82	0.00	0.59
DLOG(EBRESRBNOTES)	0.38	0.00	0.48	0.00	0.05	0.29	0.06	0.00
DLOG(EBRESGOLD)	NA	NA	NA	NA	NA	NA	0.14	0.48
DLOG(GDP)	0.69	0.11	0.88	0.14	0.44	0.27		
DLOG(CPI)	−0.08	0.81	0.05	0.92	−0.79	0.01		
R-sq.	0.45		0.55		0.40		0.03	
Ad.R-sq.	0.42		0.51		0.32		0.03	

Sources: Myrdal and Bouvin (1933); Ögren (2006); Krantz and Schön (2007).

Riksbank's reserves'.[10] Such concerns arose frequently during the nineteenth century not only in the Parliamentary Standard Committee on Banking, but also in Parliamentary debates as well as in the minutes of the board of the Riksbank.

It is therefore clear that the Riksbank's monetary policy was influential despite the Enskilda banks' note issuance, and also that the Riksbank was not only was aware of the situation, but also highly concerned about it.

Creating flexibility in a system of rigidity: the Riksbank's monetary policy

A fixed exchange rate regime is a system of rigidity where all other objectives have to be subordinated to one – making sure that reserves are sufficient to meet the demand for foreign reserves. As stated in the introduction, this means that, in theory, the only way to secure the fixed exchange rate is to make sure that the reserves of the central bank cover outstanding central bank liabilities (base money) to the required extent. By extension, this means that as reserves decrease the outstanding liabilities – i.e. base money – has to decrease, too. This is what following the 'rules of the game' means.

One way to accomplish this balance, which is frequently associated with the Riksbank in the nineteenth century, is to decrease liabilities

by directly strangling the amount of base money in circulation.[11] Of course, such measures have disruptive consequences on the state of the economy, especially as they usually are utilized during times of distress. There are other measures that have a less direct impact on the state of the financial system and the economy as a whole, such as the use of open market operations or adjusting discount rates. But the fact is that, ultimately, in order to remain on a fixed exchange rate (of any kind), the central bank has to be prepared to make less popular choices that will decrease the amount of base money, and thus credit in the economy, in line with capital outflows.

So, to what extent do we find the strangulation system to be the preferable monetary policy by the Riksbank? In fact, it was used to a surprisingly small degree and the board of the Riksbank was concerned early on with the negative effects of a monetary policy that was too tight and too disruptive. In its objectives in relation to the adoption of the silver standard in 1834, it was clearly stated that the Riksbank should preserve the specie standard, but also make sure that the economy was supplied with liquidity and credit to the extent needed so as not to interrupt economic activities. This, again, brings us back to the dilemma of central banking and monetary policy presented in the introduction: to safeguard the value of the currency and yet manage to supply enough base money to make the economy thrive.

The first real stress on the silver standard came in the early 1840s. There were two factors behind the large outflow of reserves, the ongoing financial crisis of 1843 and the fact that the Russian state demanded that the Riksbank exchange all its notes that were circulating in Finland for silver before the end of 1844. And the latter was not without siginficance; it has been estimated that by the time the silver standard was adopted in 1834 Riksbank notes to a value of SEK 3 million were already circulating in Finland – an amount that probably increased rapidly since the Swedish trade deficit regarding Finland was negative for the period between 1834 and 1844.[12]

In Figure 2.4, we see the extent to which the Riksbank utilized its right to issue notes in accordance with regulations. What we can see is that, by 1842, the Riksbank, due to the pressure put on the reserves by the redemption of its notes in Finland, had already allowed itself to break the regulations by providing too much liquidity and credit. Thus, it sterilized the effects of the international capital flows, even to the extent that it violated its own regulations. The crisis of 1843 added to the problems of upholding the money supply and thus 1843 marked an issuance of notes that overrode the regulated amount by 27 per cent – i.e. more

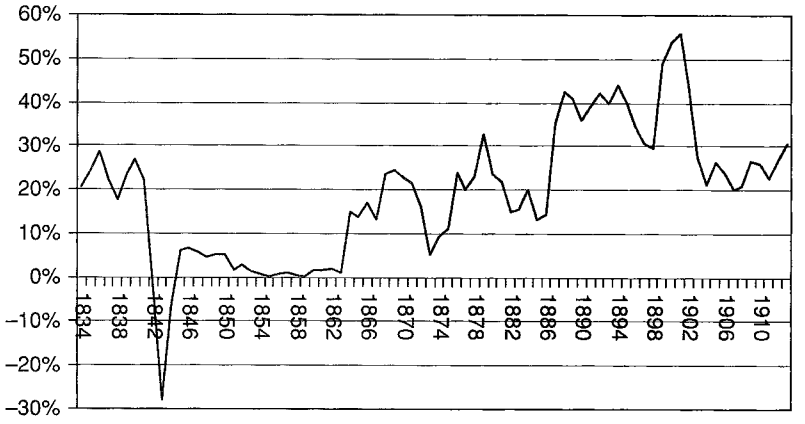

Figure 2.4 Riksbank's unused right to issue notes as a percentage of its total note issuance, 1834–1913
Source: Ögren (2003).

than one quarter of the money supply in circulation was not allowed. Obviously, this was not playing in accordance with the rules of the game; neither did it protect its prime objective, the monetary regime, by the 'cold-blooded' use of a strangulation policy that destroyed all opportunities for business, as has been claimed. It was apparently more important to keep supplying the market with liquidity than to strangle credit and liquidity to preserve monetary value.

It could be argued that the arrangement with Russia was a one-off affair and that this allowed the Riksbank, for once, to go against the strangulation system. But the Riksbank acted upon this situation and implemented long-term solutions. Starting in 1845, it introduced two fundamental changes to the regulations; one that would decrease the volatility on the money market, and one that allowed further flexibility in terms of monetary policy.

At the outset of the silver standard, the Riksbank was operating with a fractional reserve system; notes should be covered to 40 per cent by silver reserves. A fractional reserve system may allow greater flexibility in note issuance than a differential system, where notes can be issued to a specific limit above reserve holdings. But an advantage with the differential reserve system in comparison with the fractional reserve system is that changes in reserves, positive as well as negative, lead to less volatile changes in the money supply. With a differential reserve system the change has to be 1:1 between the reserves and the money

supply; with a 40 per cent cover fractional reserve system the change is 1:2.5. From 1845, a differential reserve was instigated and this system was kept until the start of World War I, only with changing opportunities to overdraw on the reserves as the economy grew. The reason given for the change to the differential system was to minimize the disturbing effects experienced when changes in reserves demanded that the money supply had to change.

A more important change was that all Riksbank foreign holdings (deposits abroad, foreign state bonds and Treasury bills) also became part of the legal backing for the Riksbank's note issuance. When studying the figures, it is clear that this change allowed the Riksbank to maintain the level of the money supply since it increased the value of the reserves to the same extent as it had previously over-issued notes. Thus, instead of focusing on a pure silver reserve and oppressing the money market, it opened up matters up to the inclusion of assets that cannot be considered as part of a 'pure specie standard'. The Riksbank did not change until 1913, only to include specie as parts of the legal backing of its liabilities.

As seen in Figure 2.5, these foreign holdings comprised substantial part of the reserves. They also formed the portion of the reserves that was the most volatile – which shows that reserve adjustment, to a considerable extent, was achieved with these assets instead of by exporting or importing specie. Not only did the inclusion of foreign holdings allow the Riksbank to be more generous in supplying liquidity and credit, it also made it possible for the Riksbank to consolidate its position, as it earned interest on these assets.

The dramatic increase in the portion of foreign holdings in the Riksbank's reserves from the late 1850s was also a result of the Riksbank's attempt to sterilize the effects of reserve changes. In fact, the Riksbank also included foreign bills of exchange in the reserves between 1857 and 1872 – this was in order to sustain the money market during the 1857 crisis in a manner that was not completely legal (which is further explored in the section on lender of last resort, pp. 30–3).

From the 1850s, the Riksbank became progressively more reliant on discounting bills of exchange as one of the main ways of conducting monetary policy. This was mainly undertaken with the commercial banks. The expanding commercial banking system also relieved the Riksbank of the task of providing liquidity, as this now was done through the money multiplier. From the 1860s, the Riksbank also systematically intervened directly on the market for foreign exchange by buying and selling foreign bills of exchange.[13]

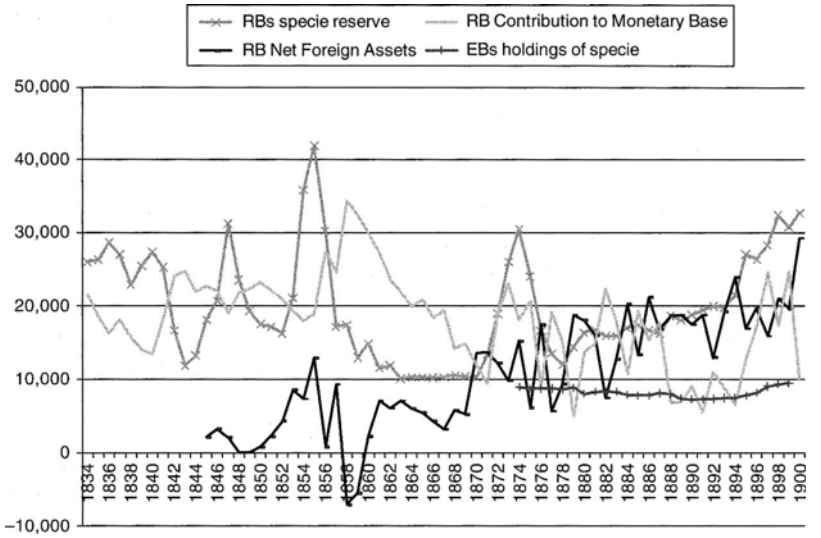

Figure 2.5 Components of the monetary base, 1834–1900 (SEK 1000)
Sources: Ögren (2003), (2006); Sveriges Riksbank (1931).

The silver standard was changed to a gold standard in 1873, and it is interesting to note that the early 1870s show an increased importance with regard to foreign assets (Figure 1.5). In 1869, the Riksbank was given the right to hold gold in addition to silver in its reserves as preparation for the gold standard. Apart from the consolidation of gold reserves during the boom in the early 1870s and the following fall in these reserves during the crises in the late 1870s, specie reserves were less volatile from the early 1860s. Clearly, the foreign assets were used to manage international balance of payment imbalances to a much greater degree than specie.

Another important relationship between the different components of the monetary base concerns that of the Riksbank's contribution to the monetary base – which basically constitutes the Riksbank's freedom for manoeuvre in monetary policy – and its reserves. The contribution to the monetary base is moving in direct opposition to the reserves, both specie and foreign assets, and this confirms the fact that the Riksbank did what it could to counteract the effects of international capital flows.[14]

Thus, as we can see, the foundations for the success of monetary policy during the gold standard period were largely based on the experiences from the earlier fixed exchange rate regime – the silver standard. But it

was also, to a large extent, the result of the increased internationalization that provided access to funds also during more turbulent times.

Internationalization and consolidation

One way of escaping the pressures of the fixed exchange rate is to consolidate funds that can be deployed during more distressing times. Such a measure is not possible if the central bank is working at its limits to provide base money – as was the case in the earlier period. However, in 1872 a special fund was instigated, the stated purpose of which was use in sterilization. However, to manage a fund to boost the money supply in times of need is a double-edged sword. The problem is to estimate when to utilize the fund in order not to worsen the situation. During its first year of existence, in 1873, the fund was deployed to cover for an over-issuance of notes in November. This was at the absolute peak of the boom of the early 1870s – the recession began in 1875 and the crisis occurred as late as 1878/79.

The fund consisted of bonds issued by the Swedish state through the National Debt Office. These bonds were not part of the Riksbank's reserves, since this would encourage the likelihood of monetizing state debt. But the Riksbank held such bonds to an extensive degree, as they were easily transferable into legal reserves (specie, foreign holdings) on the international market. In a way, this fund symbolizes the basis for the most important source of Riksbank monetary policy independence – international capital markets.

It is no coincidence that Figure 1.5 ends with the year 1900 – the reason is that, from 1900 until 1913, the Riksbank's reserves as well as its contribution to the monetary base above its reserves (i.e. money printed without any backing) virtually exploded. As seen in Figure 1.6, the driving force behind this development was the enormous expansion of the Riksbank's operations, illustrated by its turnover.

The annual turnover of the Riksbank clearly illustrates its development, as well as the economic development of Sweden in general. It is quite stable until the boom in the early 1850s, after which it picks up once more in the boom in the early 1870s. Its expansion is then reasonably stable until the mid-1890s. Both the 1870s and the 1890s are viewed as breaks for the industrial take-off in Sweden. The mid-1850s until the early 1870s also constituted massive institutional and organizational changes on the financial markets.[15]

From the late 1890s, monetary policy changes: reserves increase but, from 1900, there is an explosion in the Riksbank's contribution to the monetary base.[16] However, this increase is not particularly important if compared with the massive expansion of the Riksbank over the same

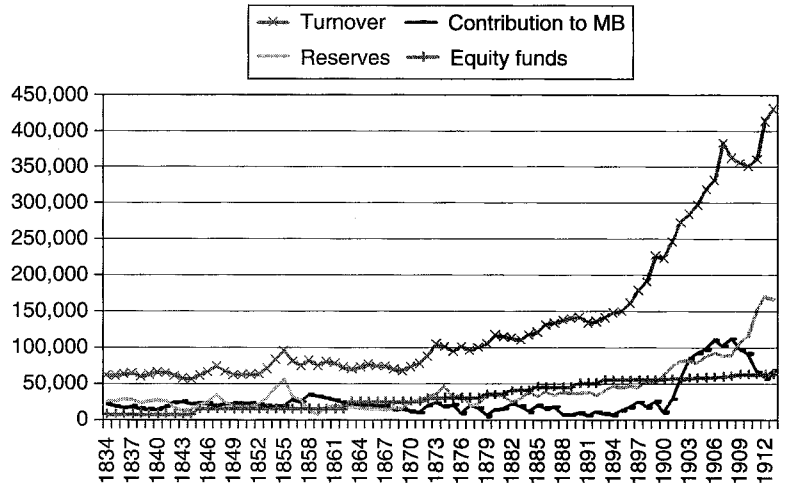

Figure 2.6 Annual turnover, reserves, contribution to the monetary base and equity funds (equity capital plus reserves), 1834–1913 (SEK 1000)
Source: Sveriges Riksbank (1931).

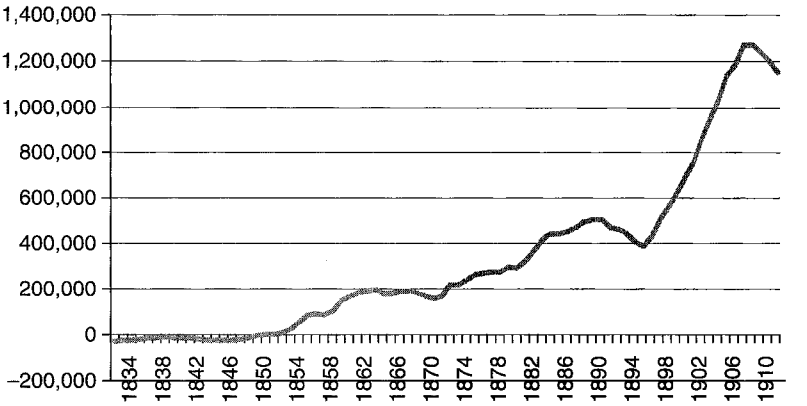

Figure 2.7 Accumulated Swedish foreign net debt, 1834–1900 (SEK 1000)
Note: Author's calculation based on Schön (1999); Sveriges Riksbank (1931).
Sources: Ögren (2010:1).

period. Of course, these increases in size provide increased flexibility for the Riksbank in conducting its monetary policy. Given this, it is interesting to compare the increase in the Riksbank's size with the accumulated Swedish foreign debt, as seen in Figure 2.7.

The Swedish situation illustrates the importance of international capital markets with regard to creating room for manoeuvre. Not least, this was the case when crises emerged and the Riksbank and other authorities had to engage in lender-of-last-resort activities and bank bailouts.

Lender of last resort

The most apparent way to break the 'rules of the game' is to provide liquidity in times of crisis. Not only is this directly in opposition to facilitating the effects of capital flows, but it is also directly endangers the fixed exchange rate as money is printed without increased reserve backing. This is especially the case for open and peripheral economies. For such economies, there was always a risk that emerging distrust of currency would mean that the money that was issued to sustain the economy during the crisis could be redeemed for foreign currencies and/or gold, thus emptying the reserves and destroying the likelihood of remaining on the fixed exchange rate – i.e. turning a banking crisis into a currency crisis.

As in the crises in 1843, the Riksbank provided liquidity during the crisis in 1857 to such an extent that in many ways it violated its regulations for backing. The 1857 crisis was to a large extent an international crisis. In September 1857, many firms in Hamburg, the main capital market for Sweden at the time, cancelled credits to Sweden. When in November 1857 four important British firms with ties to Sweden suspended payments, the Riksbank stated a clear intent of supporting the credit market – unfortunately it did so by supplying liquidity without increasing its price. Thus, the Riksbank supplied heavily subsidized credit at 5 per cent interest while the open markets in Stockholm, Gothenburg and Hamburg were all around 8 per cent to 9 per cent, and Copenhagen was even 15 per cent.

The first step was to allow foreign bills of exchange to increase its room for manoeuvre. But buying foreign bills of exchange was devastating for the fixed exchange rate. To overcome this problem, the Riksbank opened up an office in Hamburg that officially had nothing to do with the Riksbank and drew bills of exchange on this office. This was, of course, a grave violation of the regulations of the fixed exchange rate but, as seen in Figure 2.8, it served to uphold domestic liquidity at the most pressing time from late 1857 and though the first half of 1858.

From December, the Riksbank accepted a temporary devaluation of the currency since it paid 2 per cent above par for domestic silver – arguing that the price of importing it was more expensive. It also made plans to include silver in domestic possession being 'lent' to the bank

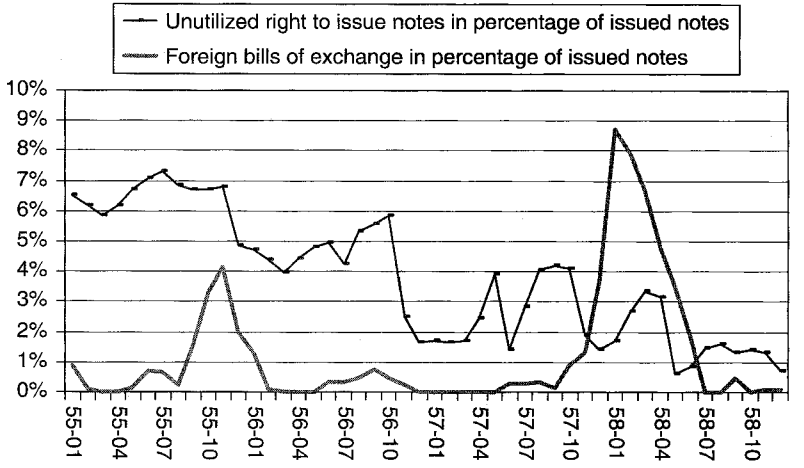

Figure 2.8 Riksbank's unused right to issue notes and foreign bills of Exchange in percentage of issued notes, January 1855–December 1858 (monthly data)
Sources: Ögren (2003), (2007).

for future payments (without actually being physically moved) as parts of its reserves.

The crisis of 1857 was also different to that of 1843 in another respect; the banking system had started to develop and one issue was the need to sustain banks. This was a controversial issue since the idea of running banks was seen as a privilege; indeed, as a result of their monopoly positions banks gained enormous profits of up to 20 per cent of paid-up capital per annum. In all bank charters, and in the first paragraph of the Banking Act of 1846, it was stated that private banks should not receive any support whatsoever from the state. But during the crisis 1857 some banks – and especially the then largest bank, Skåne Enskilda Bank – were close to failure.

In December 1857, it was decided in an emergency meeting with members from the boards of the Riksbank, the National Debt Office, the Standing Committee of Supply and the Minister of Finance that the Riksbank should guarantee Skåne Enskilda Bank an immediate emergency credit of about 1 per cent of the total monetary liabilities of the Riksbank at that time. It was also decided that the Riksbank, in order to sustain the money market, should arrange to borrow money from abroad – to a total value of SEK 12 million, or about 24 per cent of the Riksbank's total monetary liabilities. As soon as the contract for the loan was signed in Frankfurt am Main, the Riksbank regarded it as part

of the reserves and issued notes to an equivalent amount – even if, in reality, it would take some time for the funds to be collected and made available to the Riksbank. Interestingly, the first long-term loan taken by the National Debt Office in Hamburg was subscribed the day after the Riksbank subscribed to theirs. The National Debt Office borrowed SEK 20 million, which also was used to relieve the pressure on the domestic Swedish market.

The Riksbank set up a special fund to administer bank support – 'the State Loan Fund' (*Statslånefonden*) – from which credit could be given at a considerably higher interest rate than that permitted by usury legislation (9 per cent instead of 6 per cent). The comparably high interest rate did not stop the whole fund from being dispersed within a month.

The money that the Riksbank had borrowed was on short-term loan and became quite costly. Criticism of the board of the Riksbank's activities during the 1857 crisis was fierce in Parliament in the 1860s. It was argued that the Riksbank had been lax in their behaviour with regard to the specie standard. According to Parliamentary criticism, the goal of supporting the money market may be of importance but it did not mean that the Riksbank was allowed to endanger the silver standard. Thus, it was clearly the aim of politicians that the silver standard be considered as having greater importance than the state of the financial market.

The experiences from the activities during the 1857 crisis led to a new way of providing a lender of last resort that was fully visible, as was the case in the 1878/79 crisis. In 1878/79, it was once again the Riksbank who kept up liquidity, and continued to do so until the National Debt Office managed to import the capital necessary to create a specific fund to lend money on the toxic assets of the time – railway bonds. The fund was named the Railroad Mortgage Fund (*Jernvägshypoteksfonden*) and was officially administered by the National Debt Office. The money, however, was deposited in the Riksbank, which was also a large provider of capital to the fund. Eventually, it transpired that the fund more or less bailed out the Stockholm Enskilda Bank, since this bank alone had borrowed more than 50 per cent of the funds. That the Stockholm Enskilda Bank was in urgent need of capital is clear, as on the fund's first day it was granted a loan from the fund that was paid out by the Riksbank – well before the fund actually had any capital.

So, in 1878/79 the Riksbank initially provided liquidity by discounting bills of exchange to cover until such time as the National Debt Office had raised funds to create the toxic asset fund. It was also the National Debt Office that administered the fund, as the Riksbank considered that its responsibility for the currency made it impossible for it to act as the

sole lender of last resort. In short, for a peripheral economy the choice was either to import capital or to abandon the fixed exchange rate. This recipe is strikingly similar to that used during the banking crises in Sweden in the 1920s and in the 1990s.[17]

Conclusion

There is no doubt that the Riksbank was the issuer of base money and, as such, could also conduct influential monetary policy in the context of the private note issuing Enskilda banks. Even though the silver and the gold standards imposed rigidity in monetary policy, the Riksbank did find ways to counteract the effects of international capital flows. During the early period, it did so mainly by altering its reserve coverage of its monetary liabilities (its contribution to the monetary base), and also in times of need by directly breaking the rules of the specie standard. Later, as internationalization increased capital, imports created increased room for manoeuvre for the Riksbank's monetary policy. Clearly, international monetary relations were conducted by buying and selling foreign assets; specie transfers were rare. Another side of this is that an important part of the Riksbank's backing for its own monetary liabilities was in the form of foreign state debt – that means that, as central economies in the gold standard system increased their borrowing to import capital, their debt served as bases for money issuance in a peripheral country in the system. This increased internationalization and the expansion of the financial system from the mid-nineteenth century was more important for the Riksbank's role as a central bank, and thus for its manner and opportunities to conduct monetary policy, than institutional changes such as the shift to the gold standard or the ban on Enskilda bank note issuance has been.

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3

Freedom for Manoeuvre: The Norwegian Gold Standard Experience, 1874–1914

Lars Fredrik Øksendal

For the four decades preceding the commencement of World War I, gold convertibility was the nucleus of Norwegian monetary policy. No monetary regime, neither before nor after, has displayed the same endurance nor been as widely acclaimed. The apparent success notwithstanding, until recently research interest in the Norwegian gold standard experience has been meagre. The received wisdom presented has mirrored the old postulate of Wilhelm Keilhau; that Norway loyally played according to 'the rules of the game'.[1]

This article brings forward new research challenging the received wisdom. By moving beyond theoretical expectations and embracing the formation of central bank policy in practice, a fuller understanding emerges. I argue that the core of monetary policy was not to play along but, rather, to avoid having to dance to the tunes of 'the rules'. While Norges Bank undoubtedly wanted to maintain monetary stability anchored to the commitment to gold convertibility, the bank also craved a certain freedom for policy manoeuvre. Thus, gold was not the only game in town.

What gave character to the formation of Norwegian central bank policy was the inherent tension between Norges Bank's roles as guardian of the gold convertibility and manager of the domestic currency. With an open economy subjected to rather volatile shifts in the foreign economy, adjusting the domestic currency passively to the state of the gold reserves was seen as potentially harmful. In consequence, sheltering the domestic money supply from the balance of payments through monetary buffers, gold husbanding and sterilization became pivotal. In effect, Norway operated a managed gold exchange standard even before the interwar period.

In arguing that the realities of the gold standard rendered more room for discretion, the findings presented here are in line with recent advances

in the international literature.[2] Moreover, the findings emphasize the key message of this anthology: that although strong common patterns exist across nations, no single unified gold standard experience exists. Ultimately, each country enjoyed a unique experience reflecting differing economic structures, constraints and concern.[3]

Norway in the nineteenth century

Norway became an independent kingdom in personal union with Sweden in 1814. At the same time, she adopted a liberal constitution based on a relatively wide franchise where free-holding farmers made up the vast part of the electorate. While foreign affairs were decided by a Swedish-dominated cabinet, Norway enjoyed full sovereignty in all domestic questions, including monetary policy. In 1905, the union was amicably dissolved.

Belonging to the advanced periphery of North West Europe, Norway had a very open economy. In the early 1890s, exports and imports constituted more than 60 per cent of Norwegian gross domestic product (GDP). By 1913, this share had increased to close to three quarters. As in other peripheral countries, Norway was strongly dependent on a limited number of export industries; traditionally fish, timber and shipping services. Until the end of the 1880s, Norway usually enjoyed a small surplus on her balance of trade and services. From 1890 this changed. She subsequently ran persistent deficits in 24 out of 25 years at annual averages of 3.4 per cent of GDP, becoming a structural long-term capital importer.[4] Until 1905, capital import was dominated by public borrowing for infrastructure and defence purposes.

With regard to industrialization, Norway was a latecomer. Although some inroads had been made earlier, by the early 1890s, Norway was still largely a primary sector dominated economy. This, however, was to change. The 1890s presented a breakthrough as chemical pulp and, later, paper became important export industries. By the turn of the century, industry had surpassed agriculture and fishery measured in terms of national income. From 1905, industrial modernization accelerated, based on the development of hydro-electrical power and the electro-chemical and electrometallurgical industries.

Norway was strongly exposed to international business cycles. Moreover, the price volatility of foodstuff, raw materials and freight services led to more pronounced cycles than for countries with more advanced export structures. To some extent, Norway experienced typical boom-to-bust cycles, most distinct in the course of the 1870s and 1880s. In the early

1870s, the country had enjoyed an unprecedented export led boom. The optimism of the flourishing upturn was replaced by two decades of sluggish growth, abrupt shifts in terms of trade and volatile economic cycles. Moreover, her traditional export of fish and timber suffered as a result of dwindling resources. Furthermore, the merchant marine fell into dire straits. Squeezed between falling freight rates and the advance in steamship technology, the majority of ship-owners opted for continued reliance on sail-technology and introduced cost-cutting measures to stay competitive within a falling market.

Although the economic performance improved with the end of the long depression, the country was still subject to rather volatile business cycles. The last part of the 1890s was characterized by a major domestic property-driven boom in Christiania and a subsequent bust in 1899. The impact of the burst depressed business activities for years. From 1905/06 onwards, industrial modernization led to a new strong growth period fuelled by an inflow of foreign direct investments, with an average increase in real GDP per capita of 3 per cent for the period 1905–14 against an average growth of only 0.8 per cent for the period 1890–1905.

Understanding the gold standard[5]

The study of monetary policy in an historical perspective has for long been riddled by almost mythical perceptions of policy regimes and their impact. For no regime has the mythical aspects been more pronounced or tenacious than for the classic gold standard. The workings and impact of that regime have stubbornly been described in a schematic text book fashion in terms of an automatic adjustment mechanism built on the price–specie flow model and a central bank reduced to playing by 'rules of the game'. Although the text book version has been exposed to strong critique since the late 1950s, it is only since the 1990s these myths have begun to give way.[6]

Not much of the conventional wisdom concerning the gold standard remains untouched. In his seminal study, Bloomfield illustrated the limits of the 'rules of the game', the perception that central banks responded to declining gold reserves by contracting domestic credit.[7] Contrary to theoretical expectations, he found no correspondence between changes in the gold reserves and central bank lending. Rather than following a single rule or policy criterion such as gold convertibility, Bloomfield argued that central bankers constantly exercised discretion. This view was supported by Triffin, who argued that in practice central banks took a broader view than gold convertibility.[8] Recent economic analyses

point to both profit motives and business climates as examples of such broader views.[9] Moreover, although the commitment to convertibility was common for all countries, how this commitment translated into actual policy differed.[10] In similar vein, the automatic character of the adjustment mechanism has come under scrutiny. Ford claimed that interest rate changes following gold flows primarily influenced the demand for labour, goods and imports; while changes in the relative level of prices and the 'rules of the game'-induced changes in the bank rate played only a subsidiary role in the adjustment process.[11] Triffin emphasized how price and wage rigidities made the level of economic activity more important for balance of payment adjustments than changes in prices. He argued that the cost of adjustment was asymmetric, higher in the periphery than in the industrialized centre.[12] As long as the prices of the typical primary exporting countries in the periphery were set in international commodity markets, 'the burden of adjustments fell squarely on changes in demand'.[13] Recent studies highlight the volatile character of the adjustment process for Mediterranean and Latin American countries dependent on the exports of a limited number of raw materials and foodstuffs, leading to frequent booms and busts.[14] Furthermore, as a number of countries were structural capital importers and ran persistent deficits on current accounts, the assumption of an in-built dynamics of long-term equilibrium in the price–specie flow model did not hold true.[15] In an integrated world economy, adjustment policies in the 'rules of the game' tradition would only be effective to the degree that they influenced the international price level. Whether such policies were followed was thus of little consequence: for small countries, the effect would have been nil.

In search for an explanation as to why the classic gold standard became a fairly successful regime, even if the traditional understanding does not fit the evidence, a number of scholars has presented new interpretations. Roughly, these can be divided in two groups. One group, dominated by the contributions of Kindleberger and Eichengreen, strives at reaching a systemic understanding of the regime centred on terms such as 'hegemonic responsibility' and 'central bank cooperation', respectively.[16] In both cases, the success of the regime can be attributed to leadership, either provided by the Bank of England or as a collective function provided by the core countries. Although catchy interpretations, these accounts lack empirical support.[17] The fundamental problem is that what Kindleberger and Eichengreen really want to do is to explain the interwar years. Their understanding of the gold standard prior to 1914 is a reversed image of their research on the subsequent period. Since both a strong hegemonic

power and increased central bank cooperation probably could have reduced the frictions of the 1920s and 1930s, there had to be hegemony or cooperation in the previous, more successful period.

The other group consists of historical economists that aim at establishing an improved theoretical understanding of the gold standard. A number of these studies highlight the credibility of the monetary authorities' commitment to maintaining the gold standard, a view shared with Eichengreen.[18] As long as the perception of commitment was unchallenged, the authorities had some policy leverage in the short run. In consequence, it is possible to imagine reconciliation between the evidence of discretionary practices and the theoretical understanding of the gold standard as a monetary rule. Kydland and Bordo see the gold standard as a rule with an escape clause in the event of major emergences such as war. The commitment gave credibility to the policy regime and moderated exchange rate fluctuations.[19] Bordo and MacDonald assess the gold standard in light of the recent literature on monetary target zones.[20] The fluctuation band between the gold export and import points constitutes the target zone. As long as the exchange rate fluctuated within the band, the commitment to gold was maintained and gave short-run leverage for discretionary policies. The evidence certainly shows that most countries that adhered faithfully to the gold standard enjoyed a high degree of foreign exchange rate stability and few violations of the gold points. Economic analyses also find that gold standard adherence gave creditability in the international financial market and was associated with more favourable borrowing terms.[21]

Although stimulating, the new interpretations do not give us a new catch-all understanding of the gold standard. Probably the best explanation for this is that there is no such understanding. The gold standard period was not a single experience, but differed between countries and groups of countries. At best, one can find some common themes or characteristics. Flandreau and James catch this nicely when they claim 'that each country's record as a member of the gold club must be assessed not from the point of view of rules that never existed but from the point of view of each country's needs, constraints and potentials'.[22]

Norwegian monetary policy constraints

Norwegian monetary policy in the nineteenth century was undertaken against a background of domestic constraints and conflicting policy objectives. The bottom plank was the gold standard, made operational through the commitment of Norges Bank to honour its notes in specie.

Chartered in 1816 with what became a de facto monopoly on note emission, the bank had been issued with the task of restoring stable currency values after the Napoleonic wars. A new unit of account was introduced and the premium paid on specie over notes was gradually lowered until the adoption of silver convertibility in 1842.[23] Three decades later, in 1874, Norway uneventfully adopted the gold standard.[24]

The key to understanding the gold standard is the 'standard' rather than the 'gold'. As an external anchor for the domestic currency, gold served as a regulator of the note stock. In the English version, this was achieved through a direct linkage between central bank gold reserves and maximum note emission; in France, by the force of the commitment to honour notes in specie. Core countries such as England and France had a substantial gold coin circulation. In Norway, there was virtually no gold circulation and only very modest private gold holdings. Here, the major function of gold, beyond backing the note issue, was as a mean of settling persistent balance of payments imbalances. Despite unrestricted convertibility, notes were the circulating medium of exchange. Even with regard to settling international claims, gold played only a minor role. From 1890 onwards, the physical gold reserves placed in the vault of Norges Bank were very stable. When the public presented their notes in Norges Bank, they wanted foreign exchange – not gold. Moreover, as long as the exchange rates were within the gold points, there was no need for gold flows. In practice, the Norwegian gold standard commitment can be understood as a commitment to provide the public with foreign exchange at stable rates and to maintain the purchasing power of the domestic notes relative to Norway's trading partners.[25]

That gold convertibility was the ultimate objective of Norges Bank was never in question. Central banks, as pointed out by Eichengreen, were quite ready to take the steps necessary to defend convertibility and the public trusted them to do so.[26] Nonetheless, how this commitment materialized with regard to policy formation was not inevitably self-evident at the time. Although most people believed in some kind of interest rate induced adjustment process, the issue was more multifaceted than suggested by a pure 'rules of the game' style of thinking.

In practice, Norges Bank believed two key roles derived from the ultimate objective of maintaining convertibility: to preserve the nation's most important reserves of gold and foreign exchange and, simultaneously, to manage the domestic currency. The character of Norwegian monetary policy arises from the inherent tension between these two functions and how this tension was solved. Norges Bank took its role of manager of the domestic currency very seriously. One often thinks about

the gold standard primarily as an international system that established fixed exchange rates and promoted cross-border economic integration. From this perspective, the domestic scene is something of a residual where the necessary adjustments to maintain the international system take place, but of little interest beyond that. Naturally, the desire to be a part of an international system was a major mover in adopting specie as an external anchor. In particular, the massive move towards gold commencing in the early 1870s must be understood as strongly motivated by a desire to be a part of the international system.[27] When Norges Bank had established the national currency in 1816, domestic concerns were at the forefront – not only in terms of monetary stability after half a century with bank notes circulating at a discount and the hyperinflation of the Napoleonic wars, but also just to have a currency at all. Thus, in addition to providing stability, monetary reform was motivated by the desire for a payments system that accommodated the domestic exchange and the needs of a growing economy.

In a world according to the price–specie flow model, there would be no tension between the functions of keeper of foreign exchange reserves and manager of the domestic money supply: the note stock would fluctuate with the balance of payments and changes in the price level would take care of adjustment. Such an assumption, as discussed earlier, finds little empirical support. That is also the case for Norway.[28] Importantly, the weak relationship between gold reserves and note circulation was well-known. Professor Herzberg argued that the close relationship between note circulation and gold circulation was 'a superstition of the commercial world that constituted an almost unbreakable barrier to common sense'.[29] The note circulation, he argued, reflected the economic life of the country and was largely independent of gold flows.[30] This view was supported by Director Kiær, head of the Central Statistical Bureau:

> Depending on the position of the balance of trade one soon had a large, soon a smaller reserve of gold in the vaults of the bank of issue. The movements in this considerable part of the [nation's] gold holdings did not correspond to the movements in the circulation of cash means of payment which was ... dependent on the domestic exchange, thus as likely to the move in the opposite as in the same direction as the metallic reserve.[31]

Hertzberg and Kiær were influenced by the banking school. According to Hertzberg, there were no limits to how large the note circulation could

be as long as the central bank maintained its creditability, including the redemption of notes into gold, and the volume of notes was sustainable vis à vis the economy. As long as lending was restricted to first class commercial papers, the bank was protected.[32] The view of circulation and reserves as largely unrelated phenomena was also voiced by the Ministry of Finance. In 1882, the Ministry believed that rules dictating a strict relation between gold reserves and note issue were 'rather superfluous' under normal circumstances, but nevertheless chose to retain them as a credibility exercise. In times of crisis, however, the Ministry stressed, Norges Bank ought to apply discretionary powers, rendering credit and foreign exchange to the public, 'as far as safety allowed for'.[33] A Royal commission also warned against aggressive reduction in the note circulation in case of major gold losses:

> If a strong outflow of gold should reduce the metallic reserves below ten million, for example to five million, this implies that the note circulation will have to be reduced to the level of 15 million – a ruinous burden for the country at a time when business is in need of circulating means ... There are in reality no direct relationships between two variables (gold reserves and note circulation) in our economic life.[34]

However, as pointed out by the Ministry in 1888:

> the note circulation was not decided by domestic demand alone, but would to some degree still be dependent upon the movements in the bank's holding of gold and foreign currency. If it increases, the amount of outstanding notes can increase; if it is constant it cannot, regardless of the desire for increased means of circulation. If the holding goes down the note circulation must be brought down despite domestic demand.[35]

A situation might occur, the Ministry argued, where Norges Bank had gold, but not enough gold to issue more notes. The ability to fulfil the bank's obligation might not be in jeopardy, but legal constraints would render it impossible to expand the note issue.[36] Thus, Norges Bank ran the risk of having to curb domestic credit at a time when there was no call for this. In a nutshell, the crucial concern of monetary policy in our period was how to reconcile the maintenance of a credible fixed exchange rate with the desired room for domestic autonomy.

Mapping the two phenomena

Before answering how this challenge was met, some words are needed on the nature of the monetary constraints. Broadly, they fell in two categories; short-term seasonal constraints, and challenges related to the business cycle and long-term trends in the economy.

In the short run, the constraints stemmed from the simple fact that the movements of the foreign exchange reserves and the note circulation responded to very different seasonal rhythms.[37] The note circulation reflected the economic cycles of the year. Notes in circulation relative to annual averages were at their lowest point in the beginning of the year. In February and March, economic life began to blossom after the dormant winter period with the annual outfitting of the merchant marine and the fishery fleet, the latter in anticipation of the important northern fisheries. The circulation temporarily peaked in April with the payment of the quarterly customs duties. May was a quiet period before the circulation reached its annual high point by the end of June, with midsummer being both an important date for settling debts and the time of the annual market for timber. During the following summer months, the circulation gradually declined. By the end of September circulation rose again, because of both the annual harvest and the funding of the import season. The last peak was connected with the Christmas season and winter solstice, another traditional settlements day. Not surprisingly, Norges Bank's lending to the public mirrored the seasonal fluctuations in the demand for notes.

While the note circulation displayed several seasonal peaks and troughs, variations that repeated themselves like clockwork year after year, the foreign exchange reserves displayed greater volatility. However, the general trend is clear: the reserves were lower in the first half of the year and higher in the second. This trend reflected the structure of the export sector. As discussed, the merchant navy and fishing fleet were equipped in February and March, and foreign exchange earned by these sectors started to flow in by mid-summer. Thus, a time-lag existed between the sectors' demand for circulating means and the inflow of foreign exchange earnings from them. June represented a peak for both note circulation and foreign reserves. However, there was no causal relationship between the variables: the former reflected the income of some sectors, the latter the demand for cash by others. Among the latter, the timber merchants themselves became contributors to the foreign exchange inflow throughout the late summer and early autumn. The reduction in the reserves in the autumn corresponded with the import phase.

The differing rhythms observed are important for two reasons. First, they testify to the view voiced by Norwegian authorities that reserves and circulation were two different phenomena. Sometimes corresponding, sometimes going in the opposite direction, but not united through common causality. Thus, the world was more complicated than allowed for by the price–specie flow mechanism. Second, with differing natural rhythms Norges Bank might easily risk breaching its note issuing rights. In particular, the period March to April, often referred to as the 'spring pinch' due to the combination of high demand for notes and low export earnings, was seen as challenging. Moreover, the flows of foreign exchange were volatile. This reflected a foreign trading sector where the shifts in terms of trade were more pronounced than the changes in the overall domestic price level, an export industry where the volume was dependent on forces beyond the control of man and the role of short-capital movements. These potentials for shocks were to a large extent independent of the level of activity in the economy. Two cases in point – a bad harvest leading to extraordinary grain imports, or a failed winter fishery – would not, in isolation, result in less domestic activity, but had the potential to constrain monetary policy. Some short-term constraints had the potential to become more long-term challenges for monetary policy – say, repeated crop failures or a lasting change in terms of trade.

In Figure 3.1, the development of foreign exchange reserves and the circulating note stock are mapped from January 1870 to the summer of 1914. The data testifies to the neat long-term relationship between foreign reserves and notes in circulation. Such long-term correspondence is not surprising, given the very nature of a gold standard regime; legally, an expansion of the note stock had to be, at least partly, backed by larger holdings of gold. However, the patterns of development between the variables differ markedly. For the note stock, the seasonal variations discussed above are ready recognizable to the naked eye. Moreover, the long-terms trends are easily identified: the early 1870s, corresponding with the international boom, witnessed an unprecedented increase in the note stock. With the turn of the business cycle, associated with the beginning of the long depression, the note circulation started to fall. From a peak in June 1874, five years later the note stock was down by one third. The 1880s witnessed a rather sluggish recovery, with the note stock note not reaching the heights of 1874 until the summer of 1889. As Aschehoug had already noted in the 1890s, note circulation was a good business cycle indicator.[38] Indeed, the last half of the 1870s and the 1880s was a period of sluggish growth, price volatility and cyclical

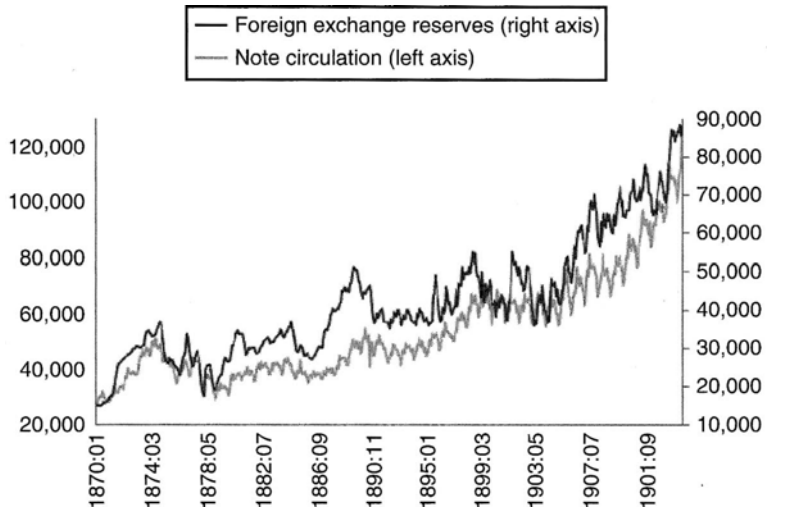

Figure 3.1 Foreign exchange reserves and note circulation, 1870:1–1914:6 (NOK 1000)

instability. After 1890, two periods of strong growth can be identified, from the early 1890s until 1899, and then again from 1906, roughly corresponding to the business cycles. The period in between is characterized by stagnation and reflects the prolonged recession in the aftermath of the 1899 real estate bust.

While only one period, 1874–79, witnessed a prolonged fall in note circulation, the development of the foreign exchange reserves is plainly more volatile. Although the trend is upwards, several periods of secular growth and fall are present. This reflected an open economy dependent on the exports of raw materials and freight services, and strongly exposed to the international business cycle. Export-led growth obviously brought increased welfare, but also gave a typical boom-to-bust rhythm to the economy. The fall in foreign reserves from November 1874 to March 1878 (53 per cent) stands out, but also November 1884 to May 1886 and July 1889 to February 1893 witnessed reserve reductions of 27 per cent and 29 per cent, respectively. From the peak in November 1898 to the trough of March 1903, the reserves went down with more than a third. Conversely, periods of strong improvement in the foreign reserves took place.

This volatility in the foreign exchange reserves potentially had a strong impact on monetary policy. The legal note issuing rights of the Norges

Bank was directly based on its gold holdings. For the whole gold standard period, a marginal increase in gold reserves increased the note issuing capacity by the same amount, and vice versa. Thus, the fear of a situation where the gold standard constraints would force the bank to restrict credit when this was not called for was not a theoretical assumption, but deeply rooted in the realities of the Norwegian economy.

Mastering conflicting objectives

In this section, the theme is the way in which the Norges Bank mastered the potential for a conflict between the key objectives of being guardian of the foreign exchange reserves and manager of the domestic currency. The essential question was how to avoid a situation where external constraints forced the bank to an unwarranted curbing of domestic credit, the solution to sheltering the domestic money supply from fluctuations in the external balance. Norges Bank did this by keeping a relatively large note reserve and foreign securities as buffers against fluctuations in the gold balance. A part of this policy included monetary sterilization and husbanding with gold resources. The result was smoothing of the interest rate and a note circulation mainly determined by the domestic demand for money. Thus, fundamentally, the Norwegian solution was to put the price–specie flow mechanism out of play by not dancing to the tunes of 'the rules of the game'.

The note reserve was a legal construct stemming from laws regulating the note issuing capacity of the bank. In 1892, a law was enacted simplifying the rules for note issuing by introducing a Bank of England-style pure differential system. Henceforth, in addition to issuing notes based on its gold reserves on a 1:1 basis, the bank could issue NOK 24 million without gold backing.[39] However, Norway had been de facto on the differential system since 1874: on the equity of the bank notes had been issued proportionally (5:2 or 3:2), but for gold reserves above a certain level, the bank had issued notes on the basis of 1:1. For the period 1873–93, the gold reserves were below that level for only one month. Under both laws, the rules dictated the legal maximum capacity for note issuing, not the actual note circulation. No prudent central bank would, in normal times, operate with a circulating note stock close to the margin of capacity. Thus, the difference between the legal maximum and actual circulation constituted the note reserve.

In practice, the note reserve served as what, to use a modern term, could be described as a 'monetary target'. The strength of the note reserve indicated the room for policy manoeuvre. Norges Bank and observers

of the money market followed its movements closely, in particular in light of their experience of the seasonal patterns of the key monetary variables. A low note reserve before the outfitting of the fishery fleet in February and with 'the spring pinch' just ahead was clearly more of a source for concern than a low reserve in the aftermath of midsummer, when the experience was that the note circulation habitually declined in the course of July.

Norges Bank had, following the 1892 law, an additional reserve in its holding of foreign bonds and bill of exchange. These could not be used for backing the note issue, but had the quality that they could be sold or bought for gold at short notice in international markets. This made them ideal for sterilization – i.e. operations that aimed at sheltering the domestic money supply from changes in the gold supply. Indeed, this had also been the core idea behind giving the bank the right to keep foreign bonds as a part of the reform of 1892. The Ministry of Finance advocated sterilization as early as in 1882: it was better to buy foreign bonds than to throw the bank's funds into an overfed domestic money market. In times of a downturn, the bonds could be sold to furnish the bank's lending ability.[40]

The official reserve measure was the note reserve. However, with the increase in the bank's holding of foreign securities, these became important as well. In my analysis I have created another reserve measure, the consolidated reserves constituting of the note reserve 1874–1914 and Norges Banks holdings of foreign bonds and bills of exchange 1893–1914. The essential function of the consolidated reserves was that of a buffer. An outflow of foreign exchange would lead to a reduction in the reserves rather than an immediate need for curbing credit in order to get the note circulation in line. Conversely, the reserves took the strain in event of an expansion of the circulating note issue. In Figure 3.2, I have plotted the monthly changes in the note circulation versus the monthly changes in the consolidated reserves. The result indicates strong correspondence with a correlation coefficient of –0.76 and an R-square value of 58.3 per cent.

The consequence of letting the consolidated reserves 'take the strain' and shelter the domestic note supply was a need for a larger average reserve than would otherwise have been the case. Figure 3.3 displays the development of the consolidated note reserve for the period 1874–1913 in relation to the circulating note stock and the bank rate. Given the role as buffer, the development is more volatile than the key monetary variables discussed earlier. The recurrent seasonal variations are present, but so also is the impact of the business cycle. Both under the downturn

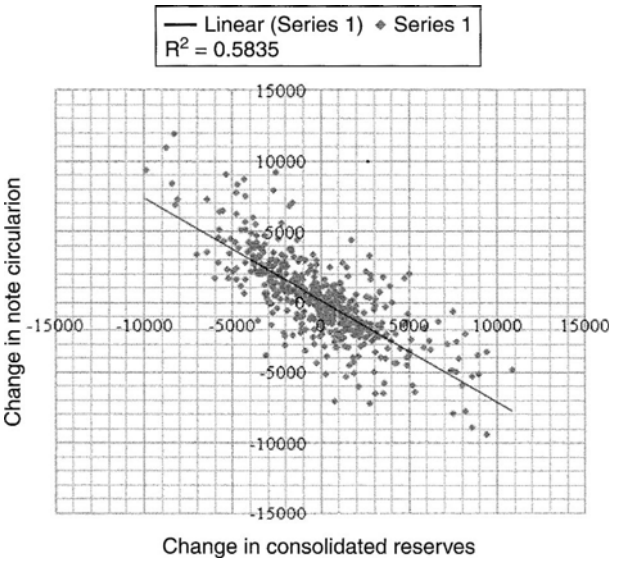

Figure 3.2 Change in consolidated note reserves versus note circulation, 1874:1–1914:6 (NOK million)

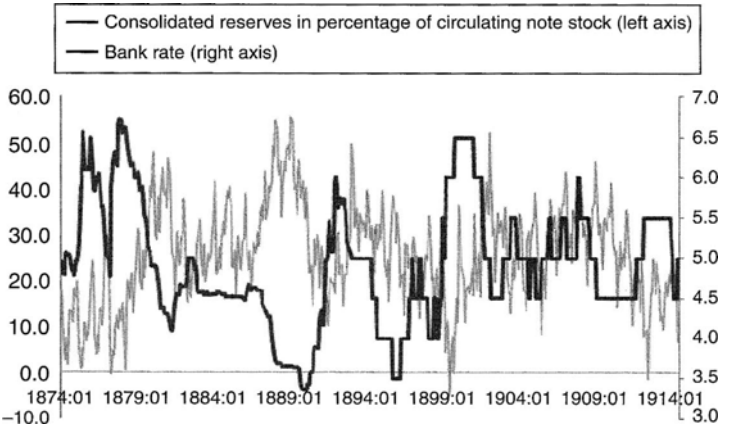

Figure 3.3 Consolidated note reserves in percentage of note circulation versus bank rate, 1874:1–1914:6

in the late 1870s and in 1899–1900, the reserve measure was at a dangerously low level. In 1900 and 1912, a weakened position warranted legislation increasing the fiduciary note issue.[41]

The importance of the consolidated note reserve as a policy target becomes pronounced when the measure is compared with the development of the bank rate. A swift analysis indicates an inverse relationship: in times of a strong reserve ratio, a low bank rate; and vice versa. For the whole period, the correlation coefficient is –0.53 Skånland, in his study of the Norwegian credit market in the first half of the twentieth century, has criticized Norges Bank's policy of operating with huge reserves rather than lending more freely.[42] The consequence of following his 'policy advice' of sailing closer to the wind would have been more pronounced fluctuations in the interest rate. In practice, the policy of letting the reserves 'take the strain' was a conscious policy of interest rate smoothing.

A further nuanced understanding of bank policy emerges when the lending volumes are taken into account. Under 'the rules of the game', a central bank would counter gold losses by tightening credit. However, Norges Bank did not apply this automatic formula. As argued, the combined note reserves took the strain. Seasonal 'pinches' were most often smoothed out. In the face of a weakened reserve position, Norges Bank reacted with an increased bank rate, but gold losses in isolation were not very important. However, the interest rate decisions of key trading partners became increasingly more important, testifying to how the gold standard brought along economic and financial integration.[43] Nonetheless, the ability to shelter the domestic currency from variations in the balance of payments was obviously the strongest in the short run. Seasonal variations were a well-known quantity that was likely to reverse. The same can be said for ad hoc shocks to monetary policy stemming from the uncertainties of farming and fishing. In the event of a long-run drain on the gold reserves, which most often followed a negative shift in the fortune of the export sector, this was less easy. The consolidated note reserves went down and the bank rate moved upwards.

Although in times of economic turmoil the bank rate might have been high, the level of credit supplied at that price was not necessarily reduced. Consider Figure 3.4, mapping the development of the foreign exchange reserves and Norges Bank's domestic lending. Although the trend is positive for both, reflecting the underlying expansion of the Norwegian economy, at times their patterns seem to be inverse. A strong increase in the reserves was often accompanied by falling volumes of lending. Conversely, during both of the most severe recessions of the

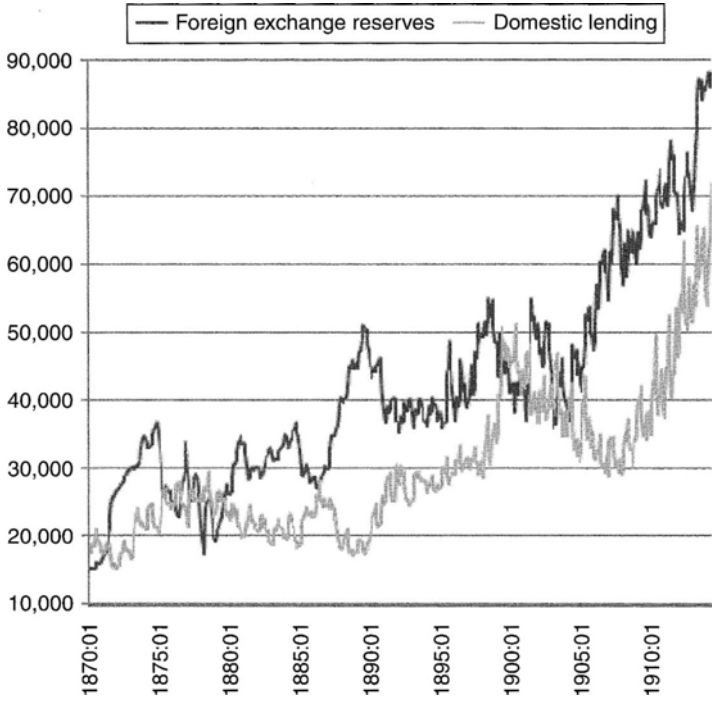

Figure 3.4 Foreign exchange reserves and domestic lending, 1870–1914 (NOK 1000)

gold standard period, the late 1870s and early 1900s, lending was maintained at high level in the face of dwindling foreign exchange reserves. Thus, Norges Bank's lending to the public was most important in times of crisis, when the normal credit channels were in distress, indicating some form of embryonic counter-cyclical tendency in its behaviour.

The point gains strength when the foreign exchange reserves and domestic lending are measured against the circulating note stock (see Figure 3.5). Such a measure removes the problem of long-term growth in our analysis. The relationship between the two variables is clearly inverse, with a correlation coefficient of –0.61. Moreover, there is a strong association between the two variables and the bank rate. In times of increased domestic lending measured against note circulation, the bank rate moved upwards (a correlation coefficient of 0.57). Conversely, a strong reserve position versus the note stock is associated with a low bank rate (a correlation coefficient of −0.58).

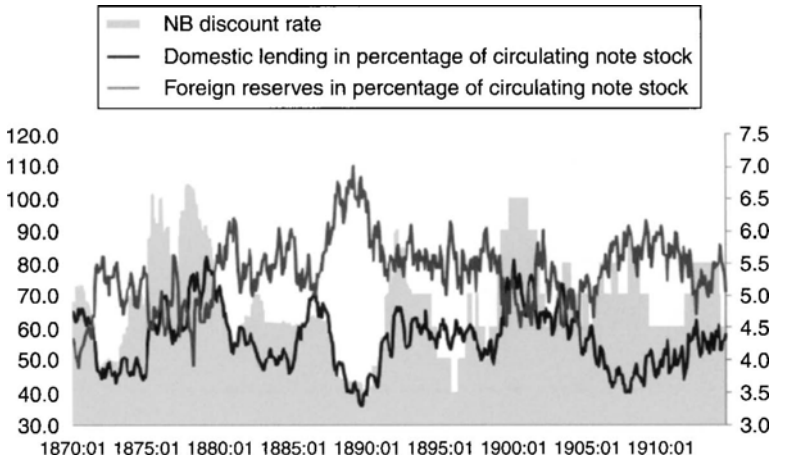

Figure 3.5 Foreign exchange reserves and domestic central bank lending in percentage of the circulating note stock and bank rate, 1870–1914

An important element in creating the monetary buffer was sterilization – i.e. removal of the monetary impact of inbound flows of gold. The key instruments were the holdings of foreign bonds and bills of exchange. Typically, in times of strong gold inflow the Norges Bank augmented its holdings of bonds only to reverse its position when it needed to expand its lending capacity. While holding bonds constituted long-term buffers, the role of foreign bills of exchange was more composite. On one level, it was a short-term sterilization operation, as the purchase of foreign bills reduced the power of the bank for note expansion. At another level, it was a question of generating revenue. But probably most importantly, it was a part of a conscious policy of husbanding the gold resources. Moreover, the bank's foreign exchange operations were closely linked to the state of the domestic money market, and give weight to the argument that this was part of a sterilization policy. In the event of an easy market, resources were shifted abroad, both to earn revenue and to reduce the downward pressure on the bank rate.[44]

Husbanding the gold resources was at the forefront of central bank policy. Limited physical gold flows aimed at keeping the foreign exchange rate within the range suggested by the gold points. In this, the bank was rather successful. In Figure 3.6, we can see that the upper gold point, which made it profitable to export gold, was broken only on a limited number of occasions, notably in connection with the troubles of 1899. During the international financial crisis of 1907, on account of

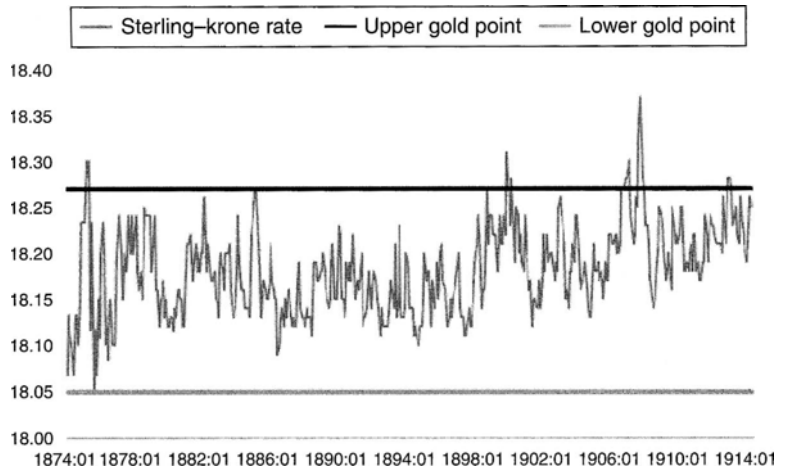

Figure 3.6 Exchange rate for pound sterling on the Christiania Stock Exchange 1893:1–1914:6 (monthly data, NOK)

the strength of its reserves the Norges Bank could maintain a lower bank rate than most countries, consciously allowing for some gold outflow when the export point was breached. In fact, drawing on sterling accumulated the previous summer, the bank actually enjoyed a handsome profit when the quotations reached the high 18.30s.[45]

Through the measures adopted, the isolation of the domestic money stock from fluctuations in the external balance and the careful husbanding of gold, Norges Bank went a long way in resolving the potential for conflict between its two key objectives. The domestic currency was not subjected to changes induced by the rollercoaster movements of the external balance. Instead, it was affected by the prevailing business climate and the related demand for money. Policy was far removed from semi-automatic adjustments and the gold standard was very much a managed system.

Conclusion

Norway adhered successfully to the gold standard for four decades. Convertibility was never at risk and the credibility of the gold commitment was not questioned. Nonetheless, her experience did not match the expectations derived from economic theory and was far removed from the gold standard myths. She did not play according to 'the rules

of the game', but followed a broader approach to monetary policy formation. Gold was not the only game in town.

At the core of policy formation was the tension between Norges Bank's key functions as guardian of the country's foremost reserve of foreign exchange and manager of the domestic currency. The fear was a situation where the legal constraints of the gold standard would leave the central bank with no freedom for manoeuvre, thus leading to an unwarranted tightening of domestic credit. The solution was to shelter the domestic money supply from changes in the balance of payments. In order to achieve this, Norges Bank avoided playing on the margins of her note issuing powers, but established monetary buffers that took the strain. Gold husbanding and sterilization was an integrated part of this policy, underlying the managed character of the Norwegian gold standard experience. Moreover, de facto, Norway operated a foreign exchange gold standard. Flows of gold were infrequent; calls on Norges Bank were for foreign exchange and, for the last twelve years before the war (1902–1913), gold in the vault constituted on average only 51 per cent of its foreign exchange reserves.

By following a policy that, if not aimed at putting the price–specie flow mechanism out of play, at least modified its impact, Norges Bank managed to maintain some freedom for manoeuvre. This does not imply that no adjustment took place. Interest rates were set not only by consideration for the domestic money market, but were also influenced by the price of money abroad and the state of the bank's monetary buffers. Moreover, smoothing out seasonal variations was obviously easier than removing the impact of long-term business cyclical downturns. Here, the room for domestic autonomy was obviously tighter. Nonetheless, even in a downturn the evidence suggests that Norges Bank, through building down its long-term buffers, aimed at easing the downturn. In the major downturn of 1899–1905, the bank maintained a stable note circulation in the face of strongly dwindling foreign reserves and the bank's lending showed a contra-cyclical pattern. However, dwindling monetary buffers came at price. Although credit was available, the bank rate was maintained at high level. Furthermore, the freedom for manoeuvre Norway gained reflected no only the conduct of monetary policy, but also her position as a long-term capital importer.

Policy autonomy or discretion under the gold standard was not a warrant for radical policy schemes or ideas contrary to the well-being of the international regime. Before 1914, central bankers and politicians in Norway were very much a part of a liberal worldview and would not easily stray away from the path of prudence. They desired freedom

for policy manoeuvre, but acknowledged that this freedom rested on the credibility of their commitment to the fixed exchange rate, as well their conduct of monetary policy. Fundamentally, discretion or policy autonomy under the gold standard reflected that prewar central bankers had concerns other than simply those of just an international regime and also were managers of national currency systems.

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4

Price Stability in the Periphery during the International Gold Standard: Scandinavia

Ola Honningdal Grytten and Arngrim Hunnes

According to Willis, there are two main statistical measures that have been employed in recent research when investigating inflation dynamics. These are 'volatility, or how much inflation varies quarter to quarter or year to year; and persistence, or the speed with which inflation returns to baseline after a shock'.[1] Furthermore, 'Other things equal, less persistence leads to less variability. Lower persistence is associated with faster but smaller swings in inflation over time that, in statistical terms, reduce the overall variability of inflation.'[2]

Thus, when the international gold standard was introduced worldwide in the 1870s and 1880s, the feature of inflation dynamics should be mirrored in price stability and inflation persistence.[3] Price stability should naturally be found in two arenas, the domestic and the international. First, fixed gold values of currencies would lead to stable domestic values of the currencies; thus, domestic prices or inflation would tend to stay stable over time. Second, by fixing currency values to gold, cross-border prices should stay stable.

The three Scandinavian countries, Denmark, Norway and Sweden, can be seen as peripheral countries in the nineteenth and twentieth centuries. This was not because they were located far from the political and economical centres of the world at the time: this was most certainly not the case, as the distance to the UK in the nineteenth century and thereafter to the US in the twentieth century was of no great significance. Proximity to the UK also made their foreign trade prosper and their domestic economy develop more rapidly than in many other countries. Thus, the Scandinavian countries may have profited from being geographically close to the centres of the world. However, in economic terms they were small and peripheral countries compared with the great powers on the European continent, the British Isles and in the new world,

perhaps with a possible exception for certain sectors of Swedish industry. Despite their peripheral role in the world economy, the three countries were early adopters of gold, as they all took part in the international gold standard system from January 1874. They also founded a common currency union, the Scandinavian Currency Union, effective for all three countries from January 1877 until the start of World War I in 1914, which led to the Union's breakdown. Even so, the Union formally existed for several decades after it ceased functioning.[4]

The move from a silver standard to a gold standard was in the planning stages for several years. Representatives from the three countries discussed the setting up of a common currency union.[5] (The Union has also been called the Scandinavian Monetary Union).[6] This plan initially failed due to Norwegian reluctance to take part in another Swedish–Norwegian union, as the two countries were already in a personal union, with the Swedish king being head of state of both Norway and Sweden.[7] However, the economic and political pros rapidly outgrew the cons. Thus, from 1 January 1877, the common currency union for all three Scandinavian countries came into being. By their early adoption of gold and the setting up of a common currency union, the three countries can be seen as international pioneers, despite their peripheral importance to the international economy. During the effective regime of the union, the three countries had the same unit of currency: the krone. Each country's krone value in pure gold was set at 0.40323 gram per unit. Thus, the Danish, the Norwegian and the Swedish krone could be used freely all over Scandinavia.[8]

Overview

The purpose of this chapter is to find out whether price stability did exist during the era of the international gold standard in the Scandinavian countries. This raises two questions:

- Did domestic price stability exist for Denmark, Norway and Sweden during the gold standard period January 1874–July 1914?
- Did cross-border price stability exist for these economies during the gold standard period January 1874–July 1914?

By utilizing existing and new price data, compiled from primary sources and thereafter used in the construction of price indices for all three countries, we are in a position to examine whether price stability existed. These data have been made available following recent historical monetary

projects by the central banks of Norway and Sweden, and earlier quantitative research into Danish economic history.[9]

Data

In order to investigate price stability during the gold standard period, we have to make comparison with other time periods. Thus, we expand the time series to cover the period from 1815 to 2000, thereby including the post-Napoleonic period (1815–1842), the silver standard period (1843–1873), the troubled war and interwar years (1914–1945) and the postwar years (1946–2000). We examined price data from the three countries under investigation. The data differ in character between the countries. However, they still serve as valid, reliable and comparable sources.

Overview of the data sets

Denmark

Historical prices have been investigated for decades in Denmark by the Price History Group at Copenhagen University.[10] In 2010, Kim Abildgren presented a consumer price index for Denmark stretching from 1502 until 2007. This is partly drawn on former indices and partly on original calculations.[11] As part of the index, Abildgren applies Svend Aage Hansen's cost of living index for Denmark 1815–1870.[12] Unfortunately, Hansen did not focus on documentation of his index, but nonetheless leaves us with some traces of evidence. His index is based on commodity prices he collected for 79 products; of these, fewer than 50 were consumer commodities, categorized in seven consumption groups. The prices were compiled from different sources, mostly Danish, but also some foreign sources. The Danish price data were taken mainly from Copenhagen.[13]

Hansen's price index must be considered a semi-cost of living/consumer price index. The price material consists of six types of prices: wholesale prices, export prices, import prices, institutional prices, foreign prices and domestic market prices to consumers, of which the first and last groups are dominant. Using the traditional Laspeyres approach, Hansen established fixed weights. He picked 1840 as his base year. His well-documented weights are based on estimated consumer expenditure offered in the historical national accounts for Denmark. Hansen did not have price data for three important groups: transport, other consumer commodities and other services.[14]

Abildgren also compiled data from Jørgen Pedersen's Laspeyres cost of living index for Denmark for 1855–1913. His index is based on between 18 and 33 products in six consumption groups, including rent. He utilized consumer, wholesale and institution prices, mainly from Varde, Odense and Aarhus.[15] Pedersen calculated weights based on people's actual consumption – i.e. quantity of consumed commodities. Four different consumption budgets were calculated: a household of unskilled workers in 1879, skilled workers in 1879, rural workers in 1880, and rural workers in 1897. Based on these budgets, Pedersen presented four different cost of living indices according to household income in the Danish provinces.[16]

The main difference between the two cost of living indices by Hansen and Pedersen in overlapping years is higher volatility in the latter. By splicing the two indices in 1870, one arrives at a combined cost of living and consumer price index for Denmark, covering every year from 1815 to 1913.[17]

Norway

The price index we use for Norway was constructed on demand from the central bank. It covers the years back to 1516 and is constructed by a traditional Laspeyres approach.[18] It is a mixture of a cost of living index and a consumer price index up to 1959; it not only reflects market prices, but also the costs of providing consumer goods for working-class families. From 1959 onwards, it stands as a pure consumer price index.[19]

The series used in this chapter comprises four different indices. The first, constructed by Ola Honningdal Grytten, covers the period 1815–19.[20] It includes 15 commodities representative of working-class families. Most prices are taken from the Bergen and Oslo areas, the two most urban districts in Norway at the time. Most prices are retail prices, although, some are wholesale. The second index, also constructed by Grytten, covers the period 1819–71. This includes 29 commodities in eight consumption groups for the period 1819–30, and thereafter 47 commodities in nine consumption groups. It involves most kinds of consumption commodities and activities, accept services. Almost all observations are monthly or quarterly retail or market prices, data reported throughout the country according to governmental decree.[21] The key source for these data is Professor Dr. Ingvar B. Wedervang's Archive on Historical Wages and Prices.[22]

The third and fourth cost of living indices are compiled from data on prices and consumption patterns in the Oslo area. The first of these,

covering the period 1871–1901, was constructed by Jan Ramstad. It was made up of price data on 55 representative commodities, recorded in the Wedervang Archive.[23] Thereafter, we use the cost of living index from the Statistical Office of Christiania (Oslo) for the period 1901–1914, including about 70 items.[24] Again, all major consumption groups are included in these monthly figures, except for services, which are absent up until 1900 and under-represented thereafter.

Sweden

Sweden has a long record of presenting historical price data. The last (and probably most impressive) contribution with regard to constructing historical price indices comes from Rodney Edvinsson and Johan Söderberg. At the request of the Swedish central bank, Edvinsson and Söderberg have published a continuous combined cost of living and consumer price index from 1290–2006.[25] The index is constructed on the basis of an impressive amount of data and collated from sub-indices covering different time spans. Here, we basically use the sub-index for the years 1815–1914, which originally stretched back to 1732. Edvinsson and Söderberg constructed their index on the basis of data from Lennart Jørberg and Gunnar Myrdal.[26] The data taken from Jørberg covers the eighteenth and early nineteenth centuries. The data from Myrdal, embodied in a cost of living index for Sweden, extends back to 1830 and is still used by Statistics Sweden.[27] Jørberg's and Myrdal's works have been supplemented with data from Stefan Carlén and Lennart Schön.[28]

As is common for historical cost of living and consumer prices, a Laspeyres approach has been used to calculate the new index. Different weights are adopted for four time intervals within the period 1732–1914. The number of commodities included varies between the time spans. For the years of interest in our analysis, there are 26 for 1815–30, 30 for 1830–70 and 31 commodities for 1870–1913. Most observations were made on retail data, although some figures are wholesale or even product prices.[29] Urban and industrialized areas are over-represented. However, they reflect price levels and movements in most of the densely populated districts of Sweden at the time. Thus, we can conclude that the Swedish price index for the period in question is both valid and reliable.

For the period from 1914 onwards, we have chosen to use the national cost of living and consumer price indexes used by Statistics Denmark, Statistics Norway and Statistics Sweden.[30] Both the validity and reliability of these increase over time. From around 1920, they must be regarded as very solid and trustworthy, and from about 1960 as excellent.[31]

Domestic price stability

In order to examine domestic price stability, we first take a closer look at the cost of living/consumer price indices for the three countries over the period 1815–2000. These are plotted in Figure 4.1. In order to make the series more readily comparable, for all indices we use 1900 as the reference year (1900 = 100 before taking the logarithms).

According to Figure 4.1, it would appear that prices maintained a relatively stable pattern during the gold standard period in the Scandinavian countries from January 1874 until July 1914, indicating a stable pattern of domestic prices in all three countries. The correlation of prices seems to be significant. Hence, cross-border price stability is present. However, this needs further examination before we can draw strong conclusions. The approach can be twofold: one has a short term-perspective, while the other has a long-term perspective.

Long-term perspective on price stability

In order to map price developments over time, it will be of interest to split long-term and short-term price fluctuations. This can be achieved with various smoothing techniques. Here, we use the Hodrick–Prescott filter (HP-filter), which is commonly used connected with historical time series.

The HP-filter is an algorithm for finding smoothed values (i.e. polynomial trends) of time series. The filter separates an observed time series, in this case p (prices) at observation point t (time) into a smoothed or a trend component, g_t, and a cyclical component, c_t, as stated in equation 4.1:

$$p_t = g_t + c_t \tag{4.1}$$

Here, the cyclical component will be a measure of the strength of the cycle. The objective function of the filtered series will have the form stated in equation 4.2:

$$\min \sum_{t=1}^{T} (y_t - g_t)^2 + \lambda \sum_{t=2}^{T-1} [(g_{t+1} - g_t) - (g_t - g_{t-1})]^2 \tag{4.2}$$

Here, T is the number of observations and λ is the smoothing parameter, specifying the smoothness of the trend. A normal λ-value for annual data would be 100, when 1,600 and 14,400 are regarded as normal values for quarterly and monthly data sets, respectively. Thus, we apply $\lambda = 100$ in the present analysis.

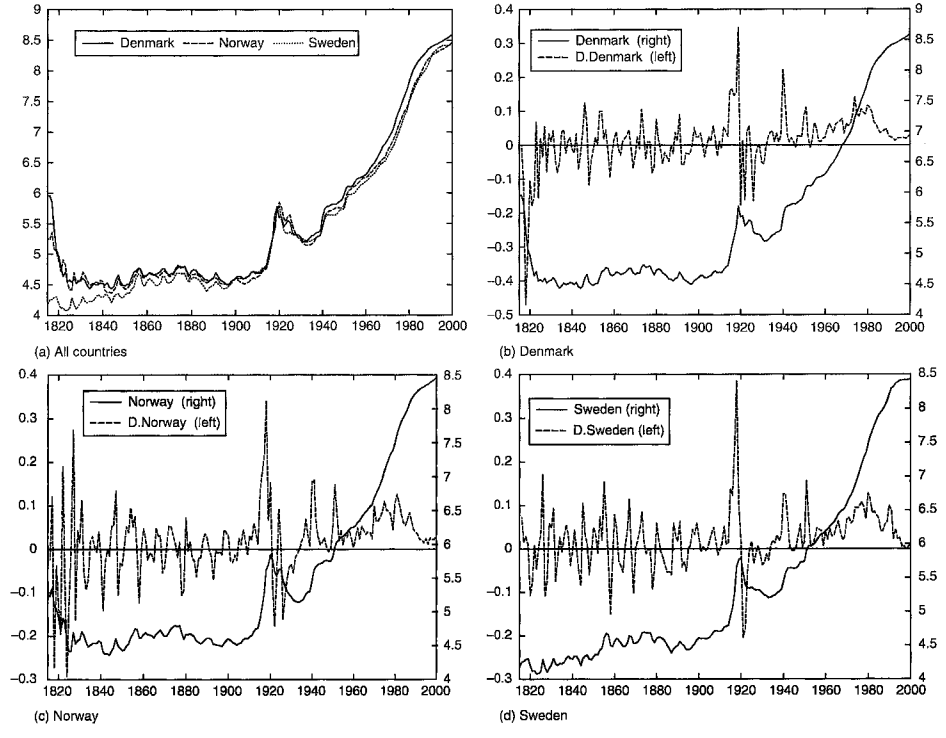

Figure 4.1 CPIs and first differences for Denmark, Norway and Sweden, 1815–2000

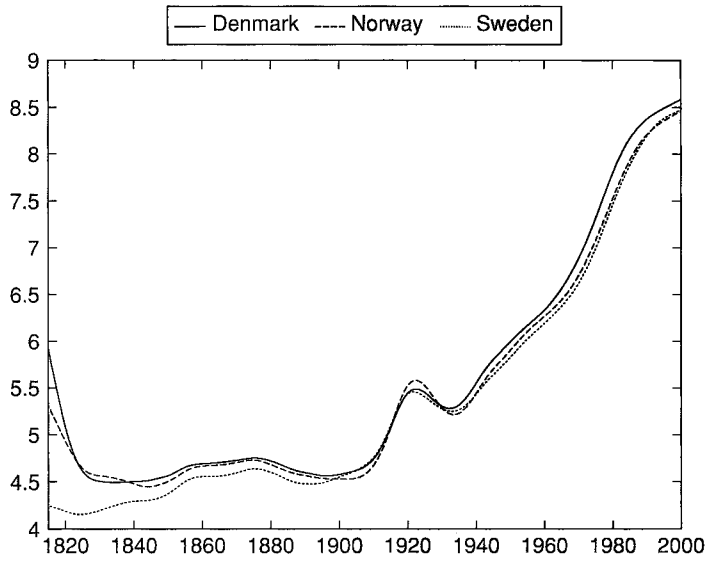

Figure 4.2 CPIs for Denmark, Norway and Sweden, 1815–2000
Notes: HP-filtered with λ = 100; 1900 = 100.

The smoothed trends of price developments for Denmark, Norway and Sweden for 1815–2000 are plotted in Figure 4.2. By using an HP-filter in order to smooth the series, we find that, from a long-term perspective, prices seem to have been quite stable from the mid-1850s until the outbreak of World War I. In other words, prices were most stable during the heydays of both the silver and the gold standards. Prices were also relatively stable from the 1840s to the introduction of gold in 1874, when inflation was stable during the post-World War II era until the early 1970s.[32]

In order to examine domestic long-term price stability, we will also use other simple quantitative measurements. The first is the mean rate of inflation (MRI), which reports the average inflation rate for certain periods, as stated in equation 4.3:

$$MRI = \frac{1}{N}\sum_{t=1}^{N}\Delta p_t \tag{4.3}$$

Here, t denotes the actual number of a certain observation, N denotes the total number of observations and $\Delta p_t = p_t - p_{t-1}$ where $p_t = \ln P_t$ and

Table 4.1 Long-term domestic price stability

	1815–1842	1843–1873	1874–1913	1914–1945	1946–2000	1815–2000
Denmark						
MRI	−0.053	0.008	0.000	0.032	0.050	0.014
LLRI	−0.041	0.008	−0.002	0.013	0.060	0.019
R^2	0.560	0.541	0.062	0.240	0.974	0.696
Norway						
MRI	−0.033	0.012	0.000	0.031	0.050	0.017
LLRI	−0.027	0.010	−0.003	0.006	0.057	0.019
R^2	0.646	0.635	0.158	0.047	0.976	0.712
Sweden						
MRI	0.006	0.011	0.002	0.027	0.051	0.023
LLRI	0.005	0.012	0.003	0.008	0.059	0.021
R^2	0.229	0.630	0.102	0.098	0.975	0.808

$p_{t-1} = \ln P_{t-1}$. Second, we look at the inflation rate as a log-linear function within periods. In doing so, we estimate regression coefficients according to a log-linear equation. By doing this we obtain the exponential growth trend of prices during time-spans, here called the log-linear rate of inflation (*LLRI*), according to equation 4.4:

$$P_t = \beta_0 e^{\beta_1 t} + \varepsilon_t \tag{4.4}$$

where $LLRI = \beta_1$ and P_t is the price index in levels. Further, β_0 is a constant and ε_t is the disturbance-term.

The results of the estimates for the MRI and LLRI are presented in Table 4.1. They confirm that both the inflation rate and the trend rate of inflation were quite modest and close to zero during the heydays of the Scandinavian gold standard (1874–1913/1914).[33] In addition, prices maintained a significantly more stable level during these years when compared with any other period under investigation. Thus, on the basis of the calculations presented in Table 4.1, we can conclude that long-term domestic price stability was quite good during the gold standard era of the Scandinavian countries.

Short-term domestic price stability

To examine the short-term price fluctuations, we use the mean rate of price change (MRPC), which reports the relative changes of prices in absolute terms. Hence, in our first approach, in order to investigate

short-term price stability, we look at the mean of price changes. By using this method, inflation and deflation do not annul each other as they do in the MRI-calculations. Equation 4.5 illustrates how MRPC is found:

$$MRPC = \frac{1}{N}\sum_{t=1}^{N}\sqrt{\Delta p_t^2} \tag{4.5}$$

To map the strength of the fluctuations from the trend component, we calculate the standard deviations of the observed price value from the corresponding HP-trend (SDHPT) at the same point. This is not the same as a general standard deviation, which is calculated as a standard deviation from the mean value. In order to make clarify the approach in this chapter, a relative standard deviation from the HP-trend is stated in equation 4.6:

$$SDHPT = \sqrt{\frac{1}{N}\sum_{t=1}^{N}(p_t - p_t^{HP})^2} \tag{4.6}$$

Here, p^{HP} denotes the HP-trend at observation t, which is a time parameter (both p_t and p_t^{HP} are the natural logarithm of the variable). If outcomes from these calculations show relatively modest standard deviations from trend during the gold standard period, we can conclude that short-term price stability was good.

Sub-periods

In order to carry out these estimations, we have divided our series into sub-periods. The first covers the years 1815–42, which include the aftermath of the Napoleonic wars and the turbulent times until monetary stability was restored for all three Scandinavian countries in 1842.[34] The second period covers the silver standard era for the Scandinavian economies, 1843–73.[35] The third period is the key period of this chapter, 1874–1913, the heydays of the international gold standard in the Scandinavian countries.[36] The fourth period stretches from 1914 until 1945 and includes two world wars and turbulent times for the international economy.[37] Thereafter, we look at the postwar era, 1946–2000, a time of social-democratic order in the Scandinavian countries.[38]

The results of the calculations are reported in Table 4.2, and give fairly clear evidence of price stability in the gold standard era. The table confirms that price stability was high during the gold standard period 1874–1913. Admittedly, the deviations from the HP-trend were smaller

Table 4.2 Short-term domestic price stability

	1815–1842	1843–1873	1874–1913	1914–1945	1946–2000	1815–2000
Denmark						
MRPC	0.081	0.044	0.032	0.075	0.051	0.054
SDHPT	0.099	0.058	0.051	0.106	0.026	0.069
Norway						
MRPC	0.096	0.044	0.030	0.081	0.050	0.057
SDHPT	0.097	0.057	0.048	0.120	0.029	0.072
Sweden						
MRPC	0.048	0.052	0.029	0.065	0.051	0.049
SDHPT	0.054	0.062	0.051	0.131	0.029	0.069

after World War II. However, this was due to a period of constantly high and more or less stable inflation, rather than price stability. Thus, we have to observe the difference between price stability and the persistence of inflation.

Inflation persistence

So far we have looked at different measures of domestic price stability. In this section, we take a new approach by looking at inflation persistence. Since the turn of the millennium, this has become an important topic in macroeconomics.[39] There are different definitions of inflation persistence in the economics literature – e.g. Batini and Nelson distinguish between three types.[40]

- positive serial correlation in inflation;
- lags between *systematic* monetary policy actions and their (peak) effect on inflation; and
- lagged responses of inflation to non-systematic policy actions (i.e. policy shocks).

Before investigating inflation persistence in detail, we start by looking at mean inflation in a time period by regressing the inflation on a constant only. The standard error of the regression is an estimate of the standard deviation of the inflation:

$$\pi_t = \mu + \varepsilon_t \tag{4.7}$$

where $\pi_t = \Delta p_t$.

In studying inflation persistence, we estimate a univariate *AR* process for the inflation time series:

$$\pi_t = \mu + \sum_{j=1}^{k} \alpha_j \pi_{t-j} + \varepsilon_t \tag{4.8}$$

We assume that the error term ε_t is serially uncorrelated, but possibly heteroscedastic. As a measure of the degree of inflation persistence, denoted by ρ, we use the sum of the estimated lagged autoregressive coefficients.[41]

$$\rho \equiv \sum_{j=1}^{k} \hat{\alpha}_j \tag{4.9}$$

Equation 4.8 can be rewritten as

$$\pi_t = \mu + \rho \pi_{t-1} + \sum_{j=1}^{k-1} \beta_j \Delta \pi_{t-j} + \varepsilon_t \tag{4.10}$$

The inflation persistence is still defined as $\rho = \sum \alpha_j$, and its value is given by the estimate of ρ – i.e. $\hat{\rho}$. The parameters β_j are transformations of the parameters α_j in Equation 4.8. An interesting feature of Equation 4.10 is the value of ρ. If $\rho = 1$, the time series has a unit root; and if $|\rho| < 1$, the data generating process of the inflation is stationary. The estimates show that the inflation series is stationary.

The estimation results of the specifications in Equations 4.7 and 4.10 are given in Tables 4.3 (Denmark), 4.4 (Norway) and 4.5 (Sweden). To decide upon the number of lags k to include in the estimation, we have used the Akaike information criteria and the Schwarz criterion with a maximum of seven lags.

For the Scandinavian countries, mean inflation was lowest during the period of the classic gold standard and the existence of the Scandinavian Currency Union (1874–1913), where mean inflation was zero or close to zero (Model 1 in Tables 4.3, 4.4 and 4.5). The estimates of the persistence parameter ($\hat{\rho}$) show that all three countries experienced a dramatic increase in inflation persistence after the breakdown of the Currency Union. In fact, our results are in line with Benati. For several countries, including Sweden, 'statistical persistence [seems] to have been entirely absent from the pre-1914 world, and to have appeared only after the collapse of the classical gold standard'.[42] Further, adding this to the estimates

Table 4.3 Estimates of mean inflation and inflation persistence for Denmark, 1815–2000

	1815–1842	1843–1873	1874–1913	1914–1945	1946–2000	1815–2000
	Model 1					
$\hat{\mu}$	−0.0528	0.0080	0.0000	0.0325	0.0504	0.0142
s.e.	0.0231	0.0102	0.0063	0.0190	0.0046	0.0059
$\hat{\sigma}$	0.1202	0.0567	0.0401	0.1074	0.0340	0.0797
	Model 2					
$\hat{\rho}$	0.3406	0.0322	0.0255	0.3818	0.8003	0.5218
s.e.	0.1543	0.2218	0.1947	0.2253	0.0992	0.0047
R^2	0.4278	0.1867	0.0884	0.0901	0.6178	0.2040
adj. R^2	0.3007	0.1286	0.0391	0.0274	0.5953	0.1859
$\hat{\sigma}$	0.0596	0.0529	0.0393	0.1060	0.0217	0.0606
$k-1$ lags	3	1	1	1	2	3

Note: Model 1 = estimate of mean inflation; Model 2 = estimate of inflation persistence.

Table 4.4 Estimates of mean inflation and inflation persistence for Norway, 1815–2000

	1815–1842	1843–1873	1874–1913	1914–1945	1946–2000	1815–2000
	Model 1					
$\hat{\mu}$	−0.0326	0.0121	−0.0001	0.0307	0.0496	0.0173
s.e.	0.0244	0.0098	0.0061	0.0193	0.0046	0.0058
$\hat{\sigma}$	0.1270	0.0547	0.0385	0.1091	0.0341	0.0788
	Model 2					
$\hat{\rho}$	−0.3656	0.0899	0.2468	0.5681	0.6194	0.5811
s.e.	0.3064	0.2256	0.1938	0.1665	0.1153	0.1130
R^2	0.0616	0.0543	0.0850	0.3586	0.4187	0.2304
adj. R^2	−0.0238	−0.0133	0.0355	0.3143	0.3963	0.1987
$\hat{\sigma}$	0.1296	0.0550	0.0378	0.0903	0.0265	0.0653
$k-1$ lags	1	1	1	1	1	6

Note: Model 1 = estimate of mean inflation; Model 2 = estimate of inflation persistence.

of Model 1 in Tables 4.3, 4.4 and 4.5 and the graphical representation of the inflation rates in Figure 4.1, it seems clear that less persistence is corresponding to less variability in inflation – cfr. the quotation from Willis at the beginning of the chapter ('Other things equal, less persistence leads to less variability. Lower persistence is associated with faster but smaller swings in inflation over time that, in statistical terms, reduce the overall variability of inflation').

Table 4.5 Estimates of mean inflation (Model 1) and inflation persistence (Model 2) for Sweden, 1815–2000

	1815–1842	1843–1873	1874–1913	1914–1945	1946–2000	1815–2000
	Model 1					
$\hat{\mu}$	0.0059	0.0111	0.0025	0.0268	0.0508	0.023
s.e.	0.0121	0.0119	0.0059	0.0187	0.0049	0.0048
$\hat{\sigma}$	0.0629	0.0661	0.0374	0.1057	0.0362	0.065
	Model 2					
$\hat{\rho}$	−0.3024	−0.5252	0.2534	0.561	0.7041	0.4366
s.e.	0.2833	0.2912	0.1706	0.1457	0.131	0.0729
R^2	0.0944	0.3248	0.1615	0.4907	0.4107	0.2767
adj. R^2	0.0121	0.2498	0.1162	0.4556	0.3761	0.2687
$\hat{\sigma}$	0.0635	0.0572	0.0352	0.078	0.0286	0.0558
$k-1$ lags	1	2	1	1	2	1

Note: Model 1 = estimate of mean inflation; Model 2 = estimate of inflation persistence.

Rolling estimates of $\hat{\rho}$

Instead of defining sub-periods on the basis of historical events, we adopt a method of rolling regressions. Thus, we estimate the persistence parameter ρ in a time moving sub-sample of 15 years. The estimates of ρ together with a 95 per cent confidence interval are presented in Figures 4.3, 4.4 and 4.5 for the countries under investigation. These confirm the analysis. There is a marked shift in the persistence parameter at the outbreak of World War I. During the classic gold standard, both levels and the variability of the persistence parameter ρ were lower than after 1914.

Cross-border price stability

Also, cross-border price stability can be seen in the long and the short run. Here, we again investigate both relationships in order to throw light on how effective the Scandinavian adoption of the international gold standard from the 1870s was with regard to price stability.

From Figure 4.1, we observed that prices seem to have had a fairly high degree of co-movement in the gold standard era from 1874 until the outbreak of World War I in July/August 1914. According to Figure 4.6, prices in the three countries moved uniformly between 1874 and 1914, both in the long term and in the short term. Inflation and deflation were seldom more than 5 per cent and never more than 10 per cent. The co-movement of prices confirms cross-border price stability.

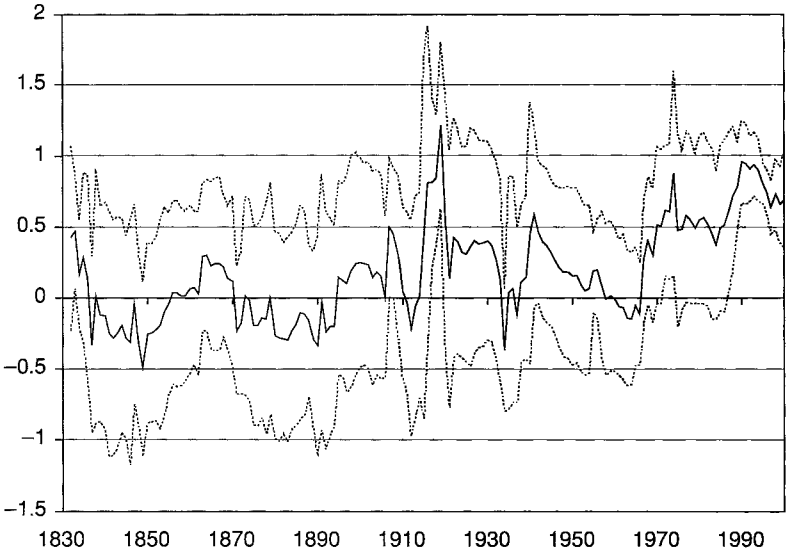

Figure 4.3 Rolling estimates and approximate 95% confidence interval of the persistence parameter $\hat{\rho}$ for Denmark, 1815–2000 (Window size 15 years)

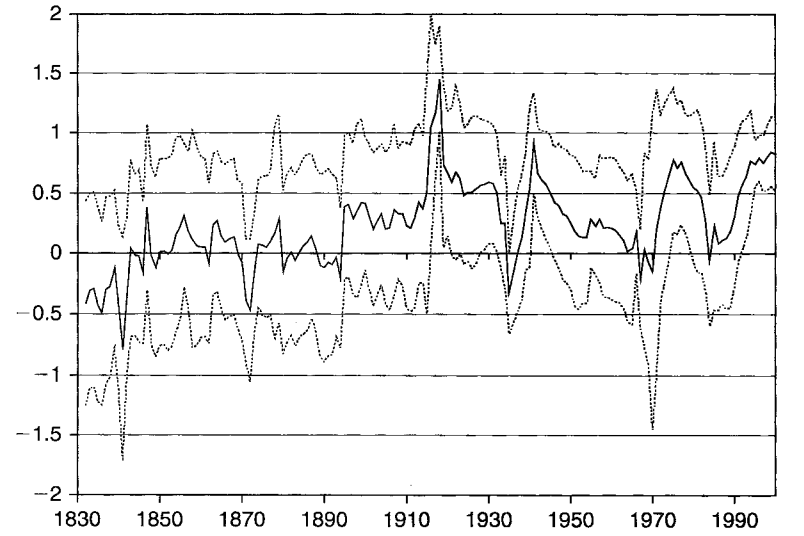

Figure 4.4 Rolling estimates and approximate 95% confidence interval of the persistence parameter $\hat{\rho}$ for Norway, 1815–2000 (Window size 15 years)

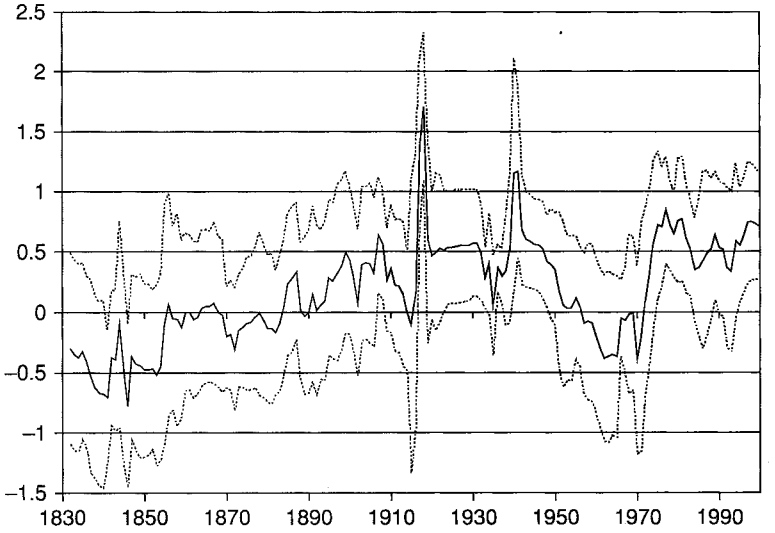

Figure 4.5 Rolling estimates and approximate 95% confidence interval of the persistence parameter $\hat{\rho}$ for Sweden, 1815–2000 (Window size 15 years)

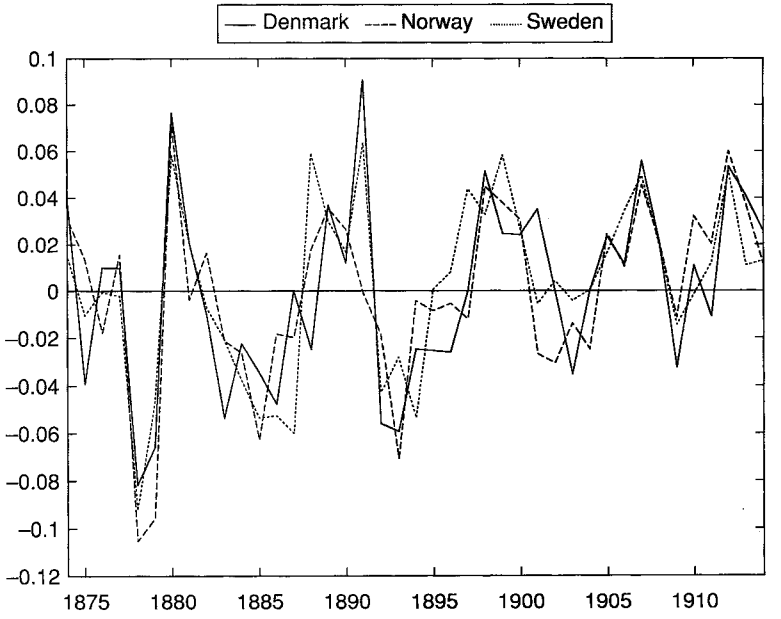

Figure 4.6 Annual inflation rates in Denmark, Norway and Sweden, 1874–1914

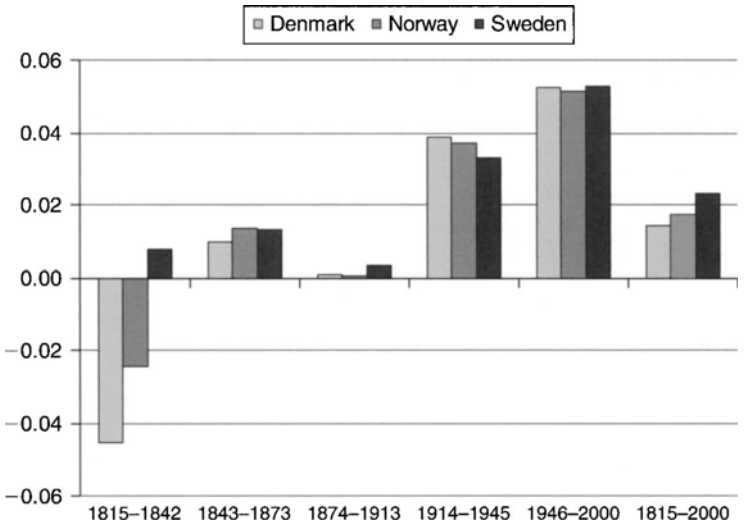

Figure 4.7 Mean rates of inflation for Denmark, Norway and Sweden, 1815–2000

Long-term price stability

The inflation rates during the period in question can tell us a great deal about cross-border price stability. Thus, we have compared the average or mean rates of inflation for the three countries during the different sub-periods. Figure 4.7 reveals that overall inflation was close to zero in all three countries between 1874 and 1913, and significantly closer than in any other sub-period. In addition, the inflation rates were also very similar during the period of the gold standard. Thus, it is obvious to draw the conclusion that long-term cross border price stability was predominant for the Scandinavian economies from the introduction and adoption of the gold standard in January 1874 until the outbreak of World War I in July/August 1914.

Short-term price stability

If short-term cross-border price stability was strong during the gold standard period, one would expect a high degree of co-movement of prices and also minor deviations of inflation and deflation between the countries. Hence, we seek to establish whether this was the case.

First, we calculate correlation coefficients for price movements between the three countries. According to Figure 4.2, the long-term co-movements of prices were very good for Denmark, Norway and Sweden,

except for a variation in the development of prices in Sweden until the early 1840s. By looking at the correlation of price deviations from the HP-filtered trend, we find a measure of co-movements of prices around their polynomial trends (Equation 4.11):

$$corr(p_i, p_j) = corr(p_{it} - p_{it}^{HP}, p_{jt} - p_{jt}^{HP}) \tag{4.11}$$

Here, i and j denote different countries. Correlation matrices are made for the three countries reporting all sub-periods. Next, we calculate the standard deviations. More precisely, we look at relative annual standard deviations of inflation from the mean values for the three countries (SDM), and examine whether the gold standard period caused any difference (Equation 4.12):

$$SDM = \frac{1}{N}\sum_{t=1}^{N}\sqrt{\frac{1}{Z}\sum_{i=1}^{Z}(\Delta p_{it} - \Delta p_t^m)^2} \tag{4.12}$$

In Equation 4.12, m denotes the mean value (over countries) of prices, i the number of the country from which the observation is taken, when Z is the total number of countries in the sample.

The results from the latter calculations are reported in Tables 4.6 and 4.7. Table 4.6 reveals that, with the exception of unsatisfactory correlation of Swedish data with those of Norway and Denmark during the period 1815–42, co-movements of prices were quite high. For the period of the gold standard, the correlation coefficients are stunning, inasmuch as they are close to or above 0.9 for all observations.

The correlation coefficients are quite impressive for the silver standard period (1843–73). These high correlations of short-term price movements around the polynomial trend give substantial evidence of short-term cross-border price stability in the three countries, which were all members of the Scandinavian Currency Union at the time.

Table 4.7 reports average relative standard deviations of inflation from the cross-border mean values by sub-periods. Again, we find that the standard deviations were at their lowest during the gold standard period of the countries under investigation.

Admittedly, after World War II we find average standard deviations, which are at the same low level. However, this can be explained by a social-democratic planning regime and a continuously more globalized world economy, in which the Scandinavian countries took part.[43] When it comes to centralized economic planning, they were among the leading

Table 4.6 Correlation matrix on price deviations from HP-filtered trend

1815–1842:	Denmark	Norway	Sweden	
	1.0000	0.4087	0.2120	Denmark
		1.0000	0.1750	Norway
			1.0000	Sweden
1843–1873:	Denmark	Norway	Sweden	
	1.0000	0.9055	0.7711	Denmark
		1.0000	0.7903	Norway
			1.0000	Sweden
1874–1913:	Denmark	Norway	Sweden	
	1.0000	0.8885	0.9312	Denmark
		1.0000	0.9228	Norway
			1.0000	Sweden
1914–1945:	Denmark	Norway	Sweden	
	1.0000	0.8703	0.8300	Denmark
		1.0000	0.8841	Norway
			1.0000	Sweden
1946–2000:	Denmark	Norway	Sweden	
	1.0000	0.5636	0.5785	Denmark
		1.0000	0.5803	Norway
			1.0000	Sweden
1815–2000:	Denmark	Norway	Sweden	
	1.0000	0.7258	0.6836	Denmark
		1.0000	0.7259	Norway
			1.0000	Sweden

Notes: 5% critical values (two-tailed): 1815–1842: 0.3739 for $n = 28$; 1843–1873: 0.3550 for $n = 31$; 1874–1913: 0.3120 for $n = 40$; 1914–1945: 0.3494 for $n = 32$; 1946–2000: 0.2656 for $n = 55$; 1815–2000: 0.1439 for $n = 186$.

Table 4.7 Average standard deviations from annual mean values of inflation

Years	**S.d.**
1815–1842	0.058813
1843–1873	0.023312
1874–1913	0.013307
1914–1945	0.031414
1946–2000	0.012407
1815–2000	0.024489

economies in the capitalist world.[44] Also, there was a steady high inflation trend during this sub-period, making it less comparable with the other sub-periods. In the more or less liberal world era before World War II, the international gold standard years 1874–1913 saw lower

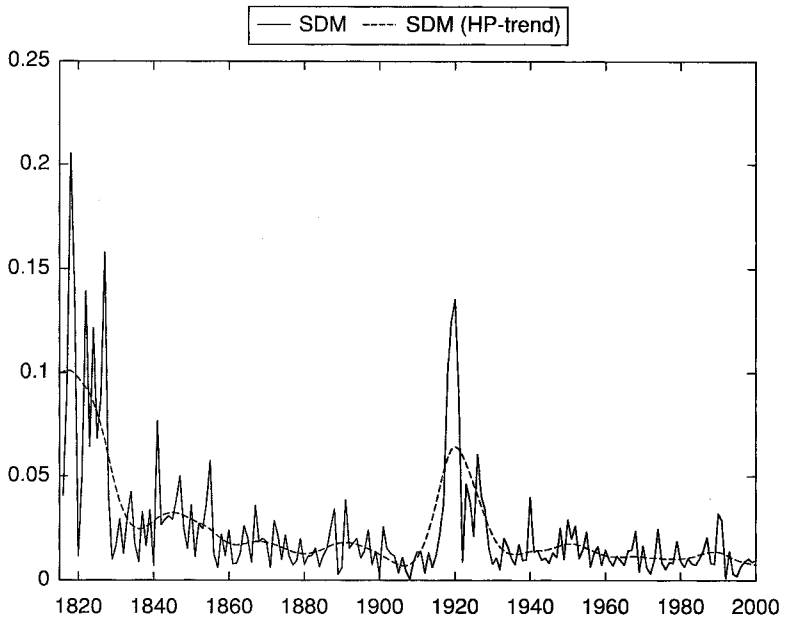

Figure 4.8 Standard deviations of inflation from mean values for Denmark, Norway and Sweden, 1815–2000

standard deviations from mean inflation and, thus, confirm that short-term cross-border price stability was high during this period.

The developments of the calculated standard deviations are shown annually in Figure 4.8, which gives us a clear indication of significant cross-border price stability during the gold standard era. Both the annual deviations for 1815–2000 and the HP-filtered trend are reported in Figure 4.8.

Price stability clearly was at its lowest during the periods of monetary chaos (1815–42 and 1914–45) and high under the silver and gold standard years (respectively 1843–1873 and 1874–1913), together with the post-World War II period. This development definitely reflects international trends in price history.[45] However, price stability during the postwar era was more a state of inflation persistence than price stability. Also, when inflation was at its most persistent (1952–73), this seems to have ended with significantly higher inflation rates in the 1970s followed by lower inflation as from the 1990s. Again, the development of consumer prices in the Scandinavian countries mirrors the international picture, despite a huge improvement in the terms of trade for the petroleum-dependent Norwegian economy.[46]

Conclusion

The present chapter offers an examination of monetary policy and inflation dynamics (defined as 'price stability' and 'inflation persistence') in Denmark, Sweden and Norway under the international gold standard regime during the period 1877–1914.

In January 1874, Denmark and Sweden formed the Scandinavian Currency Union, Norway becoming a member in January 1877. Similar key currencies were adopted – the Danish, Swedish and Norwegian krone – each of which had the same gold value and were mutually legal tender. This should, in theory, have ensured price stability and inflation persistence for and between them.

In order to examine the inflation dynamics of the gold standard, this chapter gives quantitative analysis of domestic and cross-border short- and long-term price stability, together with inflation persistence. It builds its analysis on existing and new cost of living/consumer price indices for the three countries. The most important conclusions are that, in the long and short run, both domestic and cross-border price stability were predominant during the gold standard period. In fact, the gold standard years (1874–1914) stand as the period with the highest price stability, both domestically and cross-border, of the last two centuries. The analysis also gives evidence of practically no inflation persistence during the period. In this respect, the gold standard and the monetary policy connected to this monetary regime should be considered a success, despite its failure to maintain financial stability in times of great shocks to the economy.

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5

Monetary Policy in the Nordic Countries during the Classical Gold Standard Period: The Wicksellian View

Concepción García-Iglesias and Juha Kilponen

Introduction

In his article 'The Influence of the Rate of Interest on Prices', *Economic Journal* XVII (1907), Knut Wicksell argued that the variations in price level during the classical gold standard were not primarily due to variations in gold supply but, rather, to the interest rate policies followed by the central banks (i.e. discount rate adjustment), and the real disturbances affecting the natural rate of interest. According to Wicksell, price stability required keeping the interest rate controlled by the central bank in line with the natural rate of interest determined by factors outside the control of the central bank.

Wicksell argued that when the loan rate fell below the natural rate, it caused the demand for loans by entrepreneurs to be in excess of national savings. The banks would then expand credit by creating checking accounts (demand deposits) rather than by supplying savings. This would lead into economic expansion and rising prices, unless the central bank tightened monetary policy appropriately by increasing the discount rate. Money supply, in turn, would vary passively so as to satisfy money demand relationship without placing a restriction on how the equilibrium rate of interest and prices were determined. This view was in sharp contrast to Irwin Fisher, who argued that the quantity of money would fully explain changes in the long-run prices.

In this chapter, we adopt the Wicksellian view of monetary policy and estimate the structural neo-Wicksellian monetary policy model for the peripheral countries of Denmark, Finland, Norway, and Sweden during the classical gold standard period.[1] The structural model studied in this chapter consists of an inflation equation; the central bank interest rate

reaction function and money demand function, consistent with Knut Wicksell's assertion of monetary policy and the role of money; and output (gap) equation consistent with the permanent income hypothesis and consumption smoothing. The inflation equation features some price stickiness and gives rise to short-run real effects of monetary policy, while the interest rate reaction function captures the central bank's objectives of stabilizing prices and output. The model for each country is estimated by Bayesian maximum likelihood methods using the latest available data on inflation, discount rates, money supply (M2), and the output gap for the period 1871–1913 from various sources.

Our estimation results (for all countries) suggest that the discount rate adjustments were geared towards achieving the price stability objective, although not perfectly. Impulse response analysis based on the estimated structural model shows that the monetary authorities were leaning against the wind by increasing the discount rate in response to shocks (cost push shocks and natural rate shocks) that increased inflation, and thus price level. The nominal rate increase led to a rise of real interest rates and an economic contraction that was sufficiently strong to lower inflation temporarily below its long-run mean, such that the price level adjusted gradually back towards the target. We also find that the differences in monetary transmission across countries are surprisingly small. The main differences are due to adjustment speeds of prices, output and the interest rate controlled by the monetary authorities in response to different shocks. These differences stem partly from differences in the estimated interest rate reaction functions, which indicate varying degrees of commitment to price and output stability in different Nordic countries.

The outline of our chapter is as follows. We begin with a brief description of the most important characteristics of the economic and monetary policies of the Nordic countries during the closing years of the nineteenth century and the beginning of the twentieth century. Next, we discuss the structural model and present the data used in the estimation. We then move on to the empirical results on the Wicksellian view of monetary policy, including the Bayesian impulse response analysis. We conclude with observations regarding the conduct of monetary policy during the classical gold standard period for the Nordic countries.

Economic and historical background

The classical gold standard

The gold standard regime was a credible commitment mechanism characterized by price and exchange rate stability.[2] According to Flandreau

and Maurel, the gold standard functioned within the category of gold bands similar to a target zone.[3] Hence, intervention was possible when reaching the bands, stabilizing capital flows, and making the exchange rate revert towards parity. There was some room left for independent monetary policy and the central banks could use either the discount rate or open-market operations as monetary policy instruments in order to restore equilibrium.

When using the main policy instrument, the discount rate, the central bank was able to alter domestic money supply and to restore external balance in the absence of gold shipments. The process started when merchants borrowed money from banks and other financial intermediaries. Then, the central bank provided the money for those loans in return for the bill signed by the merchant as a form of collateral and the payment of interest. Advancing the money was known as 'discounting the bill', and the interest charged on it was called the discount rate. If the discount rate was raised, fewer financial intermediaries would opt to present the bills on discount and hence obtain funds for lending on merchants. Therefore, the discount rate adjustment represented changes in domestic credit and domestic money supply, without actual gold flows.[4]

The other policy instrument was open-market operations. In this case, the central bank sold bonds reducing cash from circulation. The money supply decreased in the same way as a gold outflow but without actual movement of gold. However, open market operations were relatively rare under the classical gold standard, being the discount rate the main policy tool used. Interest rate adjustment was subject to some discretion, although maintenance of currency convertibility was the main objective, requiring that the central banks adjusted the discount rates accordingly to restore balance of payments disequilibria.[5]

This behavior by the central banks subsequently became known as the 'rules of the game'. As long as the rules were followed and adjustment to a change in external balance was possible, the commitment to convertibility was strengthened. However, the rules were frequently violated, as discount rates were not always altered in the right direction or in the right amount. This is evident from the negative correlation between changes in domestic credit and changes in gold reserves. Therefore, central banks could increase their discount rate in response to an influx of gold in order to tighten domestic credit conditions. Evidence suggests that the Bank of England played a very important role as the main monetary policy agent. By manipulating the bank rate, the Bank of England was able to attract gold reserves; thus, other central banks would need to adjust their discount rates accordingly. This means that the Bank of England had important influence on the money supplies and the price

levels of other gold standard countries. Consequently, a country could violate the rules of the game in the short-run for domestic stability as long as the country's commitment to gold was credible.[6]

Nordic experiences

Prior to the gold standard, Denmark, Norway and Sweden operated under a silver standard. In 1872, an agreement to form a monetary union was signed, and Denmark and Sweden joined the Scandinavian Currency Union; Norway joined three years later, in 1875. The central banks redeemed the notes issued by other central banks at par (at their face value) from 1892 to 1905, while in other years there was a small fee. In addition, there was a clearing mechanism that, to a large extent, obviated the need for gold shipments between the central banks. The complete or nearly complete absence of transaction costs in currency exchange presumably promoted the development of a more integrated Scandinavian money market. At the same time, in the Scandinavian Currency Union each country was able to pursue de jure independent monetary policy – within the limits set by the international gold standard – there being no agreement over common interest rate policies. The three Scandinavian countries adhered to the system until the outbreak of World War I in 1914.[7]

Regarding the development of the Scandinavian financial sector, there were similar patterns among the three countries. Throughout the nineteenth century, the main banking system in Sweden consisted of the private note issuing banks, the so-called Enskilda banks. The expansion of the commercial banking did not occur until the mid-1860s. The central bank, the Riksbank, was founded in 1668, but initially functioned in a very elementary way. In the 1870s, the Riksbank's goals were extended to stabilize both domestic and external balance with the primary objective of maintaining the specie standard. The creation of selected foreign reserve assets legally independent of the note issuance provided considerable policy autonomy for the bank from 1873 onwards. The Riksbank used different policy instruments to achieve its goal and carried out active short-run stabilization policies. Among the instruments that were routinely used was the discount rate, which the bank adjusted to protect its foreign reserves.[8]

The first savings bank in Denmark was established in 1810. Three years later, in 1813 and after monetary reform, the Rigsbank was founded as a new banknote issuing bank to hold a bank mortgage. It was, however, unable to maintain the value of the new banknotes, leading to strong price fluctuations. In 1818, the Nationalbanken i Kjøbenhavn

(the National Bank in Copenhagen) was established as a limited liability company. By royal charter, it had the sole right to issue banknotes for 90 years and was completely independent from the state. Its main task was to restore order to the Danish monetary system, and its revenue was the bank mortgages. After confidence in the banking system was restored in the 1830s, a credit market developed together with savings banks, banks and mortgage credit associations. The central bank of Denmark (the Danmarks Nationalbank) became the government's bank in 1914, and did not take over the printing of banknotes until 1918.[9]

The financial sector in Norway also developed slowly. The central bank (the Norges Bank) was established in 1816 and began normal operations in 1818. During the 1820s, the first savings banks were chartered and the first private bank was established in the middle of the century. The Norges Bank's share of total lending increased considerably in 1840 by the extension on long-term loans. However, this lending activity decreased once the Norges Bank started behaving more in the style of a central bank by extending short-term loans and using the discount rate as a monetary policy instrument. By the 1870s, the financial sector was sufficiently mature for the central bank to start the gradual process of withdrawing from ordinary commercial banking. However, although it moved closer to behaving as a proper central bank, the Norges Bank continued to behave more as a private bank at the turn of the century.[10]

The principal objective of the Norges Bank was to maintain gold convertibility of notes in circulation, requiring the bank to protect its gold and foreign exchange reserves. Simultaneously, Øksendal's findings suggest that the Norges Bank put substantial emphasis on domestic factors in setting its monetary policy, discount rates being adjusted on many occasions to the benefit of the domestic business cycle.[11] In order to maintain a degree of discretion over its monetary policy, the Norges Bank operated with relatively large notes and foreign reserves.

In the case of Finland, the central bank was founded as early as 1812. Despite the fact that the Bank of Finland granted savings and commercial banks credit, it also continued to compete for private customers. At the end of the century, the Bank of Finland adopted regulatory tasks – acting as a bank for banks – in addition to other functions of a central bank. These included its position as the holder of foreign currency reserves, determining foreign exchange rates, note-printing and the rediscounting of bills, which started in 1890. The financial system, however, remained undeveloped with only the central bank and approximately 10 savings banks functioning. During the 1860s, the Finnish private banking system began to develop and the creation of its own currency, the markka,

occurred in the 1860s. Afterwards, the banking system, together with its own new currency, accelerated business development in Finland, but clearly at a much slower pace than in the Scandinavian countries. Finland was an autonomous grand duchy of the Russian Empire but, despite this special relationship and the underdeveloped banking system, it also joined the gold standard in 1877, some years later than the Scandinavian countries. During the 1880s, the Bank of Finland expanded its operations and established new branches.[12] From 1890 to 1913, the Finnish economy seemed to be moving towards greater stability, enjoying the benefits of the world monetary regime. The stability provided by the system led to increased credibility in the international financial markets and easier access to capital markets.[13]

Similarly to the mainstream practice of the other central banks, discounting bills of exchange became the most important form of lending of the Bank of Finland during the classical gold standard period. Within the limits of its reserves, the Bank of Finland adjusted its interest rate to reflect domestic money market conditions, but the interest rates were held relatively stable throughout the period. Influence of the foreign money markets to the Bank of Finland's interest rate policies increased during the second half of the period, yet the independence of its interest rate policies on Russian rates remained.[14]

To summarize, all the Nordic countries had their central banks or their predecessors operating by the time of the creation of the classical gold standard. The central banks' instruments and functions differed, but the main objective of all the central banks was to maintain gold convertibility of the notes in circulation and protect foreign reserves during the classical gold standard period.

At the same time, there is substantial evidence that the central banks in the Nordic countries not only mechanically followed the rules of the game, but also manoeuvered their policies in a discretionary fashion to the benefit of the domestic market conditions. Discount rates were adjusted either to ease or to tighten the domestic credit conditions in the face of fluctuations in money demand. Although the central banks had no commodity price target as such, the discount rate adjustments were geared towards stabilizing credit conditions and, hence, the domestic business cycle, together with prices.

The model

In order to characterize the monetary policy in the Nordic countries during the classical gold standard period, we estimate a model which builds

on the new neoclassical synthesis.[15] The main assumption that makes it different from the classic approach is that monopolistically competitive firms do not adjust their product prices flexibly, so as to maintain a constant profit-maximizing mark-up. This imperfection plays an essential role in economic fluctuations and, as emphasized by Keynes, is a key explanation for why changes in money and other shifts in aggregate demand for goods affect output in the short-run. The central bank implements monetary policy using a short-term nominal interest rate as a policy instrument. The key in controlling inflation with a short-term interest rate is that the central bank can have influence over the real interest rate, which matters for optimal household consumption planning. The policy design problem is to characterize how the nominal interest rate should be adjusted in response to fluctuations in the state of the economy.

What makes the model Wicksellian is that the money demand equation, although derived from the households' optimality conditions that use money for real transactions, is *decoupled* from the rest of the model. It is decoupled in the sense that it does not place any restriction on how the equilibrium rate of interest, prices and output in the model are determined. The sole purpose of the money demand equation is to determine the money supply required to implement the central bank's interest rate policy. In essence, once the central bank's interest rate policy is characterized by the interest rate rule that links the policy instrument to the state of the economy, the money demand function can be dropped off from the Wicksellian monetary policy model. Beside nominal rigidity and a passive role for money, the underlying economy is classical and much of the model's appeal lies in the traditional IS/LM framework. The key difference is that the equilibrium equations determining prices and quantities are derived from explicit dynamic optimization problems.

Key structural equations

The economy is populated by representative households, their optimal lifetime consumption and labour supply plan being based on intertemporal optimization of lifetime wealth and the real rate of interest. There is free access to credit markets where the households can lend and borrow at nominal rate i_t. The consumers are subject to forming habits. This introduces into an otherwise standard Euler consumption equation both backward and forward looking elements, making the equation more consistent with the data. Employment and income are determined in a general equilibrium fashion, taking into account the representative household's choice of labour supply, firms' profit maximization and the

economy's production technology. The representative household's preferences in consumption and leisure, and real money balances are standard. In particular, utility is separable into three categories: consumption, leisure and real money balances. Expectations are rational. There is a large number of firms in the economy, each producing a different variety of consumption goods, subject to log-linear production technology, where only labour is used as an input. Because their products are somewhat different, firms are monopolistically competitive. Each firm has enough pricing power in the market for its own output to enable it to sustain a price above the marginal cost of production. The prices are set in a staggered manner, as in Calvo (1983), giving rise to nominal rigidity. More specifically, only a randomly chosen fraction $(1-\alpha)$ of the firms can re-adjust their prices in each period. Firms that are not allowed to re-optimize their prices adjust them according to a partial indexation to the most recently observed inflation rate. The latter assumption makes the model inflation dependent – not only on future inflation, but also on past inflation.

Since the complete model has been developed and discussed in detail – for instance, in Woodford (2003) – we do not go into details of the model's derivation. Instead, we state the key equilibrium relations. The model consists of three equations (aggregate supply – AS, investment savings – IS and liquidity preference money supply – LM curves) that result from appropriately log-linearized optimality conditions and resource constraints given by

$$\pi_t - \gamma\pi_{t-1} = \beta \mathsf{E}_t(\pi_{t+1} - \gamma\pi_t) + \kappa\tilde{x}_t + \varepsilon_t^{\pi} \tag{5.1}$$

$$\tilde{x}_t = \beta\eta \mathsf{E}_t(x_{t+1} - \eta x_t) + \mathsf{E}_t\tilde{x}_{t+1} - \varphi^{-1}[i_t - \mathsf{E}_t\pi_{t+1} - r_t^n] \tag{5.2}$$

$$m_t - p_t = \frac{1}{\xi}(\sigma^{-1}\tilde{x}_t - i_t) + \nu_t \tag{5.3}$$

where E_t is the mathematical expectations operator. Respectively, π, x, m and p denote logarithmic deviation of inflation, output, nominal money and price level from their respective steady state values. The natural rate of interest is r^n and i is the nominal interest rate. Finally $\tilde{x}_t = (x_t - \eta x_{t-1})$, i.e. $\tilde{x}_t$ is the quasi-difference of the output gap. The key structural parameters κ and φ are convolutions of the other deep parameters of the model. Most importantly, κ depends on the Calvo parameter $(1 - \alpha)$ which measures the degree of price rigidity, while φ^{-1} depends on the intertemporal elasticity of substitution σ.[16] Furthermore, in the

estimation, the habit persistence parameter η and the degree of price indexation γ play an important role, as they determine the degree at which output and inflation are backward looking. Instead of estimating κ directly, we have chosen to estimate the Calvo parameter α which then, given the other estimated and fixed parameters, gives us κ. We estimate φ directly, and then infer the value for the intertemporal elasticity of substitution σ.

Natural rate of interest

In the spirit of Knut Wicksell, r^n is the natural rate of interest and i is the nominal rate of interest controlled by the monetary authority. Following Wicksell's assertion, fluctuations in the natural rate of interest are exogenous to the model:[17] they reflect fluctuations in the expected labour productivity growth. We assume that the natural rate of interest follows an AR(1) process. Note that, according to Equation 5.2, deviations of the real interest rate from the natural rate cause output to deviate from its steady state value. This feeds into fluctuations of inflation (and inflation expectations), according to Equation 5.1. Consequently, in the face of the exogenous movements in the natural rate r^n, stabilizing inflation, and thus the price level, requires adjustment of the nominal interest rate i until real (ex ante) interest rate is aligned with the natural rate r^n. Note, furthermore, that the money demand function, Equation 5.3, does not place any restriction on how the equilibrium inflation (and prices) and output are determined in the model.[18]

Interest rate rule

In order to close the model, we consider an interest rate rule that incorporates both the price level and the inflation rate target. Modifying from Taylor (1993) and Batini and Yates (2003), we assume that the monetary policy follows the generalized Taylor rule of the form:

$$i_t = \rho_i i_{t-1} + (1-\rho_i)[\phi_\pi(E_t\hat{p}_t - \chi\hat{p}_{t-1}) + \phi_x x_t] + \varepsilon_t^i \tag{5.4}$$

where $\hat{p}_t$ is considered as a deviation of log price level from the target and ε_t^i is the interest rate (monetary policy) shock. The parameter that defines the spectrum of targets between price level and inflation is $\chi \in [0, 1]$. When $\chi = 0$, the monetary authority targets the price level; when $\chi = 1$, the inflation rate is targeted. In the latter case, 'bygones are bygones' and, although inflation is stabilized, shocks can have a permanent effect on the price level. Furthermore, ϕ_x measures the

relative weight that the central bank attaches to stabilizing the domestic business cycle. The degree of interest rate smoothing is controlled by parameter ρ_i.

This specification – albeit ambitious in terms of identification of the three parameters χ, ϕ_π and ϕ_x – allows us to disentangle the relative weights that the monetary authorities assigned to each target. In particular, higher values of χ and lower values of ϕ_x would point to a stronger direct commitment to commodity price stability. However, it is important to note that, during the classical gold standard, the price level – or, in fact, inflation measured in terms of prices of consumption goods – was not a direct objective for the central banks. The monetary authorities had the objective of keeping the relative price of money, and thus money supply, stable. From that point of view, the monetary authorities could have had an incentive to put a strong emphasis on stabilizing fluctuations in the real economic activity, and thus on the output gap. In this model, demand pressure, reflected by the opening of the output gap, would feed into an increase in the money demand according to Equation 5.3, unless the interest rate was appropriately adjusted to counterbalance a higher demand.[19] A 'strong' reaction of the nominal interest rate to the output gap could be an indication of the monetary authorities' commitment to stable money, rather than the real economic activity per se.

Moreover, there is a constraint in our model, in the sense that we restrict our analysis to stable rational expectations equilibria. This stability requirement restricts the coefficient of inflation in the Taylor rule to values that are closer to unity than zero, while the parameter controlling the objectives towards price stability and the output gap is allowed to vary from zero to unity. As a comparison, the types of rules estimated by Taylor (1998) for the international gold standard in the United States would not necessarily be consistent with the stable equilibria of the model estimated in this chapter.

Finally, exogenous shock processes for the natural rate of interest, velocity, cost-push shocks and monetary policy shocks are as follows:

$$r_t^n = \rho_r r_{t-1}^n + \varepsilon_t^{r^n}; \ \varepsilon_t^{r^n} \sim \mathbf{N}(0, \sigma_{r^n}^2) \tag{5.5}$$

$$v_t = \rho_v r_{t-1}^n + \varepsilon_t^v; \ \varepsilon_t^v \sim \mathbf{N}(0, \sigma_v^2) \tag{5.6}$$

$$\varepsilon_t^\pi = \rho_\pi \varepsilon_{t-1}^\pi + \varepsilon_t^\pi; \ \varepsilon_t^\pi \sim \mathbf{N}(0, \sigma_\pi^2) \tag{5.7}$$

$$\varepsilon_t^i \sim \mathbf{N}(0, \sigma_{\varepsilon^i}^2) \tag{5.8}$$

Estimation

Data

The data used in this chapter are annual observations from 1871 to 1913. The latter date was chosen as the outbreak of the World War I and, thus, the suspension of the classical gold standard. On the other hand, the former allows us to compare the four countries and to examine a relatively long period of data during the course of which the four countries adopted the same international monetary regime.

The four series analyzed in the model are the latest available estimates for each country, real GDP, money supply (M2), prices and discount rates. Data for Denmark are reported by Hans Chr. Johansen (1985). The Finnish data come from various sources. Real GDP and prices were constructed by Riitta Hjerppe (1996). The money supply series is based on the Bank of Finland database and Jaakko Autio (1996). The Bank of Finland discount rate is also from J. Autio (1996). As for Norway, all series come from the Historical Monetary Statistics for Norway (Eitrheim *et al.*, 2004). Finally, the Swedish real GDP and prices are reported by Olle Krantz and Lennart Schön (2007). The money supply series is from Anders Ögren (2003) and discount rate data are sourced from the Sveriges Riksbank (1931).[20]

Methodology

We use the Bayesian Maximum Likelihood methods to estimate the model and briefly discuss the key elements of the estimation methodology. The solution to the linear rational expectations model described by the structural equations 5.1–5.3, the policy rule 5.4, the exogenous stochastic processes 5.5–5.8, and the definition $p_t = \pi_t + p_{t-1}$ can be expressed as a vector of autoregressive laws of motion

$$s_t = \mathbf{A}(\theta)s_{t-1} + \mathbf{B}(\theta)\nu_t \tag{5.9}$$

where the coefficient matrices $\mathbf{A}(\theta)$ and $\mathbf{B}(\theta)$ are the functions of the model's parameters (such as β, α, σ, ξ above) and where the state vector s_t consists of

$$s_t = [\pi_t, x_t, i_t, m_t, p_t, r_t^n, \nu_t, \varepsilon_t^\pi, \varepsilon_t^i]' \tag{5.10}$$

In order to estimate the model based on a sequence of historical observations $H^T = [h_1, \ldots, h_T]$, we specify a system of measurement equations linking the observables to the vector of states s_t. The vector of observables h_t consists of the log real gross domestic product, log nominal

money (M2), GDP deflator inflation and the nominal interest rate. Log real gross domestic product and log nominal money has been HP-filtered ($\lambda = 100$), due to annual data. A set of measurement equations can thus be written as $h_t = \mathbf{D}(\boldsymbol{\theta})s_t$ for an appropriately chosen selector matrix $\mathbf{D}(\boldsymbol{\theta})$.

The likelihood function $p(H^T|\theta)$ can then be evaluated with the Kalman filter, which generates a sequence of state estimates $s_{t|t}(\theta)$ such that $s_{t|t}(\theta) = \mathsf{E}_t[s_t|\theta, H^T]$. The state estimates $s_{t|t}$ are obtained for all the model's endogenous variables, including the unobservables $(p_t, r_t^n, \nu_t, \varepsilon_t^\pi, \varepsilon_t^i)$.

While the likelihood function $L(H^T|\theta)$ could, in principle, be maximized by the standard maximum likelihood methods, in practice it has turned out to be difficult to estimate rational expectations models without setting prior distributions to estimated parameters. Hence, Bayesian maximum likelihood methods are employed. The Bayesian maximum likelihood estimation combines a prior density function $p(\theta)$ with the likelihood function $\mathrm{L}(H^T|\theta)$. This results in a joint probability density function

$$\mathrm{L}(\theta \mid H^T) = \frac{\int p(H^T \mid \theta)p(\theta)d\theta}{p(H)} \tag{5.11}$$

which is maximized over a parameter vector θ, conditional on a set of observables H^T. Inference furthermore requires a computation of posterior distribution. This is achieved by generating draws from the candidate posterior distributions and averaging over these draws in order to obtain posterior moments of interest. We employ Markov–Chain–Monte–Carlo methods and use standard techniques to check that posterior distributions converge to stable distributions.[21] We compute the posterior moments from two Markov–Chains, each amounting to 100,000 draws.

Priors

As discussed, we use four series in the estimation of the model for each country (see the section on data for details – p. 91). Our choice of prior distributions of the key parameters of interest is shown in Table 5.1. In addition, three parameters have been fixed such that $\beta = 0.96$ (discount factor), $\theta = 7.88$ (elasticity of substitution of differentiated goods) and $\omega = 0.33$ (elasticity of real marginal costs with respect to output). A mark-up of roughly 15 per cent is implied by $\theta = 7.88$, while $\beta = 0.96$ implies a steady state real return of financial assets of 4 per cent. Given that we have small prior sample information in use, we have been relatively agnostic in choosing the priors. This particularly applies to the estimation of the interest rate rule parameters, with the hope that the data contain enough information to determine the extent to which the monetary authorities actually committed to price stability.

Table 5.1 Prior densities

Parameter	*Density*	*Mean*	*P*	*Description*
Price setting				
γ	N	0.70	0.25	Degree of price indexation
α	B	0.15	0.08	Calvo parameter
Output gap				
φ	B	3.00	1.00	Inverse of interest rate elasticity of output
η	B	0.60	0.15	Degree of habit persistence
Interest rate rule				
ρ_i	B	0.80	0.100	Interest rate smoothing
ϕ_x	U	1.00	[0,2]	Weight on output target
ϕ_π	B	1.20	0.150	Weight on inflation target
χ	U	0.50	[0,1]	Weight on price level target
Exogenous shock processes				
ρ_r^n	B	0.50	0.150	Persistence-natural rate shock
ρ_π	B	0.50	0.150	Persistence-cost push shock
ρ_v	B	0.50	0.150	Persistence-velocity shock
$\sigma^2_{r^n}$	G^{-1}	0.05	0.030	Variance-natural rate shock
σ^2_π	G^{-1}	0.05	0.030	Variance-cost push shock
σ^2_v	G^{-1}	0.05	0.030	Variance-velocity shock
σ^2_i	G^{-1}	0.005	0.003	Variance-interest rate shock
Money demand				
ξ	B	5.000	1.000	Curvature of money in the utility

Notes: B, G^{-1}, U, N correspond to Beta, Inverse Gamma, Uniform and Normal distributions. Mean corresponds to Mean and P is the standard deviation of the respective prior distribution, except in the case of uniform distribution, where P is the support of the distribution.

As for the standard errors of the shocks processes, once more we have very little prior information. We have chosen the priors such that when the model is simulated at prior, mean standard errors of the endogenous variables are roughly in line with the standard errors of the sample data. This goes somewhat against the Bayesian ideology, as it would be more preferable to exploit the data prior to the estimation sample.[22] Note that we choose the same priors for each country in order to help the comparison between the countries.

Results of the empirical analysis

Interest rate rule

Table 5.2 summarizes the results from the Bayesian maximum likelihood estimation for each country, using the priors as shown in Table 5.1. For convenience, we have re-produced the prior mean for each structural parameter. Our focus in the discussion is on the monetary policy rule parameters.

Table 5.2 Summary of the estimation results

	Prior	Posterior							
		FINLAND		SWEDEN		DENMARK		NORWAY	
Parameter	*Mean*	*Mean*	*90% CI*	*Mean*	*90% CI*	*Mean*	*90% CI*	*Mean*	*90% CI*
Price setting									
γ	0.70	0.55	0.217 0.887	0.36	0.023 0.689	0.46	0.126 0.804	0.33	0.022 0.637
α	0.15	0.31	0.197 0.432	0.29	0.159 0.404	0.24	0.126 0.338	0.23	0.147 0.319
Output gap									
φ	3.00	3.17	1.931 4.402	2.01	1.071 2.844	3.15	1.918 4.481	3.42	2.243 4.817
η	0.60	0.36	0.173 0.539	0.32	0.121 0.492	0.25	0.097 0.397	0.67	0.497 0.859
Interest rate rule									
ρ_i	0.80	0.96	0.946 0.980	0.93	0.904 0.958	0.84	0.787 0.894	0.92	0.886 0.949
ϕ_x	1.00	1.27	0.595 1.999	1.16	0.462 1.999	0.98	0.001 1.736	0.99	0.005 1.785
ϕ_π	1.20	1.14	0.889 1.394	1.14	0.892 1.390	1.19	0.954 1.438	1.17	0.916 1.411
χ	0.50	0.68	0.420 0.952	0.58	0.298 0.842	0.75	0.568 0.937	0.65	0.359 0.925
Exogenous shock processes									
ρ_r^n	0.50	0.65	0.515 0.795	0.56	0.409 0.728	0.50	0.333 0.664	0.65	0.514 0.770
ρ_π	0.50	0.35	0.172 0.522	0.21	0.079 0.343	0.22	0.077 0.347	0.30	0.130 0.460
ρ_v	0.50	0.84	0.770 0.927	0.82	0.726 0.912	0.76	0.651 0.870	0.84	0.758 0.930
σ_r^n	5.00	3.96	2.30 5.57	4.22	2.40 5.92	3.27	2.07 4.47	3.27	2.11 4.34
σ_π	5.00	5.48	3.59 7.23	5.24	3.42 7.18	5.17	3.36 7.08	4.30	2.92 5.58
σ_v	5.00	4.75	3.95 5.58	3.77	3.11 4.42	4.56	3.77 5.34	3.77	3.11 4.44
σ_ϵ^i	0.50	0.43	0.34 0.50	0.53	0.42 0.62	0.84	0.68 0.99	0.84	0.68 1.00
Money demand									
ξ	5.00	4.20	2.02 6.37	4.97	2.78 7.18	4.89	2.63 7.24	5.36	3.075 7.69
LMD		410.1		409.2		425.5		424.4	

Notes: 90% CI corresponds to 90% confidence interval of respective distribution. LMD correspond to log marginal density. Estimation sample is 1871–1913 for each country. Standard errors are expressed in percentages.

Finland

Shocks to interest rate rule (i.e. monetary policy shocks) have a posterior mean standard deviation of 43 basis points. Policy rule's estimates imply relatively muted responses of nominal interest rate to output gap and inflation. Although the estimated Taylor coefficients ϕ_π and ϕ_x are relatively high, there is a strong interest rate smoothing ($\rho_i = 0.96$). The parameter χ (which controls the weight on price level target) is relatively imprecisely estimated. The 90 per cent confidence interval is [0.42, 0.95], with a posterior mean estimate of 0.68.

As also confirmed by the impulse response analysis in the following section, we interpret the evidence as a moderate degree of commitment to price stability. At the same time, there is a high degree of price rigidity in the model ($\alpha = 0.31$), suggesting considerable real impacts of monetary policy. Both output gap and inflation are considerably forward-looking ($\eta = 0.36$, $\gamma = 0.22$), although there is a relatively high degree of uncertainty around the price indexation parameter (the 90 per cent confidence interval for γ is [0.22, 0.89]).

Sweden

Shocks to interest rate rule (i.e. monetary policy shocks) have a posterior mean standard deviation of 53 basis points, slightly higher than in Finland. The estimated Taylor coefficients ϕ_π and ϕ_x are relatively high, yet a strong interest rate smoothing ($\rho_i = 0.93$) implies a muted response to inflation and output. The parameter χ (which controls the weight on price level target) is relatively imprecisely estimated. The 90 per cent confidence interval is [0.30, 0.84], with a posterior mean estimate of 0.58. As also confirmed by the impulse response analysis in the next section, we interpret the evidence as a moderate degree of commitment to price stability. As in the case of Finland, the degree of price rigidity is high in the model ($\alpha = 0.29$), suggesting a considerable real impact of monetary policy. Output gap and inflation are considerably forward-looking ($\eta = 0.32$, $\gamma = 0.36$), yet the price indexation parameter is very imprecisely estimated (the 90 per cent confidence interval for γ is [0.02, 0.69]).

Denmark

Monetary policy shocks have a posterior mean standard deviation of 84 basis points and, in comparison to Sweden and Finland, there is considerably less interest rate smoothing ($\rho_i = 0.84$). The Taylor coefficients of the interest rate rule are somewhat similar to Sweden and Finland yet, once more, there is a considerable degree of uncertainty around these coefficients. The coefficient on output gap is very imprecise

in particular; the 90 per cent confidence interval ranges from 0 to 1.7. The posterior mean estimate of $\gamma = 0.46$ is considerably higher than in Sweden, suggesting a less forward-looking inflation process than in Sweden and Finland. At the same time, prices seem somewhat more flexible than in Sweden and Finland ($\alpha = 0.24$), making the real effects of monetary policy slightly smaller than in the other countries.

Norway

Similarly to Denmark, monetary policy shocks have a posterior mean standard deviation of 84 basis points, while interest rate smoothing is very similar to that of Sweden. The Taylor coefficients of the interest rate rule are again somewhat similar to the other countries, with a considerable degree of uncertainty around the coefficients, especially with regard to the output gap coefficient. The posterior mean estimate of $\chi = 0.65$ is very similar to that of Finland, while the degree of price rigidity is similar to Denmark; the posterior mean estimate of the price rigidity parameter is $\alpha = 0.23$.

In summary, the estimated coefficient of the interest rate rule shows a moderate degree of commitment to keeping prices stable in all the Nordic countries. As for the degree to which the Nordic central banks focused on stabilizing the domestic business cycle, the evidence is more dispersed and ambiguous. But, if anything, the results suggest that the Riksbank and the Bank of Finland put greater weight on stabilizing the domestic business cycle than the central banks in Norway and Denmark.

Bayesian impulse response analysis

In this section, we summarize the analysis of Bayesian impulse responses. The estimation results for the four countries of interest show substantial uncertainty around some of the key parameters of the model but, overall, the differences between Finland, Sweden, Denmark and Norway seem relatively small. This is confirmed by the Bayesian impulse response functions (IRFs) depicted in the Appendix in Figures 5.1–5.8. Despite rather large confidence bands, especially around the interest rate, the common feature is that, in all the countries, the monetary authorities reacted to positive shocks to the natural rate by increasing the nominal rate, as asserted by Wicksell. Although the estimation shows considerable uncertainty around the single parameter estimates in all countries, a positive interest rate reaction is significant. The monetary authorities were leaning against the wind by accommodating fluctuations in aggregate demand, and thus aiming at a more stable economy. The price level response shows that in all countries there is a mean reversion towards

a stable price level, although the convergence is somewhat slow. In response to a positive shock to the natural rate, it takes at least six years for the price level to return to its initial value in all four countries. The money demand shows a noticeably similar dynamic adjustment to the price level. As for the monetary policy shocks, the convergence of price level (and money demand, too) seems even slower, but this also reflects the strong interest rate smoothing, except in Denmark, where the estimation results suggest a weaker interest rate smoothing.

These results are in contrast to the findings of Taylor (1998) for the US and Shizume (2002) for Japan at the time of the classical gold standard. In both countries, monetary policy was not conducted to ease domestic economic fluctuations but to stabilize exchange rates. Interest rates did not react to changes in inflation rates or output gaps in relation to the Taylor rule. Domestic economic stability was not the main target of the monetary authorities, which applied policies in a pro-cyclical manner with respect to inflation rates. Especially in the case of the US, it is doubtful that any monetary policy was conducted due to the non-existence of the Federal Reserve System. At the same time, our results do not contradict the requirement of maintaining the external balance. To the extent that the external balance is counter cyclical, (i.e. a positive output gap is associated with a deterioration of the external balance) a positive reaction of the discount rate to the output gap is consistent with the objective of stabilizing fluctuations in the external balance. The estimation results suggest that the reaction of the interest rate to the output gap was strongest in Sweden and Finland, but clearly less strong in Denmark and Norway.

Conclusion

We have estimated a neo-Wicksellian monetary policy model using Bayesian maximum likelihood methods for the Nordic countries during the period of the classical gold standard. Our findings are consistent with those of Knut Wicksell (1907), who argued that the interest rate policies followed by the central banks and the variations in the natural rate of interest were important in determining the variations in price level (and inflation) during that time. The central banks were leaning against the wind by responding to positive shocks to the natural rate with increased discount rates, as asserted by Wicksell. As a result, the price level response showed a mean reversion to a stable price level. To conclude, there were no large differences among the four countries regarding the conduct and transmission of their monetary policy.

Acknowledgements

The authors would like to thank Masato Shizume and Joachim Voth for valuable comments and suggestions. Participants in the session on Monetary Policy in the Peripheries under the Gold Standard at the XVth World Economic History Congress in Utrecht as well as at the European Economic Historical Society Conference in Geneva are gratefully acknowledged. The views expressed herein are those of the authors and do not necessarily reflect the views of the authors' affiliating institutions.

Appendix

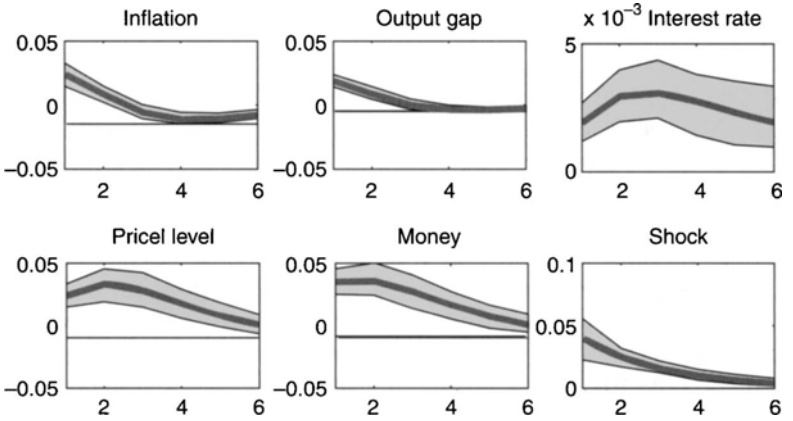

Figure 5.1 Bayesian impulse response functions: Finland – natural rate shock

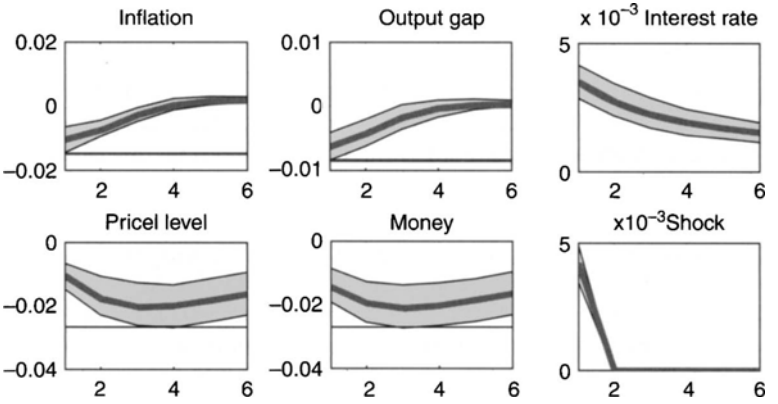

Figure 5.2 Bayesian impulse response functions: Finland – monetary policy shock

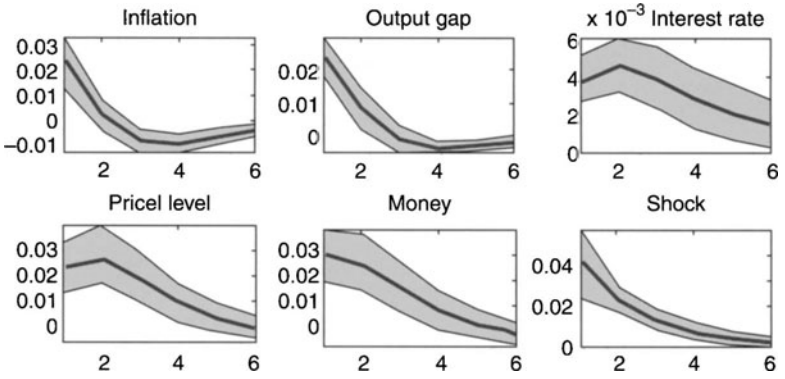

Figure 5.3 Bayesian impulse response functions: Sweden – natural rate shock

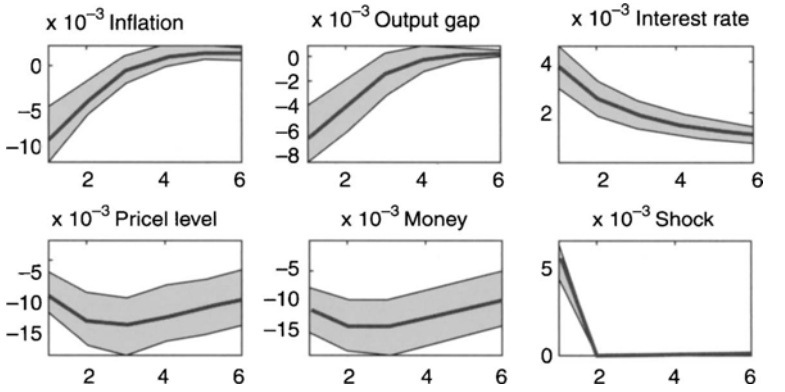

Figure 5.4 Bayesian impulse response functions: Sweden – monetary policy shock

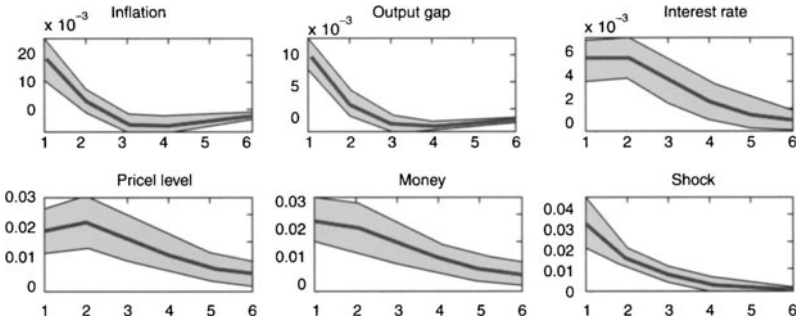

Figure 5.5 Bayesian impulse response functions: Denmark – natural rate shock

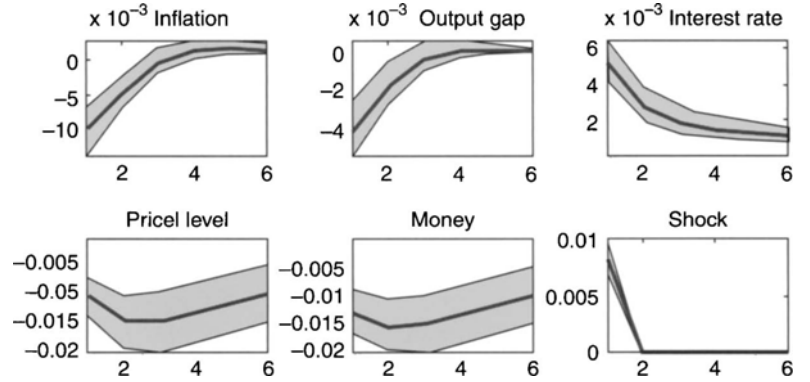

Figure 5.6 Bayesian impulse response functions: Denmark – monetary policy shock

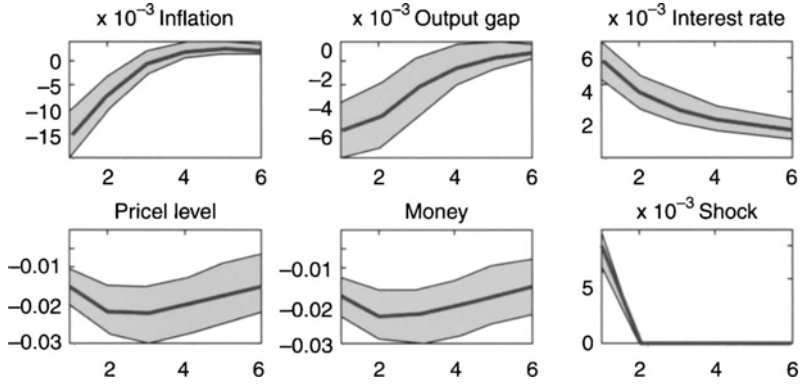

Figure 5.7 Bayesian impulse response functions: Norway – monetary policy shock

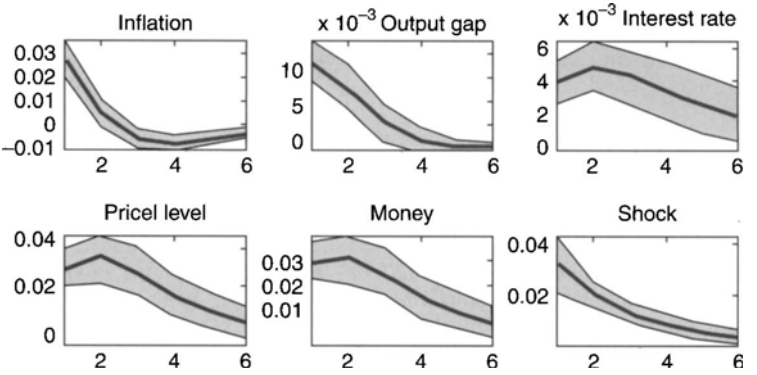

Figure 5.8 Bayesian impulse response functions: Norway – natural rate shock

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Part II
The European Continent

6

Foreign Exchange Reserve Management in the Nineteenth Century: The National Bank of Belgium in the 1850s

Stefano Ugolini

One of the most interesting aspects of the monetary action of peripheral countries during the gold standard era consists of their widespread adoption of foreign exchange policies, which turned the international monetary system into a de facto gold exchange standard by the end of the nineteenth century.[1] As much as the current one, the first wave of globalization was thus accompanied by increasing accumulation of foreign reserves. This striking parallelism is fascinating, and economists might be legitimately tempted to look for insights from the past. There are at least two dimensions along which such an exercise can be performed. One dimension concerns the motives for accumulation and the relative role of reserve currencies in the structure of the international monetary system: for instance, which lessons for the dollar's current position might be drawn from sterling's past performance? These questions, which bear a great deal of relevance from a macroeconomic viewpoint, have already started to be approached by the literature.[2] An alternative dimension concerns the practicalities of the accumulation process: what were reserves made of in the nineteenth century, how were they actually managed at the time, and do the differences between now and then have something to teach us? These questions, which are particularly interesting from a microeconomic viewpoint, have never been addressed up to now: as a matter of fact, very few elements about the practical aspects of foreign exchange policy have emerged so far.[3] Given the relatively low level of disclosure associated with these activities, details remain largely unknown even for the case of today's central banks; concerning the past, most crucial elements are still buried in archives – if not lost forever.

This chapter is the first attempt to look specifically at foreign exchange reserve management practices in the nineteenth century. It is based on

fresh archival research covering a particularly relevant case study: the National Bank of Belgium (i.e. the first central bank to engage massively in foreign exchange policy) during its first years of operation (1851–53). Of course, the aim is not to provide an exhaustive description of nineteenth-century reserve management practices – still an impossible task, given the current state of research. Rather, the idea is to provide a preliminary assessment of the complexity of foreign portfolio management in the past, its differences with today, and the implications of such differences.

The remainder of the chapter is organized as follows. The first section provides the interpretative framework for this study and summarizes recent trends in reserve management practices. The second section introduces the structure of nineteenth-century international payments systems and financial intermediation. The third and fourth sections focus on the Belgian case study, looking at the management of financial and operational risk, respectively. The chapter ends with conclusions.

Foreign exchange reserve management in the twenty-first century

Although a number of different reasons for holding reserves can be found, all of them ensue from the wish to sterilize some current or future capital movement.[4] In order to be able to pursue this aim in a sustainable way, central banks have always oriented their foreign portfolio management towards the reconciliation of two potentially conflicting targets: liquidity (the ability to sell reserves easily at any moment) and profitability (the ability to receive adequate remuneration for the capital allocated to reserves). If one is to study the dynamics of such portfolio choices, it is convenient to adopt the viewpoint of central bankers and look at them as risk management practices. Risk involved in foreign reserve management takes the form of financial and operational risk. On the one hand, the financial risk associated with a given security is defined as composed by credit risk (the risk that the payments linked to the security will be defaulted), market risk (the risk that the value of the security will decrease due to aggregate market factors), and liquidity risk (the risk that the security will not be exchangeable sufficiently quickly to avoid a loss). On the other hand, the operational risk associated with a given transaction is defined as the risk of loss resulting from inadequate or failed internal processes. Throughout the chapter, this useful framework will be adopted in order to compare past and current practices.

Starting from the present, it must be acknowledged that details on present foreign reserve management do not abound. One of the most

useful available sources consists of a 2007 survey conducted by the Bank for International Settlements.[5] Concerning the management of financial risk, the report argues that a new trend has emerged since the 1980s. Before that decade, central banks used to hold reserves in highly liquid and safe assets, such as gold, bank deposits, Treasury bills, and sovereign bonds. Concern about the social cost of dramatically increasing foreign reserves, however, has nurtured a more profit-oriented attitude towards reserve management. This has also been encouraged by the idea that financial innovation had been enhancing the liquidity of riskier securities, thus transforming them into proper instruments for central bank investment. As a result, the list of asset classes included in official portfolios has expanded to include instruments of much longer maturity than before – such as agency paper, mortgage-backed securities, corporate debt and even equities.[6] This expansion has also produced changes in the management of operational risk. While decision about the 'philosophy' of investment has been left to top executives, practical management has progressively been split among a multitude of specialized agents, and sometimes even outsourced to external managers. This horizontal separation has been implemented with the aim of limiting opportunities for conflicts of interest, but also with the aim of shielding monetary authorities from criticism associated with specific choices.[7]

Present foreign reserve management differs from that of the nineteenth-century from the viewpoint of both the instruments involved and the organization of operations. As suggested by the next section, this is tied to crucial dissimilarities in the structure of the international payments system and of international financial intermediation.

Foreign exchange reserve management in the nineteenth century

At a time when most countries adhered to some kind of convertibility rule (gold, silver, or bimetallic standard), central banks were required to maintain their banknotes payable in bullion. In such a framework, it is impossible to qualify gold and silver holdings as 'foreign reserves' properly speaking: as a matter of fact, bullion used to be legal tender and could thus be employed in order to broaden or shrink the domestic monetary base. In what follows, therefore, gold and silver will not be considered as instruments for foreign reserve accumulation.

In the nineteenth century, the term 'foreign exchange' was used as a synonym for the market price of a particular asset class: bills of exchange payable on a foreign place.[8] Bills of exchange (or, as they later came to

be known, acceptances) were negotiable promissory notes with multiple guarantees. Bound to be paid at maturity by one person (the acceptor) who had agreed to certify the quality of the original debtor (the drawer), they were also secured by the signatures of all the people who had previously held and resold them (the endorsers).[9] Due to their particular convenience in bridging the information asymmetries associated with overseas transactions, bills of exchange had become the staple instrument for international payments since the early modern age. Of course, the system was not fully exempt from abuses: for instance, so-called 'cross-firing' (the mutual drawing and accepting of two bills of the same amount by two colluding agents) constituted a typical refinancing device that de facto annihilated the value of the guarantees.[10] Moreover, multiple guarantees could also become a dangerous vehicle of contagion during crises.[11] Yet, despite these downsides, the system had nonetheless proved to be basically resilient to major shocks over the centuries. The primacy of bills as the most liquid asset class available to investors was definitively established in the 1850s, when a considerable expansion and deepening of the markets for these securities took place. This was tied to two interconnected phenomena: the spectacular growth in world trade and finance, and the general introduction of lending-of-last-resort facilities by central banks.[12] As a result, acceptances became unrivalled as the most suitable instrument for the placement of foreign reserves.[13]

Bills of exchange entered almost all kinds of portfolios, being bought (or 'discounted') by specialized money market funds (known as 'discount houses'), by commercial banks, by private investors, and so on. The most active players in the origination of bills, however, were concentrated in a specific segment of the banking sector: private investment banks known as 'merchant banks'. Merchant banks were trading houses that had gradually specialized in finance. Owing to their original business activities, they had established those multinational networks of correspondents that constituted the necessary condition for performing the accepting business on a broad scale.[14] Yet, merchant banks not only originated bills: they also performed a number of services for their customers (e.g. the encashment of coupons or of bills originated by other houses), took deposits, operated on the bullion market, and underwrote bonds and equities. Towards the end of the nineteenth century, the successful model of merchant banking was increasingly imitated by multinational joint-stock banks – some of which (e.g. Paribas: see p. 125) were former merchant houses evolved into universal banks. Seconded by technological improvements (namely, the introduction of telegraphic transfers), these new intermediaries started to offer more competitive forms of deposits

to their customers. Despite their inherently higher riskiness,[15] these new types of claims would eventually outperform bills as the favourite instrument for the placement of foreign reserves – albeit not before the interwar period.[16] Because of the variety of services they offered to their customers, foreign merchant banks were by far the most convenient agents with which nineteenth-century central banks could interact in order to manage reserves. By contrast, relationships with other banks of issue were extremely rare: foreign reserves were almost never kept in the form of deposits with other monetary institutions.[17] Contacts between central banks were generally scanty: some information was exchanged concerning very technical issues (e.g. counterfeiting or bookkeeping practices),[18] but even direct transactions between monetary authorities (e.g. bullion swaps) were performed through the intermediation of merchant banks.[19] As a matter of fact, foreign reserve management remained something to be fully undisclosed to those monetary authorities that would suffer from the pressure of reserve liquidations during crises.

Financial risk in nineteenth-century foreign reserve management: Belgium

Since the very beginning of its operations, the National Bank of Belgium engaged heavily in foreign exchange policy. This depended on the need to reconcile a formal mandate to maintain convertibility with an informal mandate to stabilize domestic interest rates. In order to pursue these conflicting aims, the Bank started to perform open market operations on a massive scale, which resulted in the accumulation of huge foreign reserves.[20]

Both the National Bank's primacy in foreign exchange policy and the breadth of its operations (covering up to six currencies at the time) make the Bank an ideal candidate for a case study on nineteenth-century foreign reserve management practices. To perform a detailed microeconomic analysis, this chapter makes use of a high-frequency database covering the Bank's first three years of operation (January 1851 to December 1853).[21]

Asset class composition

In order to analyze the National Bank's management of financial risk, the first step consists of investigating the asset class composition of the portfolio. Figure 6.1 shows that only two types of instruments were held by the Bank: bills of exchange payable abroad, and deposits with foreign banks. While deposits dominated at the very beginning

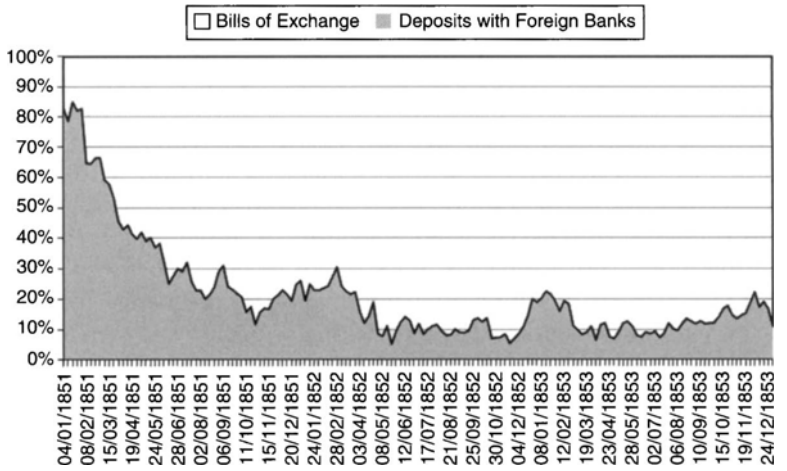

Figure 6.1 Composition of foreign reserves per asset class, 1851–53

(when the Bank's network was in its setting-up phase), their share shrank rapidly: in 1852–53, bills of exchange exceeded 85 per cent of the total portfolio on average. Figure 6.2 gives data in absolute numbers, and provides details on bills and deposits held in each of the six currencies with which the Bank was dealing.[22] It is possible to see that, as a general rule, deposits only constituted a residual part of portfolio management operations: they typically remained close to zero, and tended to increase temporarily in periods when the Bank was diminishing its holdings in that given currency.[23] On the whole, Figure 6.2 testifies the role of the bill of exchange as the staple instrument of the National Bank's foreign reserve management.[24]

Purchasing and selling reserves: strategies

The previous paragraph has looked at the choice between bills and deposits as instruments for placing a given amount of a foreign currency. But which techniques did the National Bank implement in order to modify the size or the currency composition of its foreign portfolio?[25] A variety of choices were available to the Bank in order to buy or sell a given currency, depending on the place on which it wished to operate:

- the Bank could operate on the onshore market of the currency (say, London for sterling). Here, local currency could be exchanged against

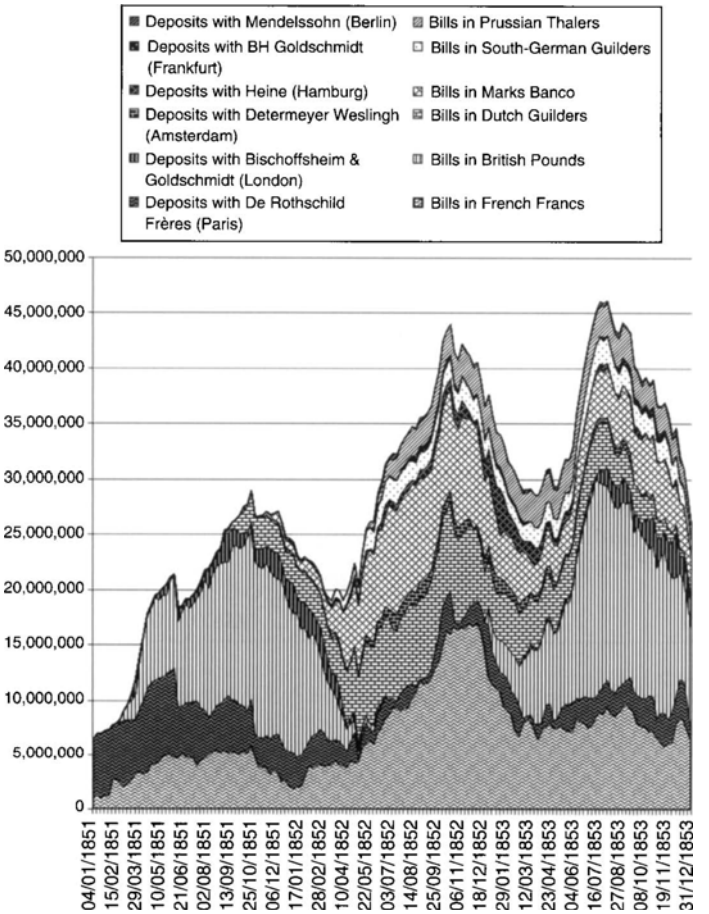

Figure 6.2 Composition of foreign reserves, 1851–53 (Belgian francs)

bullion (1a), against bills in Belgian francs (1b), against bills in third currencies (say, French francs; 1c), or against claims on foreign banks (say, a transfer on a Paris house; 1d).

- the Bank could operate on the offshore market for that currency in Belgium (say, the Antwerp market for sterling). Here, the given foreign currency could be exchanged against Belgian francs at the bourse or at the National Bank counters (2a);[26] alternatively, the conversion

Table 6.1 Total value of operations implying modifications in the foreign portfolio, 1851–53 (Belgian francs, million)

		Purchases of foreign assets	Sales of foreign assets
1. On their onshore market (with foreign banks)	1a: Against bullion	17.4	19.8
	1b: Against bills in Belgian francs	—	10.7
	1c: Against bills in third currencies	3.5	37.9
	1d: Against claims on foreign banks	—	4.2
2. On the offshore market in Belgium (against Belgian francs)	2a: With the general public	82.2	5.3
	2b: With Belgian banks	12.8	38.4
	2c: With the Treasury	—	14.1
3. On third offshore markets (with foreign banks)	3a: Against bills in third currencies	37.9	3.5
	3b: Against claims on foreign banks	4.2	—
TOTAL		***158.0***	***133.9***

Note: Grey-shaded areas indicate a modification only in the composition of the foreign portfolio; the remaining areas indicate a modification in the size and the composition of the foreign portfolio.

could be implemented through direct transactions with Belgian banks (2b) or the Treasury (2c).

- the Bank could operate on a third offshore market for that currency (say, the Paris market for sterling). Here, the given currency (sterling) could be exchanged against local currency (French francs) either in the form of bills (3a) or in the form of claims on local banks (3b).

Of course, not all operations had the same effects on reserves: operations involving bullion or Belgian francs (1a, 1b, 2a, 2b, 2c) implied a change in the composition *and* size of the portfolio, while swaps of foreign currencies (1c, 1d, 3a, 3b) entailed a change in composition only. Table 6.1 gives the total amounts transacted for each class of operations in 1851–53.[27] The data show that increasing and decreasing reserves were not symmetric operations. When the National Bank wished to acquire foreign assets, it most often resorted to the Belgian offshore market (52 per cent of total purchases for operation 2a, 8 per cent for 2c) or to other

offshore markets (38 per cent for 3a). Somewhat surprisingly, the Bank seldom purchased new currencies on their own onshore market – and when it did so, it mainly employed bullion (11 per cent for 1a). The picture was quite different in the event that the National Bank wished to sell foreign assets. The Belgian offshore market still played an important role, but different agents were most often involved (mainly domestic banks: 29 per cent of total sales for operation 2b, and the Treasury: 10 per cent for 2c),[28] while the general public was seldom concerned (only 4 per cent for 2a). The onshore market of the given currency was now the main playground of operation (28 per cent for 1c, 15 per cent for 1a, and 8 per cent for 1b), while third offshore markets were almost neglected (only 2 per cent for 3a).

The National Bank's asymmetric behaviour in the reshuffling of its foreign portfolio provides insights on both market structure and policy aims. First, it suggests that, on mid-nineteenth-century offshore foreign exchange markets, transaction costs (mainly connected with the bills' encashment procedures) were spread unevenly along the maturity curve. As the Bank purchased securities of longer maturity than those it sold, it was apparently cheaper for the Bank to operate in offshore markets when it bought long bills than when it sold short ones. Second, it conveys the idea that offshore markets for the Belgian franc outside Belgium (on which the Bank almost never operated) were far less liquid than offshore markets for other currencies in Belgium. This can be interpreted as evidence of the junior status of the franc with respect to the main international currencies in the early 1850s.[29] Third, it points to the fact that bank transfers (which the National Bank seldom used) were still fairly impractical means of payments with respect to exchange-traded bills. Finally, it confirms that the bulk of the Bank's operations were not dictated by monetary policy aims: the most systemically important kind of transaction, i.e. the purchase of bullion abroad (1a), barely represented 15 per cent of total reserve dismissals.[30]

Credit risk

The previous paragraph has illustrated the techniques available to the National Bank for the modification of the composition of its foreign portfolio. But what about the motives for diversification? The currency composition of the Bank's reserves was very volatile because it was almost exclusively driven by profitability concerns.[31] This suggests that financial risk was dealt with rather easily by the Bank. The previous section argued that liquidity risk associated with bills of exchange was kept low by their role as staple international means of payment, and that credit

risk was moderated by the multiple-guarantee system. Still, how did such system work in practice?

While the amounts of foreign bills to be purchased were set by the Administration Board, the screening of the securities entering the National Bank's portfolio had to be made by the bodies forming the Bank's own network. In the event that the foreign bill was discounted at one of the National Bank's counters in Belgium, the security was always endorsed by one of the Bank's usual customers and thus bore his guarantee. As a result, the risk on these bills was governed by the same rules concerning the purchase of domestic bills.[32] However, in the event that the foreign bill was discounted abroad by a correspondent, the problem was different: the Bank had to delegate the screening of 'signatures' to external agents located abroad. To solve this problem, all correspondents were asked to endorse the bills they remitted to Brussels – i.e. to guarantee the Bank against possible defaults by the acceptors of the bills.[33] As a result, credit risk associated with foreign bills was almost non-existent, except in the event of a default by a correspondent. As the latter case would more properly fall under the heading of operational risk, it will be dealt with in the next section.

Market risk and the international monetary system

According to discussion so far, only market risk was a real matter of concern within the Bank's foreign reserve management. Because of the self-liquidating nature of bills (which were automatically turned into cash at maturity), market risk mainly resulted from exchange rate volatility (i.e. currency risk).[34]

The six foreign currencies in which the National Bank used to operate were all convertible into bullion: most of them, such as the Belgian franc, into silver – except for the British pound (which was convertible into gold) and the French franc (into silver or gold). Conversely, the Bank never considered that investing in inconvertible currencies was a viable option:[35] as a result, currency risk was determined by the credibility of convertibility commitments and the stability of the international monetary system. Because the latter proved remarkable in the 1850s notwithstanding a number of exogenous shocks,[36] the Bank had the chance to undertake aggressive modification of its portfolio composition without exposing itself to any appreciable financial risk.

Some considerations regarding the coeval international monetary system are in order here. To be able to diversify its reserves, the Bank established a network of corresponding banks in the main financial centres

of each currency area. Because it was the correspondents' task to take care of the encashment of maturing bills, from the Bank's viewpoint foreign securities were always payable in one of these six centres – where correspondents would turn them into cash. Yet, this does not mean that all the bills in the National Bank's portfolio were accepted by merchant banks established in these six cities: provided that they were denominated in the desired currency, bills could well be payable elsewhere. The fact that the National Bank systematically kept records of where its bills were payable (Indicateur de la correspondance du Gouverneur [Index of the Governor's correspondence] – IC 1851–53) allows reconstruction of the monetary geography of the 1850s – a period in which the making of 'territorial money' was still an ongoing process.[37] This is presented in Figure 6.3, where the names of the financial centres quoted by National Bank sources are reported. Three interesting features emerge from the picture. First, the Latin Monetary Union existed long before the 1865 Convention officially established it: despite the fact that the uniformity of specie circulation within the franc area was disintegrating in the early 1850s,[38] Paris apparently remained the main money market for the whole region.[39] Second, albeit the amount of thaler-denominated bills bought by the National Bank was small (see Figure 6.2), their geographical origin was remarkably diversified. This suggests that Berlin was still a relatively underdeveloped money market in the 1850s, and that its later primacy over other German centres was a consequence of the Unification.[40] Third, notwithstanding the fact that the mark banco was the official unit of account of the Free City of Hamburg only, mark-denominated bills were accepted by merchant banks located in other countries, too (i.e. in Altona, Copenhagen and Christiania). This suggests that at least the export-oriented portion of the Scandinavian banking systems was keeping its books in foreign rather than local currency – a phenomenon analogous to present-day dollarization.[41]

Profitability

The previous paragraph has argued that financial risk associated with foreign bills only depended on market (read 'currency') risk, which was rather low in the 1850s despite the turbulent character of that decade.[42] The way for testing this claim consists of looking at ex post profitability. It is a particularly unfortunate circumstance that, by systematically merging domestic and foreign assets, the National Bank's books do not allow for a precise assessment of the profitability of foreign reserves. Nonetheless, the annual reports to shareholders published by the Bank (Rapports du

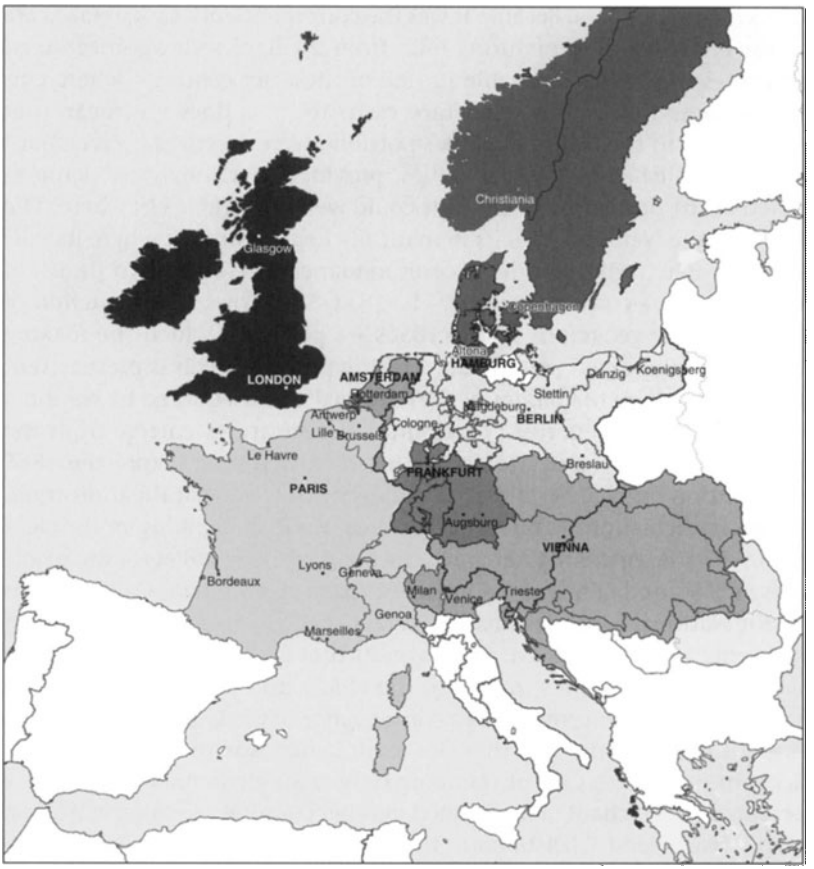

Figure 6.3 Monetary geography in the 1850s, as emerging from the National Bank of Belgium's bill portfolio management
Note: Seven main currency areas are highlighted: (1) Franc – main financial centre: Paris; (2) Sterling – London; (3) Dutch Guilder – Amsterdam; (4) Mark Banco – Hamburg; (5) South-German Guilder – Frankfurt; (6) Thaler – Berlin; (7) Austrian Guilder – Vienna.
Sources: IC (1851–53); Lemale (1875).

Gouverneur à l'Assemblée Générale des actionnaires – RAG) contain a number of interesting elements, which are used in this paragraph in order to draw some conclusions.

The National Bank was a profitable joint-stock company: the yearly return to capital for shareholders was equal to 7.25 per cent in 1851, 13.40 per cent in 1852 and 13.32 per cent in 1853. Discount activities contributed substantially to profit generation (57.23 per cent of total profits

Table 6.2 Gross profit of all discount activities (domestic and foreign) and loss on rediscount and exchange, 1851–53 (Belgian francs, 1000)

	1851	1852	1853
Gross profit of discount activities	823.6	1,496.2	1,269.9
Loss on rediscount and exchange	136.0	113.3	178.1
NET	***687.6***	***1,382.8***	***1,091.8***

Source: RAG (1851–53).

generated in 1851, 52.67 per cent in 1852 and 64.45 per cent in 1853).[43] On the one hand, some elements of credit risk for discount activities are given by the value of unpaid bills, which always equalled zero in 1851–53. On the other hand, some elements of market risk for discount activities are given by the losses made on rediscounting and exchange (see Table 6.2).[44] As the National Bank never resold on the open market the domestic bills it had previously discounted, the numbers only refer to foreign bills. It is possible to see that market risk had an effect in two turbulent years (1851 and 1853), yet a much lesser effect in a quiet year (1852).[45] This depends on the fact that, in times of disturbances, the Bank could find itself bound to liquidate reserves regardless of eventual losses.

Still, what was the actual contribution of foreign reserves to profit generation? On average, in 1851–53 the National Bank's foreign bill portfolio was only slightly larger than the domestic bill portfolio.[46] But were foreign exchange operations as profitable as domestic ones? RAG only provides some elements for the year 1853. Figure 6.4 shows that the gross product of discount for foreign bills was predominant during most of that year. For the same period, Figure 6.5 compares the average gross profitability of discount operations on a currency basis.[47] On the whole, foreign operations were generally (but not always) slightly more profitable than domestic ones. This confirms the impression that low financial risk was associated with these monetary instruments.

Financial risk management: summary

The structure of financial risk associated with foreign bills of exchange was considerably different than that associated with domestic bills. Liquidity risk was basically non-existent for foreign bills (which could be easily sold in the open market, backed by the rediscounting facilities of a foreign central bank), while it was a real concern for domestic bills (which could not be resold by the domestic central bank itself). Credit risk was also somewhat low for foreign bills (at least, as long as the

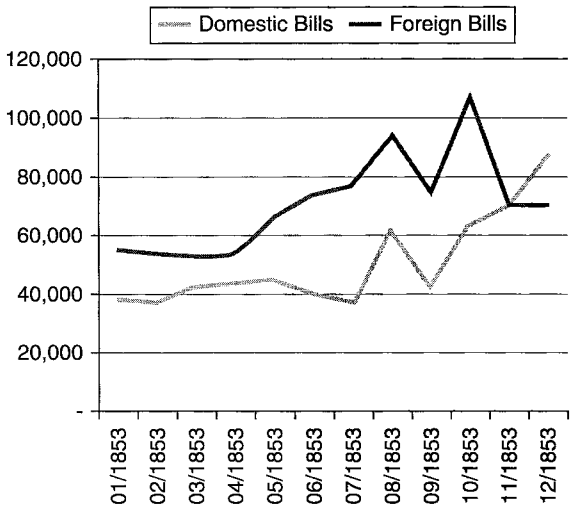

Figure 6.4 Monthly gross product of discounting, 1853 (Belgian francs)
Source: RAG (1853).

guarantee supplied by correspondents was effective), while it was much higher for domestic bills (as shown by the losses the Bank would suffer from domestic defaults some years later).[48] On the contrary, market risk was non-existent for domestic bills, while it was non-zero for foreign ones. Mainly originating from exchange rate volatility, this risk nevertheless had no appreciable effect in a stable international fixed exchange rate regime. On the whole, it is possible to conclude that the nature of the nineteenth-century international monetary system and of the credit instruments associated with it allowed for the maintenance of a remarkably low level of financial risk in foreign reserve management.

Operational risk in nineteenth-century foreign reserve management: Belgium

The fact that the National Bank did not suffer losses from insider practices on foreign reserves does not mean that the Bank was not actually exposed to operational risk during the period under study. The structure of decision-making related to foreign reserves assigned to the Administration Board the power to decide *how many* bills would be discounted by each member of the Bank's network, and to the correspondents the power to decide *which* bills would be discounted. As mentioned, credit risk on

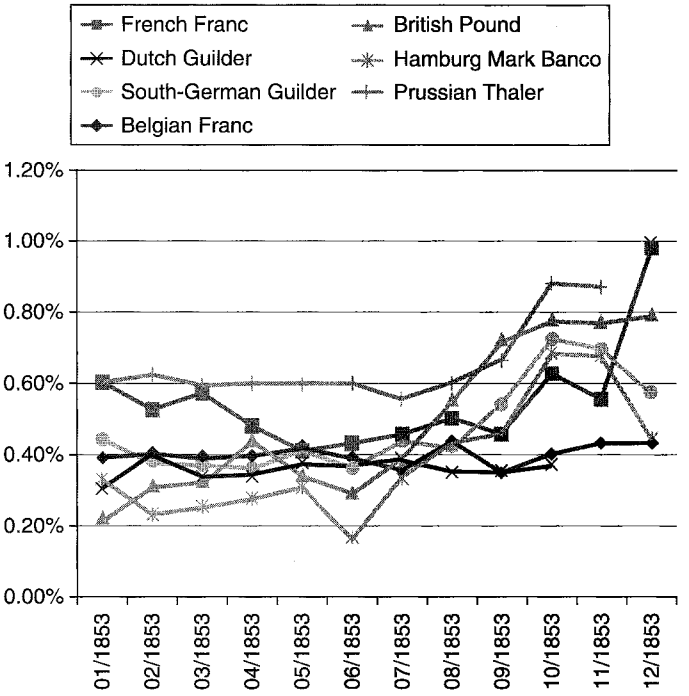

Figure 6.5 Monthly ratio of gross profits from discount to total volumes discounted per currency, 1853
Source: RAG (1853).

foreign bills was non-existent only as long as the guarantee supplied by correspondents was not in question. This means that the National Bank was exposed to moral hazard with respect to its network. As a matter of fact, a correspondent that behaved inappropriately might have taken advantage of its role as delegated screener for selling the Bank low-quality assets at the price of first-order assets. Worse than that, the correspondent was in a position to make the Bank discount speculative-grade bills originated by himself (by 'cross-firing' with colluding agents): in other words, instead of acting as a mere intermediary, the correspondent had the opportunity to use the National Bank in order to refinance himself at a cheaper rate than the market rate.[49] In view of this, an accurate selection of the members of the network proved to be the keystone of the Bank's risk management. This choice was entirely delegated to the Administration Board: collusion between the Board and correspondents, therefore, would be conducive to agency problems. As a result,

the way for assessing the Bank's exposure to operational risk consists of reviewing the selection procedure of external agents. In the event that the procedure were implemented in an unbiased way, one would expect the National Bank to look for the intermediaries bearing the best reputation in each foreign location – namely, those for which the opportunity cost of poor behaviour (i.e. loss of reputation) was the highest. Was this actually always the case?

Structure of the network

As mentioned, the National Bank needed to implement transactions in six European financial centres: in order to do this, a regular correspondent was chosen in each of these places. Regular correspondents were those with which the Bank also kept deposits. However, the National Bank often undertook occasional operations, in the same locations where it had regular correspondents, through other agents. This means that regular correspondents did not hold a monopoly of financial intermediation (on the Bank's account) in their own business area: the National Bank could resort to competitors in order to be granted better conditions. No deposits were kept with these occasional correspondents: as no continuity existed, operations were financed individually. For the reasons given (pp. 110–11), all foreign correspondents were chosen from merchant banks.

Table 6.3 gives the total amount of bills (including renewals) discounted by each component of the National Bank's network in 1851–53. While discounting of foreign bills in Belgium constituted the most popular way for accumulating new reserves (see Table 6.1), renewals of maturing bills abroad drove most of the volume of all discounting activities. The bulk of the business was conducted by regular correspondents, but occasional operations also played an important role. As correspondents were remunerated only on the basis of fees on discounting (encashment of maturing bills was undertaken free of charge), a larger volume of discounts meant higher remuneration for the corresponding agent. While in some locations the Bank resorted to one single agent, in certain others business was split between competing houses – especially in the case of Paris, where the regular correspondent (De Rothschild Frères) only covered 70 per cent of total operations.

Selection of correspondents: facts

Table 6.3 allows the performance of the test proposed at the beginning of this section. Together with long-established, first-order merchant banks (such as the Rothschild, Fould, Determeyer, Heine or Mendelssohn

Table 6.3 Total purchases of foreign bills per correspondent, 1851–53 (Belgian francs, million)

Antwerp	34.7
Brussels and Provinces	47.5
Total National Bank of Belgium Counters	*82.2*
De Rothschild Frères (Paris)	78.3
Bischoffsheim & Goldschmidt (London)	96.5
Determeyer Weslingh en Zoon (Amsterdam)	38.3
Salomon Heine (Hamburg)	48.7
Benedikt Hayum Goldschmidt (Frankfurt)	15.1
Mendelssohn-Bartholdy und Kompagnie (Berlin)	25.1
Total regular correspondents	*302.0*
Bischoffsheim, Goldschmidt et Cie (Paris)	14.6
Fould et Fould-Oppenheim (Paris)	17.6
Noël, Page et Cie (Paris)	0.7
Nathan Mayer Rothschild & Sons (London)	9.0
Ludwig Raphael Bischoffsheim (Amsterdam)	1.9
Mayer Amschel von Rothschild und Söhne (Frankfurt)	1.8
Total occasional correspondents	*45.6*
TOTAL	**429.8**

houses), the list of the Bank's correspondents also included a number of agents of lesser repute – most notably the London, Paris, Amsterdam, and Frankfurt branches of the Bischoffsheim–Goldschmidt group. Except perhaps for the Frankfurt branch, the Bischoffsheim houses were recently established, relatively small and had a rather bad reputation.[50] Given that these agents were much more exposed to the temptation of poor professional conduct, why did the National Bank put itself in a potentially dangerous position?

The members of the body in charge of the selection of correspondents (the directors) had mostly been chosen from the former administrators of Banque de Belgique, a joint-stock commercial bank that held 60 per cent of the National Bank's capital. All directors were local businessmen with a strictly domestic orientation, except one: the merchant banker Jonathan-Raphaël Bischoffsheim, head of the Brussels branch of the Bischoffsheim–Goldschmidt group.[51] The minutes of the Board show that the choice of the Bank's correspondents produced tensions between the merchant banker (who tried to favour his own group) and the representatives of minority stakeholders (who pushed for the leading merchant banks of the time, and especially for the house of Rothschild).[52]

Because of its small size and poor reputation, the Bischoffsheim group was inadequate to supply the Bank with the whole range of services it needed. This was particularly clear in the case of Paris. In the event of crises, the National Bank needed to import vast amounts of silver coins quickly from France in order to maintain convertibility.[53] In view of the crucial function it played, the Bank's correspondent in Paris had to be able to guarantee the immediate conversion of reserves into species. No bank could credibly commit to insure this large-scale supply except the house of Rothschild, the leading operator on international bullion markets – as well as the monopolistic supplier of this kind of services to central banks.[54] This explains why De Rothschild Frères was the only correspondent with which the National Bank had large (and exceptionally, remunerated) deposits. As a result, competition with the Rothschild group in this field was clearly out of question for the Bischoffsheims.

What the Bischoffsheims could (and did) do, instead, was to 'dump' their competitors – i.e. offer slightly better prices for the purchase of foreign bills. This was easy, as the bankers operated in a different segment of the bill market than their competitors. As a matter of fact, bills were not uniform instruments: as the quality of each asset was determined by the signatures impressed on them (acceptor and endorsers), plenty of different discount rates (corresponding to each quality class) were in force at any moment on the bill market.[55] Not being considered as first-order securities, bills bearing the Bischoffsheims' signature were discounted on the market at higher rates than those bearing the guarantee of more reputable houses. Under normal conditions, the National Bank would have abstained from purchasing second-order securities; but the presence of a family member on the Board did matter. Thanks to Jonathan-Raphaël's lobbying, the Bank was induced to consider the quality of Bischoffsheim-guaranteed bills as high as (say) those guaranteed by Rothschild. Given this, it was easy for the Bischoffsheims to discount on behalf of the Bank at a higher rate than that offered by the Rothschilds without reducing their profit margins, because the rate proposed to the National Bank was still lower than the rate at which the very same bills were discounted on the market. But not only were the Bischoffsheims able to make extra profits on intermediation; they also were in the position to refinance themselves at particularly advantageous conditions. By directly originating bills then resold to the National Bank at a higher price than the market price, the group was given the opportunity of becoming considerably more leveraged at relatively low cost.

Thanks to their access to insider information, the Bischoffsheim houses regularly approached the Board to offer more advantageous conditions

Table 6.4 Total purchases of foreign bills per group of correspondents, 1851–53 (Belgian francs, million)

National Bank of Belgium counters	82.2
Rothschild group	89.1
Bischoffsheim-Goldschmidt group	128.1
Other foreign correspondents	130.4
TOTAL	**429.8**

than their competitors. In this way, they managed to secure a good portion of the Bank's business in Paris – and this, despite the fact that the Rothschilds had explicitly asked to be granted the monopoly of operation on that place.[56] As shown by Table 6.4, the Bischoffsheim group finally managed to appropriate a large slice of the Bank's foreign business in 1851–53. The main contribution to this success came from Jonathan-Raphaël's ability to secure for his family the role of regular correspondents for the sterling area. Managing the National Bank's large business, the newly-established Bischoffsheim–Goldschmidt house abruptly became an important player on the London discount market. This is illustrated by Figure 6.6, where the volumes discounted on behalf of the National Bank are compared with those discounted by the most important player of all (the Bank of England). By rapidly acquiring market power in the core financial centre of the time, and by acquiring the possibility of refinancing on a vast scale at cheaper rates than those offered on the market, the group set the foundations for its emergence as a leading international actor – which would eventually occur under the unified label of Paribas, the joint-stock bank merging the Bischoffsheims' concerns in the 1870s.[57]

Operational risk management: summary

The National Bank's foreign reserve management practices opened up the scope for patent conflicts of interests to occur: the personal links between insiders and correspondents exposed the Bank to agency problems. Although the overall success of the Bischoffsheim group (thereafter Paribas) gradually increased the opportunity cost (and, hence, decreased the probability) of unprofessional conduct, the National Bank would have certainly suffered significant losses in the event that the Bischoffsheims' screening practices and guarantees had proven to be dubious. But there is more: echoing coeval criticism (see, e.g., RAG 1856), one may wonder if the incentive structure embedded in such conflicts of interests was not pushing the Bank towards an excessive foreign discount activity.

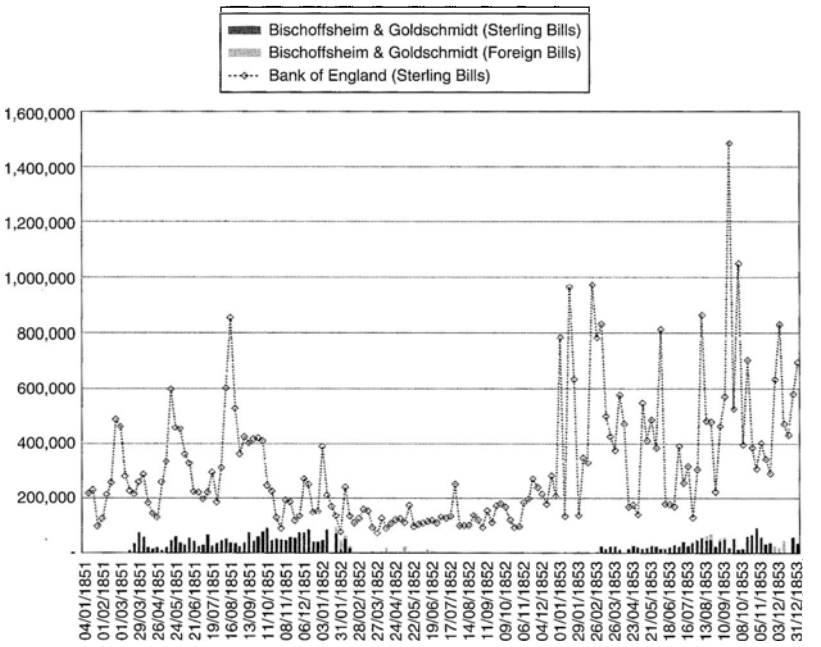

Figure 6.6 Weekly amounts discounted by Bischoffsheim & Goldschmidt on behalf of the National Bank of Belgium on the London market, compared with the amounts discounted by the Bank of England, 1851–53 (British pounds)
Source: Bank of England C28/11-3.

The question may be reformulated as follows: was the level of excess bullion reserves targeted by the Board fully appropriate, or was it set too low due to a bias towards accumulating foreign reserves?[58] Although the issue is impossible to settle, the question is nonetheless legitimate. As most nineteenth-century central banks had international merchant bankers sitting on their boards, the agency problem highlighted by the National Bank's foreign reserve management practices cannot have been an isolated case. The need to by-pass the dependence from merchant bankers' informational networks might have encouraged the development of in-house expertise on foreign exchange markets towards the end of the century.[59]

Conclusion

Through a case study on 1850s Belgium, this chapter has looked at nineteenth-century foreign exchange reserve management from the perspective of current issues. Two main findings have emerged.

On one hand, financial risk associated with reserves was particularly low in the past due to a number of circumstances. At a time in which deposits were somewhat impractical and bonds still fairly illiquid, bills of exchange proved to be the ideal instrument to combine liquidity and profitability targets. Basically, no liquidity risk was associated with these securities, while credit risk was limited by the mutual guarantee system. As a result, only a small level of market risk remained, mostly tied to exchange rate fluctuations – in turn, limited by the operation of credible fixed exchange rate regimes.

On the other hand, operational risk associated with reserve management was potentially high: the structure of decision-making allowed for the presence of patent conflicts of interests, which exposed central banks to agency problems. This structure also engendered perverse incentives to increase foreign exchange activities because of the profit-seeking attitude of insiders colluding with correspondents.

These findings highlight the major differences existing between then and now: nowadays, operational risk is limited by sophisticated reporting techniques, while financial risk is kept much higher by the current architecture of the international monetary system. An assessment of the pros and cons of each system is far from straightforward. As far as we know, the apparent underestimation of operational risk by nineteenth-century central bankers does not seem to have generated major losses. On the contrary, the recent crisis seems to show that present financial architecture has made all kinds of financial risks associated with reserve management (market, credit, and liquidity risk) conducive to potentially large losses for central banks. This calls for further reflection on the way in which foreign exchange reserve management should or should not evolve in the future.

Acknowledgements

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7

Belgian Monetary Policy under the Gold Standard during the Interwar Period

Herman Van der Wee

The story of the re-introduction of the Gold Standard in Belgium after World War I is a very complicated one, characterized by several successive failures and successes. In order to understand the story fully, it has to be analyzed not only within the framework of the internal political situation in Belgium during the interwar period, but also by taking into account Belgium's economic position as a periphery of the main players in the field of monetary policy, the US, the UK, France and Germany.

My chapter will be divided into three sections. In the first section, I will analyze the utopian idea of the Belgian government restoring the gold standard and re-introducing the prewar gold parity of the franc. I will also investigate the government's delusions in this respect, and the consequential adjustments to a more realistic policy, covering the period 1918–1925. In the second section, I will study in greater depth the successful stabilization of the Belgian franc in 1926, accompanied by the introduction of the gold exchange standard and by the reform of the National Bank of Belgium, covering the period 1925–1931. In the third section, I will examine Belgium's transition – at the time of the sterling crisis in September 1931 – from a gold exchange standard to a gold bullion standard, a monetary system Belgium maintained until the German invasion in May 1940.

The first Belgian attempts to restore the gold standard

Belgium was occupied by Germany during World War I, except for a small piece of territory in the north-western corner of the country. In this corner, the Belgian army continued to fight, supported by the French and British armies, joined at a later stage by the American army in France. Belgium and its allies won the War, but at a very high price – not only

as far as human casualties and physical destruction were concerned, but also economically. At the time of the armistice, Belgium's economy and its monetary and financial system were in a shambles.

The government had already abolished the gold standard and suspended the convertibility of the Belgian franc at the outbreak of the war, thereby opening the door to monetary instability. During the occupation, the Germans had dismantled the industry: due to this, and also because of the scarcity of raw materials, industrial production collapsed during the war. At the same time, the situation regarding public finances became dramatic: fiscal income had dropped significantly, while expenditure was continually increasing, in particular because of the heavy German war levies. The National Bank had financed the widening budget gap by advancing paper money to the Belgian administration. Moreover, German marks, which had been declared legal tender in Belgium by the German authorities, had flooded the market to pay for all kinds of purchases by the German army. The result of all this was a sixfold increase in the money supply, which fuelled inflation.

After the armistice, the monetary situation did not become normal again; on the contrary, the situation continued to worsen. The Belgian government decided that Belgian holders of marks could exchange them immediately for Belgian banknotes at the now overvalued war rate of the mark, the government asking the National Bank to finance the operation and transferring the marks to the Bank as collateral for the many interest-free loans the Bank had made to the administration during the war. There was more. The reconstruction of the country and the re-equipment of industry were dependent upon subsidies from the government, who, once again, asked the National Bank to finance the related extra government expenditure, increasing the Bank claims even further. The government hoped to redress the crisis situation of public finances by introducing basic fiscal reform and by receiving a large amount of war reparations from Germany. The reparations not only had to be considered as compensation for the serious human and physical war damages Belgium had suffered during the war, but also as repayment in gold for the huge value in marks the government had exchanged in Belgian banknotes immediately after the armistice.

The government's hopes were not fulfilled. The German government proved unable to pay out the war reparations and soon suspended the payments. The occupation of the Ruhr in 1923 by France and Belgium, aimed at receiving, as a substitute, the payment of the reparations in kind, was a complete failure, increasing the distrust concerning the capacity of France and Belgium to redress their public finances. The fiscal reform,

in view of increasing the government's income by raising indirect taxation and by introducing a system of direct taxation, did nothing to improve the crisis. On the contrary, its failure in the short run worsened matters still further: The reform, indeed, took a long time to implement; in the short run, it generated more chaos rather than higher income. In 1920, the budget deficit had soared to almost 20 per cent of gross national product (GNP). In that situation, there was nothing to stop wartime inflation from entering the peacetime economy at an alarming pace. The effect upon the exchange market was disastrous. The value of the Belgian franc started losing progressively more ground against the pound sterling and the dollar.

The National Bank became very worried about the unfavourable monetary and public-financial evolution of the country and its negative impact upon the international exchange markets. At the time of the armistice, the Bank had been convinced that at the return of the peace the Belgian economy would soon return to its prewar level, which would imply an easy elimination of the war inflation, a quick return to the gold standard and a simultaneous restoration of the convertibility of the Belgian franc at its prewar gold parity. When the Bank realized that the Belgian economy and public finances were moving in the wrong direction, it urged the government to balance the budget and to introduce at the same time a drastic deflationary policy. The government refused to implement such a policy, because it was dominated by representatives of the financial world (in particular the leaders of the mixed banks, who controlled large segments of the Belgian industry). The bankers were afraid that a deflationary policy and a return to the prewar gold parity of the Belgian franc would hurt exports and the profits of the many enterprises they controlled. They also feared the deflation would generate unemployment and social unrest.

The Bank tried to convince the government with theoretical arguments. It asked its research department, which had been set up recently at the initiative of Director Albert Eduard Janssen and was headed by Paul Van Zeeland, to work out a scientifically based monetary reform plan. Van Zeeland was a young economist who just had returned from the US with a PhD in Economics at the University of Princeton and considered himself a neo-classicist. He produced a plan along the lines of the Bank's wishes, but emphasizing at the same time that the return to the gold standard at the prewar gold parity of the franc should not imply a deflationary policy as severe as had originally been thought, because the purchasing power of gold itself had roughly halved. The government, however, remained sceptical: in the first place, for the reasons

already given, in the second place, arguing that the monetary experts at the Genoa Conference of April–May 1922 had openly cast doubt on the feasibility of a return to the prewar gold parity for countries with a severely depreciated currency, such as Belgium.

In the mid-1920s, the international monetary climate was changing quickly. The Dawes Plan (1924) laid the foundations for a successful monetary reform in Germany, stopping its hyperinflation and elaborating a scheme for resuming the war reparations with a more realistic schedule. Crucial also was the decision of the British government in 1925 to restore the gold standard and to peg the pound sterling to gold at its prewar parity. Many countries followed suit, but adopting another of the final resolutions of the Genoa Conference, whereby the gold standard of the prewar period was replaced by a gold exchange standard. Because of the expected revival of the world economy and the relative scarcity of gold, only the central banks of the major economic powers should keep gold reserves, the other countries transferring their gold to these central banks in exchange for convertible reserve currencies – mainly sterling, dollars and (to a much lesser extent) francs.

In this general climate of monetary stabilization and return to the gold standard, Belgium could not remain on the sidelines. Therefore, during the campaign leading up to the election of October 1925 monetary stabilization became a dominant issue, the government of the previous years being criticized for its inability to curb inflation and to stop the weakening of the Belgian franc on the international exchange markets. In the new government, Christian Democrats and Socialists, who had been advocating a stable currency in order to preserve the purchasing power of wages and salaries, were given the key posts. A.E. Janssen became Minister of Finance. He resigned as Director of the National Bank, but it could be expected that he would launch monetary reform along the lines of the plan proposed by the Bank. He did so, although making some concessions to the mixed banks.

Janssen wanted a quick return to the gold exchange standard, but he definitively gave up the Bank's original idea of a return to the prewar gold parity of the Belgian franc. He accepted the need to take the war and postwar depreciation of the Belgian currency into account, but he did not accept the depreciation entirely. Indeed, he wanted to stabilize the franc at an exchange rate that would make it a strong currency: the rate, which stood at Francs 25 to the pound sterling before the war, should be stabilized at Francs 100, and not at the more realistic rate of Francs 125, as suggested by the business world. Before bringing the reform before Parliament, however, Janssen made a small concession to the business

world, proposing a target parity of Francs 106, but with the secret intention of revaluing the franc after a while at the rate of Francs 100. In order to show to the outside world that the government would stick to its decision, Janssen was able to convince the Bank that during the discussion in Parliament the Bank would intervene in the exchange market in view of keeping the exchange rate at maximum of Francs 107.

Janssen also tackled the problem of public finances: he proposed to increase taxes and to cut expenditures in order to reduce the government's budget deficit. He also introduced some deflationary measures, but he left the problem of the enormous short-term debt of the state untouched. He was convinced that the stabilization of the Belgian franc, once realized, would increase general confidence to such an extent that it would become easy at that point to consolidate the state's short-term debt into a long-term public debt. This strategy proved to be a major mistake. During and after the war, the government had not only borrowed money on a large scale from the National Bank, it had also issued huge amounts of three- and six-months Treasury bills, which had been taken up and regularly accepted for renewal by the private banks and by the public. When Janssen submitted his reform plan to Parliament, the holders of these bills gradually changed their mind about accepting renewals. They became increasingly doubtful about the success of Janssen's reform. Moreover, the leaders of the powerful mixed banks (who also kept a large portion of these bills in their portfolio) had, as we have seen, been hostile from the beginning to the fixing of the target rate of Francs 106, and not less, to the deflationary policy. They also resented the fact that Janssen had not consulted them when finalizing his plan. They now also threatened not to renew the Treasury bills at maturity, which would make the state de facto insolvent.

In order to keep the exchange rate at the maximum Francs 107, as we have mentioned, the Minister of Finance had asked the Bank to intervene in the exchange market, a request that had been accepted by the Bank, but only under certain conditions. The government had to negotiate a long-term loan of US$150 million with an international consortium of central and private banks: the proceeds of the loan had to be transferred to the Bank in order to redeem the short-term debts of the government to the Bank and also to help the Bank maintain the convertibility of the franc at Francs 106. Janssen and the Governor of the National Bank started negotiating with the consortium, the negotiations being patronized by Benjamin Strong (Chairman of the American Federal Reserve Bank) and Montagu Norman (Governor of the Bank of England), both eager to have Belgium in the orbit of the gold exchange standard under

Anglo-American leadership. The discussions, however, dragged on. The foreign private bankers in particular, headed by J.P. Morgan of New York, refused to be involved in the loan within the context of Janssen's reform plan. Probably briefed by their Belgian colleagues, they were very critical of the plan. In their view, the reform had to solve, first, the problem of the short-term government debts and only at that point should the government stabilize the franc, only then could it return to the gold standard and to convertibility. Neither did the bankers agree with the target parity of Francs 106 to the pound, preferring Francs 120–125. The bankers, therefore, refused to subscribe to the loan until the Belgian government had adapted the plan in keeping with their wishes.

When the news about the negative results of the negotiations leaked out, it triggered a crisis of confidence among the holders of Belgian Treasury bills, who refused to renew them at maturity. The crisis spread to the exchange markets, where panic became general. Janssen instructed the Bank to give up supporting the franc. The exchange rate quickly soared over the course of a few weeks to reach Francs 217 to the pound. The government resigned. The Janssen reform plan had failed.

A new government of national unity, with full powers, was formed, fully dominated this time by the leaders of the big mixed banks. Emile Francqui, Vice-Governor of the Société Générale and in charge of a new monetary reform plan, was the government's strong man. He immediately took draconian measures. In order to balance the budget, taxes were increased sharply and public spending slashed. Francqui was also able to consolidate the floating debt, mainly through the privatization of the Belgian railways and a more or less compulsory conversion of the Treasury bills into shares in the new company. Because of Francqui's tough fiscal policy, the climate on the foreign exchange markets improved. The franc gradually recovered to approximately Francs 175, the rate Francqui had in mind as the stabilization rate. He now started new negotiations on a large, long-term international loan that would help to support the stabilization rate at Francs 175. This time negotiations with the consortium went well. The Belgian state was granted a 30-year loan of US$100 million and some central banks were willing to make available a loan of US$50 million to the National Bank.

The Royal Decree of 25 October 1926 restored the convertibility of the franc at a gold parity rate of Francs 175 to the pound and accepted the framework of the gold exchange standard. The Decree thus consolidated Janssen's earlier decision to leave the Latin Union and, linked with it, French monetary tutelage. Belgium now entered the club of countries, accepting Anglo-American leadership in monetary matters. The Decree

also specified that the National Bank's demand liabilities should be at least 40 per cent backed by gold or by key currencies, convertible into gold. In order to solve the problem of the claims of the Bank on the state, the Decree specified that the state should transfer the proceeds of the international loan to the Bank. Second, the profit, made by the revaluation of the Bank's gold stocks, which the statutes granted to the state, had to be transferred to the Bank. These measures put an end to the undesirable entanglement of Belgian public finances and the Bank's lending activities.

The monetary reform of 1926 was a big success. It stopped inflation and inaugurated a period of high prosperity in the country, real income rising substantially. Moreover, the new exchange rate of Francs 175 undervalued the Belgian franc, which gave a boost to Belgian exports, which in turn increased prosperity.

The gold exchange standard under pressure

Francqui not only succeeded in implementing successful monetary reform, he also undertook drastic reform of the organic law of the National Bank. At its creation in 1850 the Bank, founded as a private limited company, had been endowed with a monetary function and with a credit function, the latter to be focused on discounting trustworthy short-term commercial paper. Because overdrafts in current accounts were gradually replacing short-term discount credit, the Bank and its discount agencies in the provinces increasingly engaged in medium- and long-term lending. This breach of the organic law generated much tension between the Bank and the private bankers, who considered this latter kind of lending their own territory.

The renewal of the right of issue of the Bank, due in 1926, was an occasion for Francqui to change its organic law along lines of the private bankers' wishes. New regulations stipulated that the discount agencies had to limit their discounting activities to a few top-class short-term bills of exchange and were now subject to strict monitoring. Francqui also changed the structure of the Bank's policymaking bodies, replacing the Executive Board with a Committee of Directors and a Council of Regents. From then on, the real power would not be in the hands of the Executive Board any longer, but in the hands of the Council of Regents, which was controlled entirely by the leaders of the private banking community. In this way, the Bank was placed under the tutelage of the large private mixed banks. As a gesture of consolation, the Bank was given permission to engage in commercial lending outside Belgium.

The National Bank did not hesitate to take advantage of the consolation prize. Within the framework of the gold exchange standard, the Bank now began accumulating large quantities of convertible key currencies in its reserves – in particular, sterling. Investment in sterling was understandable because more than two thirds of Belgium's international trade at that moment was settled in this currency. Moreover, deposits of sterling at the Bank of England generated profit and discounted short-term commercial paper in sterling still more. Unfortunately, the success of Belgian monetary reform and the profits of the Bank by lending abroad occurred at a period of increasing macro-economic disequilibrium in the world. The Belgian franc was stabilized, as we have seen, at a much lower gold parity level than before the war, as was also the case for the French franc and the currencies of some other countries. They all were now undervalued on the international exchange markets, while the pound sterling and several other currencies, stabilized at their prewar gold parity, were overvalued. The divergence disturbed international trade to a progressively greater degree. In the countries with an undervalued currency exports boomed, and employment and income were rising; however, in the countries with an overvalued currency exports were shrinking, and unemployment and poverty rose.

When, following the Wall Street crash of October 1929, the financial crisis spilled over to Europe, and even further, the crisis became a deep economic world depression. The financial situation in the countries with an overvalued currency became untenable. In September 1931, the British government abandoned the gold exchange dtandard, suspending the convertibility of the pound and declaring it a floating currency. Many other countries with an overvalued currency followed suit, their currencies, just as the pound sterling, now plunging on the exchange markets. The Belgian government, on the contrary, decided to maintain the convertibility of the franc and the gold parity at the 1926 level, as did the French, Italian and Greek governments. The enormous war- and postwar inflation in all these countries and the devaluation of their currency at a fraction of the prewar gold parity was still so fresh in everybody's memory that public opinion supported the government's option for monetary stability at this moment of great uncertainty. The Swiss and Dutch governments also decided to maintain the gold standard. These countries had remained neutral during the war: they had therefore not suffered too much from inflation and had not depreciated their currency; but they wanted to preserve the international prestige they had won after the war on the exchange markets.

For the National Bank, the sterling crisis was a real disaster. Suddenly, the value of its important sterling portfolio shrank dramatically. The Bank immediately concluded a secret agreement with the Minister of Finance, whereby the state took on the sterling losses, but news got out about the agreement. Parliament and the press now protested vehemently: it was inconceivable, it was argued, that the Bank could pocket the profits of its lending abroad, but should now be allowed to socialize the losses. A new agreement was made, whereby the Bank assumed a large part of the losses.

The Belgian decision to maintain the convertibility of the franc at its 1926 gold parity soon created a second major problem. The plunge of the floating currencies at the exchange markets turned them quickly into undervalued currencies, while the Belgian franc became increasingly overvalued, increasingly impeding exports and generating massive unemployment. The government and the Bank took up the challenge in two different ways. Belgium, in the first place, joined the gold bloc which had been set up at the initiative of Francqui by the countries that had decided to remain faithful to the gold standard and to convertibility at the parity of the late 1920s. The purpose was to support each other in maintaining the gold standard, should one of the members get into trouble. Becoming a member of the gold bloc therefore implied for Belgium a new shift in monetary leadership: a shift from a gold exchange standard under Anglo-American leadership into one under French leadership. However, there was a significant difference between the two systems. Now, when receiving foreign currencies, the National Bank did not turn them into convertible French francs, the de facto key currency of the gold bloc, but turned them into gold. Soon, more than two thirds of the Bank's reserves consisted of gold. The gold bloc system thus was closer to the prewar gold standard than to the interwar gold exchange standard.

A change in macro-economic policy was Belgium's second answer to the challenge created by the sterling crisis. The government, supported by the Bank, initiated a drastic deflationary policy in order to bring Belgian export prices down to the price level of the sterling area. The Bank took measures to limit short-term lending and to curtail bank credits. The government, moreover, decreed a general wage cut, although wages were already declining because of their earlier linking with the declining general price index.

The deflationary policy failed entirely. The economic crisis, indeed, generated such an alarming increase in the number of insolvencies and bankruptcies in the industrial and financial sector that the Bank felt

compelled to intervene with a great deal of extra credit. Moreover, massive unemployment and decreasing wages and salaries generated so many strikes and so much social unrest that the government stopped its policy of reducing the cost of labour. The gold bloc, finally, did not meet expectations either. Belgium had hoped that the bloc would create a kind of common market, liberalizing trade within the bloc. This hope did not materialize: on the contrary, each country, especially France, locked its economy behind yet more protectionist borders.

From a gold exchange standard to a gold bullion standard

The failure of Belgium's deflationary policy and the obstacles to the liberalization of trade in the gold bloc area became, within the context of the world depression and of an increasing number of bankruptcies, an immediate threat to the Belgian economy. Economists at Leuven University realized that, in such circumstances, the overvaluation of the Belgian franc had to be eliminated. Its value should be adjusted to the level of the undervalued currencies in order to revitalize exports, so crucial a factor for the recovery of the Belgian economy. The Leuven team calculated that a devaluation of 28 per cent was needed to bring the Belgian price level down to the level of the sterling area, which at that time was still Belgium's main trade partner. Taking this last factor into account, the Leuven team even suggested linking the Belgian franc to the pound, in view of preserving the new price equilibrium. Van Zeeland, who in the meantime had become Vice-Governor of the National Bank and who had kept a part-time professorship at Leuven University, agreed with the conclusions of his colleagues, but still had to follow the Governor's stubborn backing of the government in its determination to maintain 1926 parity.

In March 1935, Belgium's increasing economic difficulties, combined with discussions in the press on the conclusions of the Leuven team, provoked a sudden flight from the franc. The National Bank had to stop converting francs into gold or into the few remaining convertible currencies. The government, which had promised to maintain convertibility of the franc at its gold parity level of 1926, resigned and a new government, headed by Van Zeeland, took over. It immediately devalued the Belgian franc by 28 per cent. Under the pressure of public opinion, however, the government did not link the franc to the pound; in other words, it did not declare the Belgian franc a floating currency, but maintained convertibility of the franc at its new gold parity, 28 per cent lower than the 1926 parity.

The other gold bloc countries were deeply disappointed by the Belgian devaluation. As a matter of fact, it marked the beginning of the disintegration of the gold bloc; France and the Netherlands soon followed Belgium's example and even, when devaluing their currencies, simultaneously abandoned the gold standard.

The new Belgian government, in which Socialists and Christian Democrats held the key posts, as had been the case in 1925, did not limit its action to a devaluation of the currency. It also undertook a large scale restructuring of the financial and monetary sector. Because public confidence in the financial sector had been shaken by the bankruptcies of some large mixed banks, the previous government, in view of reducing the risks of liquidity problems, had already ordered a split of all mixed banks into two separate institutions: a pure deposit bank and a holding company. The new government went still further. It created a Banking Commission as an independent public institution, which had to monitor the deposit banks with a view to protecting the savers, while the National Bank would concentrate on credit policy.

The new government also undertook a redistribution of power within the decisionmaking bodies of the National Bank with a view to eliminating the dominating influence of private bankers. The Council of Regents' function was reduced to the role of an advisory body and its composition was widened in order to be more economically representative. From then on, the Bank's policy decisions and management decisions were in the hands of a Board of Directors, but at the same time a government commissioner would check whether the Bank's decisions conformed to the public interest. It was clear that the government wanted to reinforce the public character of the Bank. Extra powers were given to perform its fundamental role as guardian of the currency and as regulator of credit, inter alia through the authority given to conduct open market operations, as was already the case in several other countries. In this way, the Bank had definitively taken the character of a modern central bank. As far as convertibility was concerned, Belgium had categorically changed its gold exchange standard of the late 1920s into a gold bullion standard. This change was maintained until the German invasion in May 1940.

The money supply in Belgium during the interwar period: an overview

Monetary policy is an action by the authorities to solve actual problems concerning money supply or concerning the demand for money, and therefore cannot be separated from the fluctuations in monetary

circulation. In this last section, we will try to integrate Belgian monetary policy during the interwar period into the evolution of the quantity of money in circulation, considered a function of the supply of money and of the demand for money.

In our overview, we assume that the supply of money is determined, on the one hand, by coins and banknotes (which are issued, respectively, by the government and the central bank and which we will call 'base money') and, on the other hand, money created by the banks (in other words, 'bank money', to be quantified by a 'base money-multiplier'). This multiplier is assumed to be determined to a large extent by the cash reserves the banks want to keep vis à vis the demand deposits they hold, and by the cash reserves the general public wants to keep in relation to their demand deposits at the banks.

On the eve of World War I (1913), coins and banknotes represented one third of the total quantity of monetary in circulation in Belgium, two thirds already consisting of bank money. The relative dominance of bank money, its multiplier rising to 2.63 in 1913, was a somewhat recent phenomenon that was due to the impressive economic expansion of the country during 'la Belle Epoque', which had stimulated the creation of many new industrial and commercial enterprises and had generated the rise of a wealthy middle-class. Both were extending their contacts with the banks.

During World War I, the evolution of monetary circulation changed drastically. The quantity of base money increased enormously, due to:

- the large advances by the monetary authorities to the government and to the administration for financing their war expenses;
- the introduction into circulation of German marks by the occupying authorities; and
- the hoarding tendencies of the population.

Bank money, on the other hand, decreased substantially, losing ground, in absolute and in relative terms, to the increasing volume of base money.

From 1913 to 1920, because of the enormous expansion of base money, the total quantity of money in circulation more than quadrupled; an increase of 20 per cent per annum. And this expansion occurred at a moment when industrial production was deeply depressed. Even when the war was over, the industrial sector was unable to recover quickly: on an annual basis, production in December 1920 was still 22 per cent below the level in 1913. No wonder, therefore, that the market prices

for consumption goods soared. No wonder either that the multiplier recovered only very slowly: in 1920, it stood at 2.00, still a far cry from its high level of 2.63 in 1913.

During the period 1920–25, the inflationary climate did not change very much. By government decree, the German marks (those in circulation during the war together with those imported fraudulently after the war) could be exchanged without limit, and at an attractive rate, into Belgian francs. Moreover, the government needed enormous amounts of money to finance the reconstruction of the country and to assist in the revival of its industrial sector at a time when fiscal income was still at low ebb. No wonder that, once again, the total quantity of money in circulation was rising further at a rate of 5.75 per cent per annum. The rise was, to a minor extent, due to the recovery of the volume of bank money, the multiplier rising from 2.00 in 1920 to 2.28 in 1925. There are strong arguments, therefore, that base money was the driving force behind the continuing rapid growth of the total quantity of money during this period and that it was, together with the slow recovery of industrial production, mainly responsible for the permanent inflationary climate of these years and for the substantial depreciation of the Belgian franc on the foreign exchange markets.

The period 1926–30 inaugurated a new era in the evolution of monetary circulation. In 1926, the total quantity of money was still growing, mainly because of a further increase in the volume of base money. Indeed, until October 1926 the increase was mainly due to large advances by the National Bank to the government in connection with its unsuccessful attempt to stabilize the Belgian franc. A second attempt, launched in October 1926 by a new government, was successful, stabilizing the Belgian franc within the framework of a gold exchange standard, albeit at an undervalued exchange rate. The monetary reform was accompanied by a large international stabilization loan by the government, the proceeds of which were transferred to the National Bank. This transfer was responsible for a shift in the structure of base money. From that moment on, its international component became predominant, the domestic component losing ground. The repatriation of capital that had fled the country because of the war and the uncertain postwar situation was a second factor in turning the international component of base money into a major component.

From 1927 on until the end of 1929, the international component of the base money continued its growth, because of a further repatriation of capital, the improvement of the trade balance, and growing foreign investment. But, at the same time, the strong expansion of the Belgian economy also stimulated a substantial further increase of bank money,

the multiplier now increasing from 2.28 to 2.48. The simultaneous increase of base money and bank money during the period 1926–30 was now responsible for growth in the total quantity of money in circulation in Belgium by 15.6 per cent per annum.

During the period 1930–34, the evolution of the total quantity of money in circulation stagnated, and even became negative from 1932 onwards. The stagnation and subsequent decline was, of course, due to the Great Depression, which severely hit the Belgian open economy, dependent upon exports. To overcome the export crisis, the government first launched a deflationary policy, but this was quickly abandoned. Thereafter, the government soon began an intervention policy, financed by advances from the National Bank, with a view to protecting savings and preventing a general liquidity and solvency crisis. The intervention policy, although it remained limited, was nevertheless responsible for a slow increase of base money. Bank money, on the contrary, contracted to a significant degree during the same period, in particular from September 1931 onwards, when sterling went off gold. The multiplier fell from 2.48 in 1928 to 1.54 in 1935. The contraction of bank money, therefore, now became the main determining factor in the evolution of the total quantity of money in circulation and contributed substantially to the deepening of the economic crisis in Belgium.

During the period 1936–40, the base money once again became the crucial factor in the evolution of the total money supply, although in a much more capricious way than during and immediately after World War I. After the devaluation of the Belgian franc in March 1935, much of the Belgian capital that had fled the country before devaluation was repatriated. Simultaneously, capital from the other gold bloc countries fled to Belgium, expecting a similar devaluation of their own currencies. That flight capital, however, returned as soon as these countries had also devalued. Meanwhile a general flight of capital from Europe to the US took off in view of an expected second World War. The decrease of the volume of base money, which was caused by these two last movements, was compensated more than proportionally by advances of money by the National Bank to the Belgian government, which had decided to prepare the country against a German invasion. A second factor was, of course, the significant increase of hoarding by the population at the expense of its demand deposits.

The volume of bank money recovered somewhat after the devaluation of the Belgian franc in March 1935, this was due to Belgium's improved export position: the multiplier therefore rose again, from 1.54 in 1935 to 1.62 in 1938. But from 1938 onwards, with the prospect of a second World War and because of increasing hoarding, the multiplier declined from 1.62

in 1938 to 1.45 in 1940. Notwithstanding this decline, the total volume of money in circulation in Belgium continued to increase substantially during the years 1936–40, due to the impressive increase of base money.

Conclusion

Belgium, a country on the periphery in monetary matters, experienced turbulent years during the interwar period. From decades of monetary stability in a limping gold standard system under French leadership during the last quarter of the nineteenth century and the beginning of the twentieth, during World War I and the immediate postwar years, Belgium's monetary system became chaotic, without any leadership from another country. The situation changed when, in 1926, the Belgian government was able to stabilize the Belgian franc and to enter the system of the gold exchange standard under Anglo-American leadership. The sterling crisis of September 1931, however, disrupted the system, Belgium moving slowly into a gold bullion standard, without any clear monetary leadership. But the government took advantage of the new situation to reinforce the monetary and credit functions of the National Bank, enhancing the public character of the institution and turning it definitively into a modern central bank.

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8

Floating against the Tide: Spanish Monetary Policy, 1870–1931

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The gold standard is not the monolithic metallic monetary system that it was once believed to be. Country cases and detailed studies of the actual workings of the system have shown that the gold standard was not a rigid mechanism for adjustment to external disequilibria, and that it enabled core and peripheral nations to tailor it to their needs. Exchange rate stability was achieved by various means. Some countries followed the so-called 'rules of the game', while others systematically evaded the rules and resorted to a variety of methods to keep the price of their currencies fixed against gold. Moreover, gold coins were a major part of the money in circulation in some countries, while gold did not circulate at all in others. Gold convertibility was usual in the core countries but, to a certain extent, specie convertibility was the exception in peripheral nations. As has recently been stressed, a re-conceptualization of the gold standard system has brought to the fore its reputational aspects and its status as a 'contingent rule', instead of the traditional approach, which focused on adherence to strict patterns of behaviour and well-defined rules. According to the new approach, the monetary policies that were followed in the short term mattered little, provided that in the long term a country was fully committed to the regime and that the financial community believed this to be true.[1] We also know now that countries' monetary authorities' commitment to a fixed exchange rate regime (in the form of target zones) did not lead to them entirely relinquishing their monetary independence, as long as agents considered the countries' commitment to be credible. In consequence, as long as economic agents considered a country's commitment to gold as credible, the country could violate the rules of the game in the short term to further other policy goals. Moreover, evidence shows that the objectives of central banks under the gold standard regime was not

simply convertibility and the stability of the exchange rate but, rather, a combination of goals, including profit maximization, just as with any other private financial institution.[2]

The gold standard began to emerge as a universal monetary system in the late 1870s, and it had spread throughout the world economy by 1900.[3] It was unusual for nations to be off the gold standard, and it meant that they were detached from the international financial community. World War I led to the complete breakdown of the gold standard. Exchange controls were introduced almost universally (with the sole exception of the US), international flows of capital were interrupted, and world trade collapsed. The Armistice of November 1918 did not lead to the immediate restoration of the gold standard. The war was followed by a serious and protracted economic and financial crisis, and all the European currencies experienced wild fluctuations, which were particularly acute in the nations of the cental empires (Germay and its allies). Although currency stabilizations began in 1923/24 under the auspices of the League of Nations, the reintroduction of the gold standard was marked by the British pound sterling's return to gold at its prewar parity in 1925. By the end of 1929, when the New York Stock Exchange crash ushered in the Great Depression, most European currencies were once again linked to gold.[4]

Spain did not join the gold standard club in any of its versions, either before or after 1914. Unlike the vast majority of the European currencies, the peseta's exchange rate fluctuated (sometimes widely) against gold and gold currencies.[5] Gold convertibility was suspended in 1883 and never resumed. Nevertheless, the monetary authorities were aware that the Spanish economy, off the gold standard, was an outlier in the international economy and made plans to put the peseta on gold both before and after 1914. No matter how forcefully they were pursued, all attempts ultimately failed because policy measures were not always consistent with this goal. Neither the Treasury nor the Bank of Spain was prepared to take the necessary measures to choose an appropriate par and to make the commitment to maintaining it. The Ministry of Finance was unable to balance the budget and to follow an orthodox fiscal policy along the lines required to keep the exchange rate stable. Meanwhile, the minutes of the board of directors of the Bank of Spain show that its private interests (i.e. paying high dividends to its shareholders) always prevailed over the public interest (a stable peseta). One conclusion of this chapter is precisely that: the adoption of the gold standard was a mere 'wish' but, ultimately, the actual monetary and fiscal policies were not oriented towards that goal, or at least they were not pursued with sufficient conviction.

The monetary experience of Spain, which was until very recently a poor and peripheral country, may be of interest for several reasons. First, it is the only European country in which the gold standard was never implemented, despite the fact that the monetary authorities repeatedly declared their intention to peg the peseta's exchange rate to gold. Why Spain never adopted the gold standard is a complex issue, and our chapter offers a possible answer by examining the behaviour of an issuing bank that refused to accept, or resisted, its role as a central bank. Our study also provides a basis for a comparison between the Bank of Spain, some of its features and policies, with other peripheral issuing institutions. Moreover, our chapter encompasses both the prewar and the postwar periods, which allows us to present both the similarities and the differences in the exchange and monetary policies of the Spanish authorities during the era of the classical gold standard and the years of the gold exchange standard.

We have chosen to focus our analysis on the policy and behaviour of the Bank of Spain, which enjoyed the monopoly of issue for the entire country from 1874 on.[6] The remainder of this chapter is divided into four sections. In the first section, we provide a brief outline of the main constraints and determining factors in the Bank's policies. The second section is devoted to examining the Bank's behaviour during the classical gold standard period. A similar analysis for the interwar period is conducted in the third section. The paper concludes with a final section, which is both brief and speculative.

Capital mobility, fiscal deficits and the balance of payments

Members of the gold standard club are supposed to behave appropriately in order to maintain the stability of the exchange rate, and the convertibility of its currency into gold. They must allow capital to move freely (i.e. they cannot raise barriers to the exportation and importation of gold); and they must avoid persistent imbalances in the country's government budget and in the current account balance of payments.

Capital mobility was the rule before 1914. Foreign investment flowed unimpaired into the country. Likewise, foreign investors could repatriate interests and dividends as often as they wished and without any obstacles. Gold inflows and outflows were not controlled or subject to any type of official intervention.[7] Railways, banks and industrial firms could borrow freely on the international markets, and the government floated bonds in the London and Paris stock exchanges, provided that

guarantees of repayment were given. One of the key features of the workings of the gold standard was thus in place. The experience with capital mobility during the interwar years was more complex. Mild and partial exchange controls were introduced as early as 1919 to contain the depreciation of the peseta. The systematic administrative intervention on the exchange market began in 1928 and intensified during the following years, and Spain was one of the first countries to introduce a formal exchange control apparatus.[8] Capital mobility was not then a feature of the period, but was also not part of the international economy. However, this did not prevent many countries from adhering to the so-called gold exchange standard.

With the exception of one year, the Spanish budget closed with significant deficits between 1874 and 1898, which were particularly large at the end of the century due to the extraordinary expenditure required by the colonial wars in Cuba, Puerto Rico and the Philippines. The outstanding public debt tripled as a consequence, and part of it found its way into the portfolio of the Bank of Spain, contributing to the increase in the amount of high-powered money. The monetization of the debt thus led to an increase in the quantity of money in circulation slightly over GDP, which made Spanish prices diverge from the relentless decline in international prices. After 1900, fiscal reform and a drastic conversion of the debt turned the government accounts around, and the budget ended with surpluses for nine years in a row. Thereafter, the deficit made a return and new debt issues were necessary. The Treasury went to the Bank and to the market but eventually most of the securities were monetized. Had the Bank of Spain attempted to follow an independent monetary policy during those years, it would have come into conflict with the Treasury and its financial needs. The budget deficit persisted during the 1920s and 1930s, although the Ministry of Finance introduced reforms to increase revenues and measures to curtail spending. These were insufficient to balance the annual budgets.[9] It can therefore be argued that public finance (i.e. the government's inability or unwillingness to eliminate the deficit) may have been one of the impediments to adopting the gold standard. Exchange rate stability was certainly an official goal, but actual fiscal policy was inconsistent with such a goal. Nevertheless, the reverse argument is also plausible and has to be explored. Adherence to the gold standard required fiscal discipline, at least in the long term. If the Spanish monetary authorities had committed to the gold standard, they would have been forced to rationalize spending and, above all, to reform and modernize the fiscal structure. Moreover, a well-behaved Treasury would

have been in a better position to impose its will (exchange rate stability) upon a Bank of Spain with a franchise as sole issuer that depended on the government. Faced with the alternative of losing its privilege or contributing to the maintenance of the gold standard and the gold convertibility of the peseta, it is probable that the Bank would have preferred the latter, and its transformation into a genuine central bank would have occurred earlier.

External imbalance is another possible reason for Spain's unusual monetary experience.[10] Until the mid-1880s, the persistent current account deficits in the balance of payments were amply covered by capital inflows that were channelled into railways and banking companies, as well as into government bonds. The stream of foreign investment ended in the 1880s and the current account ran a surplus until 1898. The trade deficit returned thereafter, but so did foreign capital. The current account closed with increasingly large surpluses from 1905 onwards. As Spain was a neutral country, the war years fostered exports and limited imports, and the balance of payments ended with large surpluses as a result. However, during the interwar period the external balance was reversed. In the 1920s, the trade deficits were huge, and the balance of payments was also negative in the 1930s, despite the adoption of strict exchange controls.

The balance of payments results over these six decades do not lend themselves to an easy interpretation as regards the question of the gold standard and its long-term sustainability. Our view is that, contrary to some arguments, the balance of payments was not a constraint on the choice of monetary regime, if only because when deficits occurred they amounted to a relatively small percentage of GDP. Furthermore, a credible commitment to the gold standard would have certainly improved access to the global capital market and reduced transaction costs with other gold standard nations. Periods of balance of payments difficulties would have mattered less or not at all because the current account deficits would have been settled with capital inflows. In fact, given the historical experience during the prewar era, when funds from London, Paris and Berlin financed world trade and covered current account imbalances, there is no reason to suppose that Spain would have not received as much capital as it needed to compensate any deficit, whether external or internal. The interwar era admittedly poses more problems but the argument is still valid, since we know that peripheral countries on the gold standard in Europe and elsewhere were able to obtain capital in New York until at least 1929.

The monetary policy of the Bank of Spain during the classical gold standard, 1874–1913

Spain never adopted the gold standard. The country retained a bimetallic monetary system until 1883, at which point the peseta's gold convertibility was suspended and the exchange rate shifted to a floating regime within an international context of the gold standard.[11] Figure 8.1 shows the rate of the peseta against the pound sterling and the French franc, which were considered benchmark currencies at the time. The developments in this respect fall into three periods. During the first period, until the early 1890s, Spain maintained the price of the peseta within a narrow range by controlling the monetary aggregates. In the second period, from the early 1890s onwards, when the peseta depreciated considerably due to an excess of issue, there was an exchange rate crisis in 1898 due to the excessive monetization of the public deficit due to the financing of the colonial wars. In the third period, after the loss of the last colonies in 1898, the peseta appreciated because economic policymakers strove to correct the increase in the money supply caused by the excessive budget deficit.

Despite being off the gold standard system, Spain always maintained a political interest in joining the gold standard monetary system.[12] In this section, we examine the monetary policy adopted by the Bank of Spain during the era of the classical gold standard. Our objective is to analyze

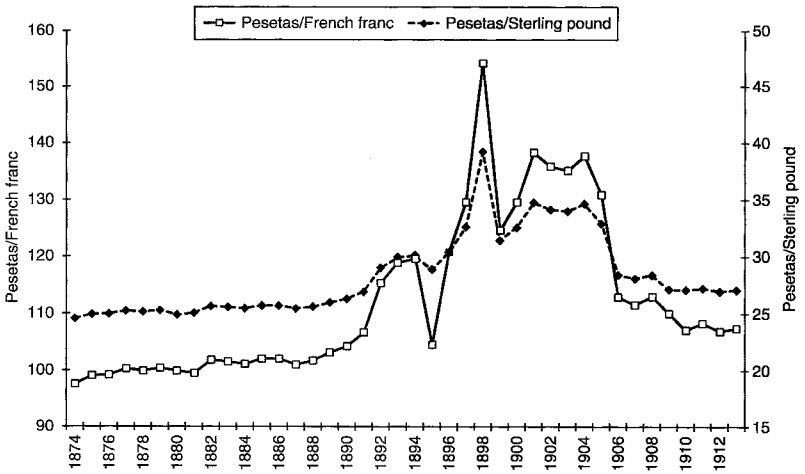

Figure 8.1 Nominal exchange rate, 1874–1913
Source: Martín-Aceña and Pons (2005): 704.

whether the Bank of Spain's monetary policy was oriented towards the objective of joining the gold standard, or if its policy was based on goals other than the gold standard.

The traditional literature defined the monetary policy that central banks had to follow to sustain the gold standard as 'the rules of the game'. These rules forced central banks to implement a restrictive monetary policy when the country was losing gold and an expansionary monetary policy when the country was accumulating gold in order to restore equilibrium in the balance of payments.[13] Compliance with the rules of the game was measured by two indicators. The first indicator was based on the relationship between the change in reserves (non-earning international assets) and the change in domestic income-generating assets. If the country began to lose gold, the central bank had to sell bonds from its portfolio for cash, reducing the money supply and therefore restricting the outflow of gold. Both the reserves and the domestic income-generating assets were reduced as a result, and a positive correlation between the changes in two variables showed that the central bank was following the rules of the game. The second indicator was based on the relationship between the change in the interest rate and the change in the reserve ratio (reserves divided by sight liabilities, notes plus deposits). The central bank had to raise the interest rate to reduce the money supply when it was losing reserves, and lower the interest rate to increase the money supply when it was gaining reserves. A negative correlation between the rates of change in the interest rate and the reserve ratio therefore shows that the central bank was following the rules of the game.

Spain did not follow the rules of the game in the classical gold standard era of 1880–1914.[14] The annual variation in the Bank of Spain's domestic income-generating assets and reserves presents a negative correlation for more than 40 per cent of this period. In addition, there was no systematic negative correlation between changes in the interest rate and the reserve ratio. The Bank of Spain's interest rate underwent a few changes throughout the entire classical gold standard period, and there was only a negative correlation between changes in the interest rate and the reserve ratio in the early 1880s (1879–84) and in the late 1890s (1896–1903), when the reserve ratio fell significantly, which threatened convertibility and in fact led the Bank of Spain to cease converting its notes into gold in 1883.

However, these results are not surprising. Bloomfield (1959) tested the rules of the game followed by the countries belonging to the gold standard monetary system and found that central banks did not follow the rules of the game but enjoyed uninterrupted convertibility.[15] The reason for this is that central banks did not implement monetary policy based on the

balance of payments as required by the rules of the game, but instead used the rule of convertibility as a de facto monetary target (i.e. a fixed exchange rate sustained by interventionist policies in the market).[16] The classical gold standard was an exchange rate band, in which exchange rate movements were limited by the gold points.[17] The central banks guaranteed convertibility by applying exchange rate policies to maintain exchange rates within the gold band. The most common policy of intervention followed by central banks was the sale of gold against their own notes in the domestic bullion market, which enabled them to stabilize the exchange rate and enjoy discretion in monetary policy at the same time. Interest rates did not react to the loss of reserves when the exchange rate was strong, only doing so when the exchange rate was weak and convertibility threatened.

Some peripheral countries, such as Portugal, which had a small domestic bullion market, applied exchange policies based on importing gold and exchange rate manipulation to maintain the changes within the gold band.[18] Others, such as Sweden, adopted passive policies to defend convertibility. The central banks in the gold standard system were required, on demand, to convert their notes into metallic coins – gold coins in the gold standard system. The convertibility of notes into gold stabilized the exchange rate because, if the exchange rate went beyond the gold points, the arbitration process would readjust the exchange rate as long as the Bank had enough reserves to change its notes until the exchange rate was restored. This passive passive defence of convertibility required a high reserve ratio, which ranged from 50 per cent to 100 per cent in the case of Sweden. The Riksbank strangled domestic credit, keeping interest rates high to protect the specie standard.[19] The monetary policy applied by the Bank of Spain after inconvertibility became a matter of fact in the early 1880s was also adopted as passive policy defence based on a high reserve ratio. The higher the reserve ratio, the greater the credibility the Bank enjoyed.[20]

The guarantee of convertibility was legally regulated by the establishment of ceilings on the issuance of notes based on two variables – reserves and share capital. The relationship between the issue of notes and reserves acted as a guarantee of liquidity, while the relationship between the issuance of notes and capital was the guarantee of solvency. Table 8.1 summarizes the limits on issue imposed on the Bank of Spain.

The legislation set limits on the issuance of notes in the 1874 decree that granted the Bank of Spain the monopoly of issue. These limits required that the gold or silver reserves were at least one quarter of the

Table 8.1 Legal maximum for banknotes issued by the Bank of Spain, 1874–1913

	Minimum reserves	Minimum capital
Decree 19 March 1874	reserves ≥1/4 notes	500 millions pts (1874–1881) 750 millions pts (1882–1890) (notes ≤ 5 paid-up capital)
Law 14 July 1891	reserves ≥1/3 notes gold reserves = 1/2 reserves	1500 millions pts (notes ≤ 10 paid-up capital)
Decree 9 August 1898	0–1500 mill notes: reserves ≥1/3 notes 1500–2000 mill notes: reserves ≥1/2 notes 2000–2500 mill notes: reserves ≥2/3 notes and for all notes: gold reserves = 1/2 reserves	2500 millions pts (notes ≤ 16 2/3 paid-up capital)
Decree 2 August 1899	0–1500 mill notes: reserves ≥1/3 notes 1500–2000 mill notes: reserves ≥1/2 notes and for all notes: gold reserves = 1/2 reserves	2000 millions pts (notes ≤ 14 2/3 paid-up capital)
Law 13 May 1902	0–1200 mill notes: reserves ≥1/3 notes (1/2 gold) 1200–1500 mill notes: reserves ≥60% notes (40% gold and 20% silver) 1500–2000 mill notes: reserves ≥70% notes (50% gold and 20% silver)	2000 millions pts (notes ≤ 14 2/3 paid-up capital)

Source: Galvarriato (1932: 212–15, 236–7).

banknotes in circulation and that the paid-up capital amounted to at least one fifth of the banknotes in circulation. Subsequent laws set stricter issuance limits in terms of reserves, although no longer related to the paid-up capital. In the negotiations with the Treasury, the Bank of Spain strongly defended its monopoly of issue, and the Banks's directors aimed at separating the legal issuance limit from the institution's share capital.[21] The law of 1891 changed the criteria for issuance, and required that the reserves amounted to at least one third of the value of notes, with at least half of the reserves in gold. The issuance limit was set at

1,500 million pesetas, with no direct link to the capital which, given the paid-up capital of the Bank at that time, in practice amounted to a very substantial reduction in the issuance limit equal to 10 times the capital. The 1898 decree authorized the Bank of Spain to increase the issuance of notes to 2,500 million pesetas (16.66 per cent of its capital), with reserves guaranteed in tranches: a reserve ratio of one third was maintained for up to 1,500 million pesetas; a reserve ratio of one half was set for the band between 1,500 million and 2,000 pesetas, and a reserve coefficient of two thirds was set for the band between 2,000 and 2,500 million pesetas; half the reserves had to be in gold for all the bands. The decree of 1899 reduced the maximum issuance to 2,000 million pesetas (14.66 per cent of the capital) and maintained the reserve limits that had been established in the decree of the previous year. Finally, the law of 1902 maintained the issuance limit at 2,000 million pesetas and left unchanged the reserve ratio for up to 1,200 million pesetas at one third (with half in gold), although it increased the reserve ratio to 60 per cent for the issuance band between 1,200 and 1,500 million pesetas (40 per cent in gold and 20 per cent in silver) and 70 per cent for the band between 1,500 and 2,000 million pesetas (50 per cent in gold and 20 per cent in silver).

The Bank of Spain always had a reserve ratio above the legal limit for silver, but it remained at the limit established by law for gold (see Figure 8.2). The Bank considered the surplus reserve ratio to be an indicator of credibility for conversion. This conversion of notes for cash had taken place exclusively in silver since 1883 and, as such, maintaining a surplus in the silver reserve ratio was all the Bank had to do to ensure its convertibility. The gold reserve ratio remained at the limits specified by law and, as a rule, these limits were lower than the 33 per cent used by the gold standard countries.[22] In order to have been able to join the gold standard, the Bank of Spain would have had to reduce its note issuance substantially, but the Bank of Spain did not feel committed to exchange rate stability or the convertibility of banknotes into gold.[23]

In part, the excess issuance of banknotes was the result of the monetization of the public deficit, which is why Spain could not join the gold standard (see Figure 8.3). The Bank of Spain was not a government institution and, as such, the Treasury did not share in the institution's profits, but the government granted the Bank the monopoly of issuance in 1874 in exchange for a loan of 150 million pesetas. The Bank of Spain advanced cash to the Treasury in exchange for government bonds that the Bank kept in its portfolio. In the first years of the monopoly of issuance, the accumulation of public debt did not result in increases in the amount

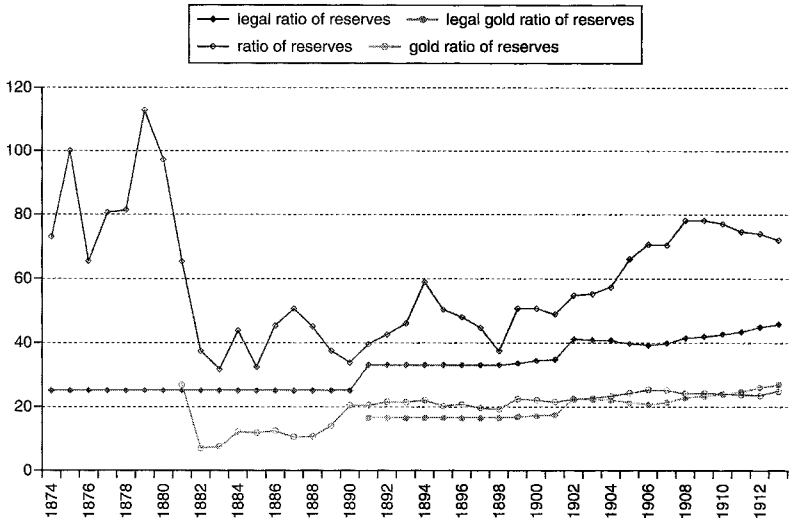

Figure 8.2 Bank of Spain reserve ratio, 1874–1913 (reserves/notes) (%)
Sources: Reserve ratio calculated from the Bank of Spain balance sheets, Anes (1974b: 143–56 and 1974c: 114). Legal reserve ratio from Galvarriato (1932: 212–15, 236–7) (see Table 3.1). The balance sheet of the Bank of Spain did not specify if its reserves were gold or silver until 1881. Spanish legislation did not oblige it to keep a percentage of its reserves in gold until 1891.

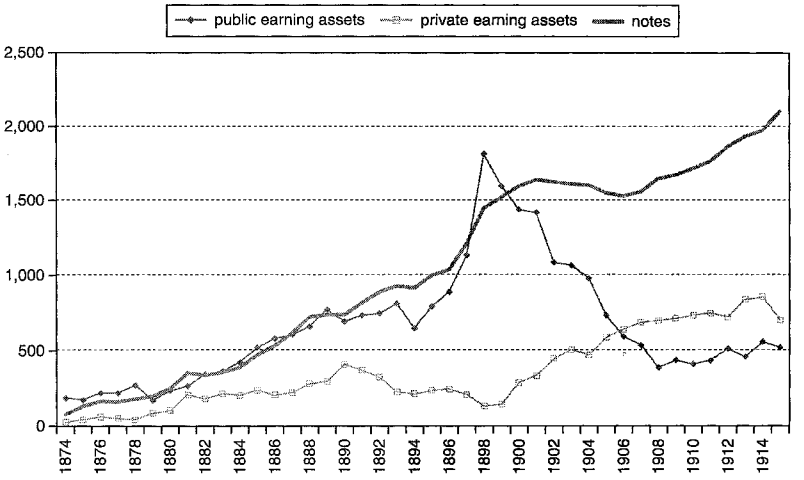

Figure 8.3 Bank of Spain portfolio and notes, 1874–1915 (pesetas, million)
Source: Data from the Bank of Spain balance sheets, Anes (1974b: 143–56).

of money.[24] However, the monetization of the deficit became widespread in the mid-1890s and increased sharply with the conflict between Spain and the US in 1898, which led to a precipitous fall in the peseta's exchange rate. The Bank of Spain increased the circulation of notes by an average of 10 per cent per year throughout the period in exchange for assuming the Treasury's debt. After the independence of the last Spanish colonies in the early twentieth century, the government decided to end fiscal indiscipline and prohibited borrowing from the Bank without prior legal authorization. It also undertook to reimburse the Bank within 10 years (1902–1911) for the bonds that the Bank retained in its assets.[25] However, the Bank did not reduce the notes in circulation proportionally to the reduction of public earning assets, which would have provided a gold reserve ratio sufficient to enter the gold standard. Instead, the Bank maintained the volume of notes in circulation and increased short-term silver reserves because of the lack of turnover to replace the public earning assets portfolio with private earning assets.[26]

The excess silver reserve ratio, which reached almost 80 per cent, was not compensated by high interest rates to maintain profitability. On the contrary, the Bank of Spain's level of interest rates was at the international level, albeit with a different fluctuation pattern (see Figure 8.4). As noted, the Bank of Spain's interest rate changed little during the era of the classical gold standard. There were two periods of rising rates linked to the loss of reserves, in the early 1880s and in the late 1890s. During the remainder of the period, interest rates remained stable at levels of between 4 per cent and 4.5 per cent, set at levels to minimize the service cost of the public debt.[27] On the other hand, the policy of the Bank of Spain was to offer loans guaranteed with government bonds at an interest rate lower than the rate earned by the public bonds themselves, thereby encouraging speculators to borrow at much as possible by pledging public bonds, use the loan to buy more public bonds and use them once again as a guarantee for another loan to buy more public bonds, and so on.[28]

The Bank maintained the surplus reserves as a measure of credibility, but it was aware of the loss of profits that holding a percentage of reserves above the minimum required by law entailed.[29] This loss of potential profits was compensated by larger note issuance with regard to the paid-up capital (see Table 8.1), which enabled the Bank to have an average annual shareholder return of over 20 per cent throughout the period of the classical gold standard (see Figure 8.5). The return on assets (ROA) decreased steadily throughout the period due to the increase in reserves, but the return on equity (ROE) remained high and stable thanks to the surplus issuance on capital, which enabled the Bank to

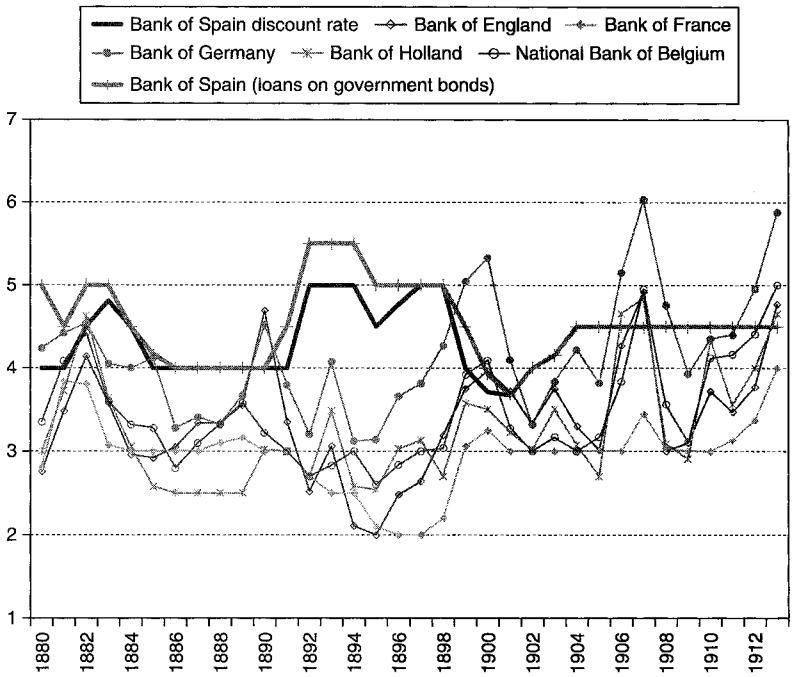

Figure 8.4 Comparison of annual average discount rates: Spain, England, France, Germany, Holland and Belgium, 1880–1913 (average of weekly figures)
Source: White (1933: 331). The data for the Bank of Spain comes from the Minutes of the Shareholders' General Meetings, 1880–1913.

maintain the high shareholder return (see Figures 8.5 and 8.6). The risk posed in order to sustain a very high ROE was offset by the excess silver reserve ratio. The drawback of this policy was the need to keep the country off the gold standard, because joining the gold standard would have meant reducing the note issuance, and therefore the shareholder return. The Bank of Spain, as a private bank, privileged its own interest (i.e. profitability) over the 'public good' of exchange rate stability. We can therefore conclude that the Spanish issuance financial institution was uninterested in joining the gold standard (the maintenance of a stable exchange rate for the peseta). As private bank, it focused on profitability, disregarding entirely its duty as keeper of both the internal and the external value of the national currency. The Bank of Spain had been granted the monopoly of issuance but its private constitution was in conflict with the public duties of a genuine central bank.[30]

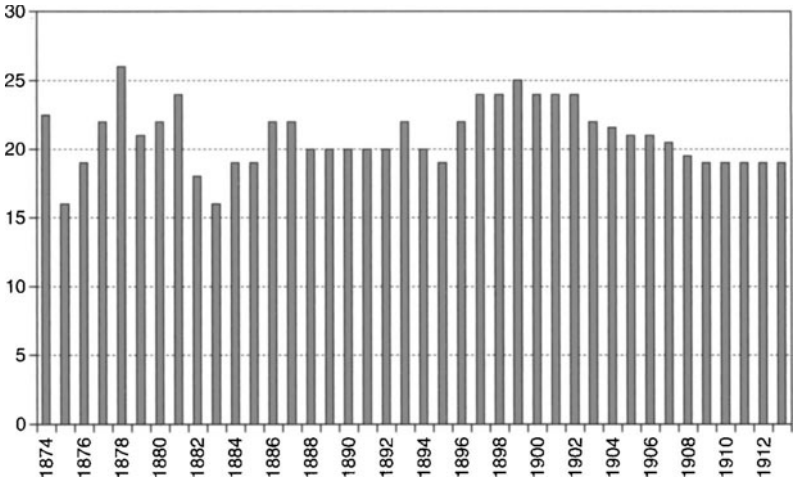

Figure 8.5 Bank of Spain annual shareholder return, 1874–1913 (%)
Note: We have calculated profits for the period before 1900 following Martínez Méndez's methodology.
Source: Shareholder return = dividend/paid-up capital. Figures from the Minutes of the Shareholders' General Meetings, 1874–1913.

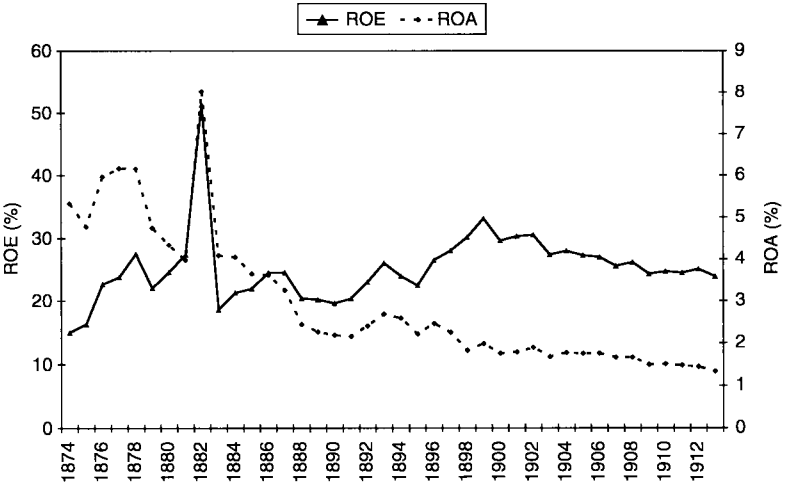

Figure 8.6 Bank of Spain ROE–ROA (%), 1874–1913
Source: ROE (%) = profits/owner's equity. ROA (%) = profits/total assets. Owner's equity and assets have been taken from the Bank of Spain balance sheets, Anes (1974b, pp. 143–56). Profits from the Minutes of the Shareholders' General Meetings, 1874–1913 (appendix D: 1874–1891, and appendix C: 1892–1913), Archive Bank of Spain.

The Bank of Spain and the gold exchange standard, 1914–31

Spain also failed to adopt the gold exchange standard. The peseta continued to float freely on the international markets until 1931 – although, given the many interventions that took place, the situation might be better characterized as a 'dirty' float. World War I created a very favourable situation for the economy of a neutral country such as Spain, which posted substantial trade surpluses between 1914 and 1918. Due to the conviction that only gold could provide adequate safeguards in that uncertain environment, currencies obtained were quickly converted into gold, coins and bullion. Between 1914 and 1918, the Bank of Spain acquired approximately 463 tons of gold, which was worth 1,595 million pesetas at the parity established in the currency reform of 1868, which was theoretically still in force. This all led to a significant appreciation of the peseta in the international markets (Figure 8.7). The increase in gold reserves and the increase in the value of the currency revived the discussion on adopting the gold standard. Indeed, the preconditions had never before been as favourable, as the two factors mentioned above were joined by a rising silver price that made its demonetarization less costly.[31] However, after the exceptional circumstances of war, the Spanish economy once again posted high trade deficits, as well as a persistent imbalance in the country's government accounts. In 1919, the belligerent

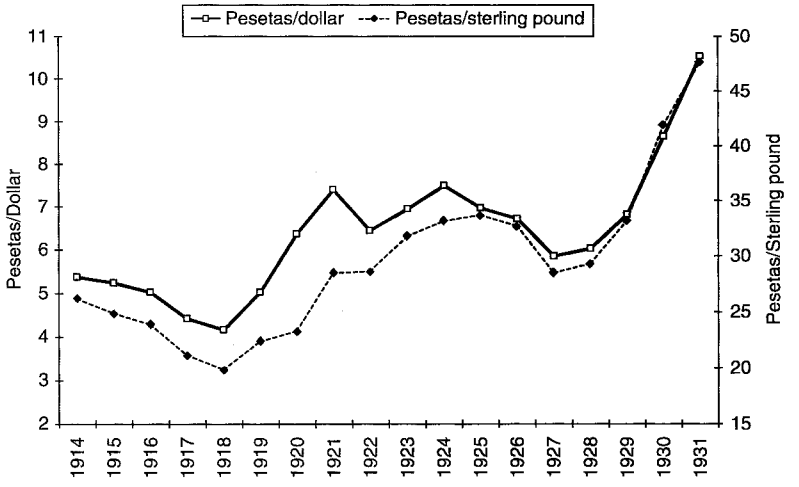

Figure 8.7 Nominal exchange rate, 1914–31
Source: Martínez Méndez (2005, table A26.1)

countries gradually abandoned the extraordinary measures taken during the war and their respective currencies began to realign themselves according to the new situation.[32] The peseta began to fall in the international markets from 1919 onwards, as did most European currencies. Thereafter, it remained relatively stable between 1922 and 1925. A gradual appreciation of the peseta exchange rate in 1926 and 1927 gave new hope to advocates of Spain's membership to the so-called gold exchange standard. However, from 1928 onwards, the external value of the peseta began a continuous drop and all official attempts made to stabilize it met with complete failure. As had happened before 1914, the Spanish currency remained outside the dominant monetary standard of the period.

There were two options available to economies wanting to return to the gold standard in the 1920s: to devalue or to deflate. As is well-known, the cases of France and Britain are the classic examples of both choices.[33] In Spain, the need to stabilize the peseta exchange rate and the possible adoption of the gold standard were hotly debated, as is evident in the numerous publications and reports published during the interwar years.[34] However, the attempts of successive governments throughout the period to take definite steps in that direction were offset by the obstructive attitude of the Bank of Spain, which was strongly opposed to devaluing the peseta below its legal parity of 1868, which would have led to a strong appreciation of the Bank's external assets.[35] The appreciation of the reserves would have entailed the appearance of substantial extraordinary profits, leading to a political problem over its attribution to the government or to the shareholders.[36] Moreover, the Bank flatly refused to support any measure that would involve committing its metallic reserves to ensure (gold) convertibility or to the maintenance of a stable exchange rate.[37]

Spain's economic policy at no time aimed at deflation. The Bank of Spain's monetary policy did not follow the classic rules of the game that forced players to react to losses of reserves by limiting the system's liquidity.[38] The income-generating domestic assets therefore evolved independently from the reserves. The changes were in the opposite direction in almost 40 per cent of cases. On the other hand, the discount rate was rarely used to counteract movements of reserves, as evidenced by a correlation index of 0.021, but with a positive sign.[39] In fact, this instrument was barely used, as the discount rate changed only nine times between 1914 and 1931. During this period, as in the previous one, the issuing bank preferred to use 'gold devices' whenever it had to deal with situations requiring an increase in the price of money. On several occasions,

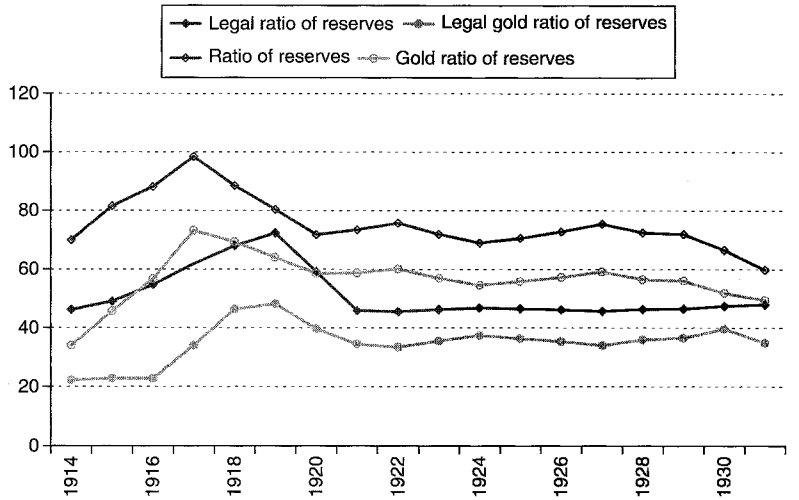

Figure 8.8 Bank of Spain reserves ratio, 1914–1931 (reserves/notes or gold/notes) (%)

Sources: Reserve ratio (notes/reserves) and gold reserve ratio (notes/gold) calculated from the Bank of Spain balance sheets, Martín-Aceña (1985, table IV-1 and IV-2). Legal reserve ratio and legal ratio of gold reserves from Martínez Méndez (2005, table 15.2.)

internal instructions were given to ration credit and, on some occasions, silver coins were put in circulation instead of issuing banknotes.[40]

The passive strategy of maintaining a high reserve ratio continued, in the belief that only the existence of a large volume of metal (gold and silver coins and bullion) in the vault of the Bank ensured confidence in the notes in circulation. Besides, the gold newly acquired during the war enabled the issuing institution to increase its reserve ratio to the point that the metallic cover exceeded 70 per cent in most years, as shown in Figure 8.8 above. Hence, a basic difference between this period and the previous one is that Spain was easily able to comply with the Palmer rule. In fact, the Bank of Spain's gold coverage remained at around 60 per cent throughout the interwar period, well above the international level.[41]

Between 1914 and 1920 the issuance limit was extended six times, reaching 5,000 million pesetas (see Table 8.2). However, despite this strong monetary expansion, the Bank of Spain had enough gold to back the banknotes in circulation for the first time since gold convertibility was interrupted. In fact, the large purchases of gold during the war enabled the Bank to maintain an amount of excess reserves far above

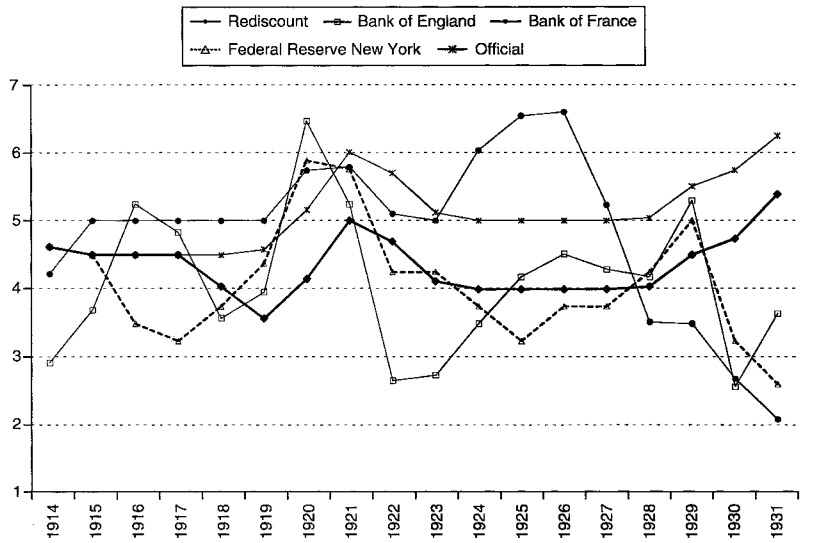

Figure 8.9 Annual average discount rates: Bank of England, Bank of France, New York Federal Reserve Bank and Bank of Spain
Sources: For Bank of Spain (official and rediscount), Minutes of the Shareholders' General Meetings, 1914–1931; for Bank of England and the Reserve Bank of New York, Martínez Mendez (2005: table A30.11); for Bank of France, NBER Macrohistory Database, http://www.nber.org/databases/macrohistory/rectdata/13/m13014.dat.

the legal ratios, as shown in Figure 8.8. Until 1919, the previously stipulated coverage obligations were maintained after each increase in the issuance limit, and coverage of 100 per cent in gold was stipulated for the total new issuance.[42] When the war ended, the purchases of gold were reduced and hence the rules for reserve ratios were changed.

Despite the fact that the Bank of Spain had enough reserves to sustain the stability of the peseta exchange rate, monetary policy was not conducted in way that would have led to the adoption of the gold standard. As shown in Figure 8.9, the official discount rates were changed only occasionally and, for many years, the Spanish interest rates remained similar to – or even, at times, below – those of the major countries, although the balance of payments on the current account was persistently closed with deficits. Figure 8.9 portrays both the official discount rate (for commercial transactions) and the rediscount rate (set at one point below the official rate which was applied only to financial institutions).[43] As was the case in the previous period, the profitability of the issuing bank was not maintained as a result of high interest rates.

Table 8.2 Legal maximum for banknotes issued by the Bank of Spain, 1914–31

		Minimum reserves	Min. Gold – Max. Silver	Maximum issuing/ Min. Capital
Decree 5.8.1914	up to 2000	according to earlier regulations		2500 (notes < 16 2/3 paid up-capital)
	beyond 2000	100%		
Decree 10.3.1917	up to 2500	according to earlier regulations		3000 (notes < 20 paid up-capital)
	beyond 2500	100%	100% gold	
Decree 6.8.1918	up to 3000	according to earlier regulations		3500 (notes < 23 1/3 paid up-capital)
	beyond 3000	100%	100% gold	
Decree 2.1.1919	up to 3500	according to earlier regulations		4000 (notes < 26 2/3 paid up-capital)
	beyond 3500	100%	100% gold	
Decree 27.12.1919	up to 4000	according to earlier regulations		4500 (notes < 30 paid up-capital)
	beyond 4000	100%	100% gold	
Decree 7.10.1920	up to 2000	46.5%	28.5%–18%	5000 (notes < 33 1/3 paid up-capital)
	beyond 2000	70%	60%–10%	
Law 29.12.21	up to 4000	45.5%	40%–5%	5000 (notes < 28 1/4 paid up-capital)
	beyond 4000	60%	50%–10%	
Decree 6.5.1931	up to 4000	45.5%	40%–5%	5200 (notes < 29 2/5 paid up-capital)
	beyond 4000	60%	50%–10%	
Decree 27.5.1931	up to 4000	45.5%	40%–5%	6000 (notes < 33 9/10 paid up-capital)
	beyond 4000	60%	50%–10%	

Source: Data from Martínez Méndez (2005: table 15.2). There was no legal limit on issue with regard to the bank's social capital in this period, and as such the above figures are an estimate.

The official money rates were changed twice, first in 1920–21 and second in 1928–31. In both instances, the increases came as a response to the depreciation of the peseta exchange rate. The initiative was taken by the Treasury, which saw the fall of the currency as an economic and political failure, and a setback to its desire formally to join the gold standard club of nations. The government knew that the rates had to rise in order to defend the peseta and to keep it stable thereafter. However, this policy met with the hostility of the Bank's board of directors, reluctant

to approve any rise because they thought it would reduce its commercial businesses and, hence, the level of its annual profits. Unconcerned with the stability of the exchange rate, and even less so with the government's aim to return to gold convertibility, the Bank tried to block or to minimize the increase in the discount rates. The Treasury had the upper hand in 1920 and, despite its resistance, the Bank had to give up and agree to a 1 percentage point rise. On the contrary, in the changes introduced in 1928–30 the board of the Bank was able to halve any of the government's proposed rates increases.[44] Nevertheless, it is also true that the poor fiscal situation of the Treasury constrained its ability to implement a restricted monetary policy. Unable to balance the budget, high interest rates meant an increase in the cost of borrowing. Hence, the desire to stabilize the currency and adopt the gold standard at the 1868 parity, which required some degree of price deflation by raising the cost of money, was in conflict with the always pressing need to finance the budget deficit. In fact, the adoption of the gold standard would have first required a drastic reduction in public expenditures and/or a radical tax reform in order to increase public revenues. Some minor fiscal changes were made but they were not sufficiently substantial to solve the intractable budget deficits.[45]

The attempt to stabilize the peseta exchange rate thus was found less in the implementation of a firm and orthodox fiscal and monetary policy, and more in the introduction of administrative devices. In October 1919, forward transactions were banned and some foreign financial transactions were subjected to a system of previous authorization.[46] Administrative intervention was extended in 1924, as the foreign exchange operations that could be freely performed became more limited. There then followed a short period during which the peseta appreciated and a wave of optimism led officials to believe that it was possible to adopt the gold standard at the historical parity. However, no monetary and fiscal policies were put in place in order to prepare the economy for formal stabilization. The reversal began in mid-1928, when the peseta started to depreciate again. The Ministry of Finance reacted by establishing a new body, the Comité Inteventor del Cambio (CIC), to support the external value of the peseta. It was also the first step toward a more complete system of exchange control that came into place in 1930.

According to the Banking Act of 1921, which had empowered the government to intervene in the exchange market and mandated the Bank of Spain to assist in any attempt to defend the peseta rate and to share the expenses in doing so, the CIC was endowed with funds provided by both the Treasury and the Bank in equal proportion. However, instead

of committing part of its huge gold reserves (which would have been the most reasonable attitude), the board of the Bank invoked legal and statutory restrictions and forced the CIC to obtain a foreign loan in London to be used to intervene to shore up the peseta. When the CIC consumed the loan and no more funds were forthcoming, the value of the peseta plummeted. The intervention was costly and the loan was not repaid until the mid-1930s.

This later episode highlights once again the peculiar character of the Spanish issuance institution. Despite enjoying a government franchise and the monopoly of issuance, the directors and the shareholders of the Bank considered the 'institution' a purely private concern. Therefore, the Bank had to be run as any other financial company. Gold, as did any other assets in the balance sheet, belonged to the shareholders, not the Treasury, and should not be committed to any monetary policy adventure. For the Bank, its gold reserves were not a policy instrument that the Treasury could unrestrictedly employ. Gold was not there in the vaults of the institution even to assure the convertibility of its banknotes, but simply to maintain the confidence of the public in the Bank's liquidity and solvency. The evidence seems to leave no doubt: by the early 1930s, the Bank of Spain was still far from assuming the responsibilities of a central bank insofar as monetary policy is concerned. It also highlights that, without the cooperation of the bank of issuance, it would have been extremely difficult to introduce the gold standard and to sustain the stability of the peseta exchange rate.

The evidence of the interwar years also shows the contradictions between the policies followed by the government. Monetary policy (because of the opposition of the Bank of Spain) and fiscal policy (because the Treasury's lack of will to undertake radical tax reform) were inconsistent with the declared goal of adopting the gold standard at the ideal 1868 parity. Such a goal would have required a substantial degree of deflation, at which serious attempts were never made. The alternative to deflation would have been to opt for a more realistic parity. However, devaluation was never considered. Instead, a sort of escape route was attempted to sustain the value of the peseta: the introduction of exchange controls, although this policy was in contradiction to the adoption of the gold standard, based on the free movement of capital.[47]

The enormous reserves of gold accumulated during World War I were of no use at all in backing the government intention to join the gold standard. The Bank of Spain resisted any attempt made by the Treasury to use them to defend the exchange rate of the peseta. The Bank of Spain preferred to immobilize its gold in its vaults, and to hold reserves

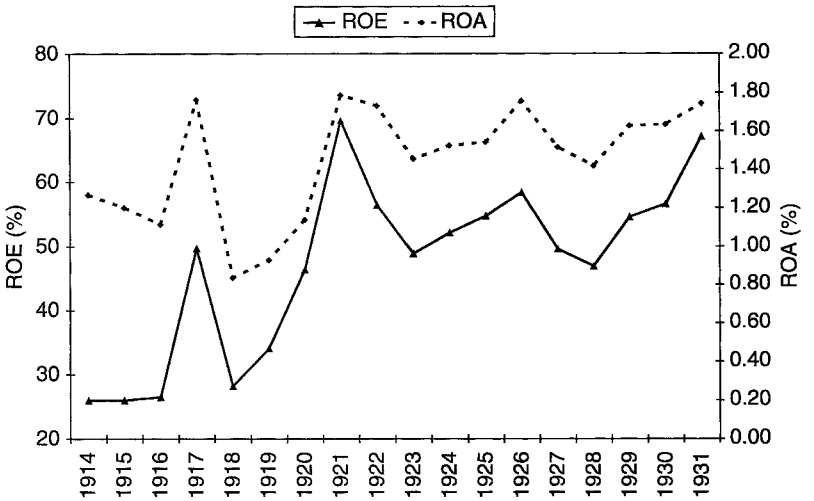

Figure 8.10 Bank of Spain, ROE–ROA (%), 1914–31
Source: ROE (%) = profits/owner's equity. ROA (%) = profits/total assets. Owner's equity from: Bank of Spain balance sheets, Minutes of the Shareholders' General Meetings, 1914–1931, Archive Bank of Spain. Total assets in Martínez Méndez (2005, Table 16.3). Profits from: Minutes of the Shareholders' General Meetings, 1914–1931 (appendix C), Archive Bank of Spain.

in excess of the already high level of reserve requirements set by the government. This way of ensuring credibility was very costly in terms of profits. However, the Bank's shareholders were not affected, as a strategy begun in the late nineteenth century to dissociate the issuance of notes from the Bank's level of capital was continued during this period.

The behaviour of the two ratios that show the financial returns of the Bank's operations and activities between 1914 and 1931 is shown in Figure 8.10. The ROA fluctuated substantially during the war years and thereafter remained relatively stable at around 1.7 per cent. On the other hand, the ROE increased to over 50 per cent after 1920 and, from 1923 onwards, its average value was at about a remarkable level of 60 per cent. The Bank of Spain was, indeed, profitable to its shareholders who, on average, received a 25 per cent return between 1914 and 1931, as can be seen in Figure 8.11. This percentage was well above that obtained by the owners of the other Spanish financial institutions.[48] Even in the 1920s, the Bank of Spain did not assume its role as a central bank. The attitude of the government to monetary matters was also inconsistent, because its inability to address the problem of insufficient public revenues was

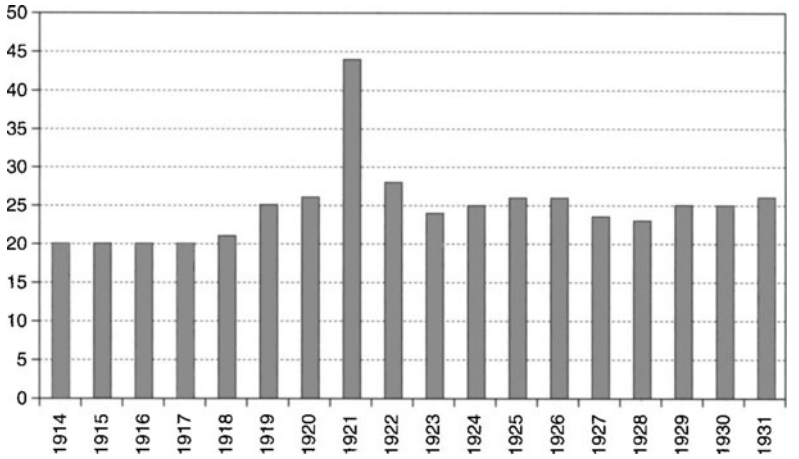

Figure 8.11 Bank of Spain annual shareholder return (%), 1914–31
Source: Shareholder return = dividend/paid-up capital. Bank of Spain balance sheets, Minutes of the Shareholders' General Meetings, 1914–1931, Bank of Spain Archive.

not compatible with its public concern over the exchange rate. In any event, the institutional structure made it impossible to overcome the agency problems that the government had with its banker, despite the Bank's gradual loss of independence. The beneficiaries were the Bank's shareholders.

Conclusion

There is no trace of a formal decision to interrupt the convertibility of the Bank of Spain's banknotes into gold in the minutes of the board of directors. However, the Bank no longer redeemed its notes in gold after the summer of 1883. The Bank's gold reserves reached a maximum of 125 million pesetas in 1881, and then fell sharply to 50 million pesetas in 1882. The drop was caused by a combination of factors, including the European financial crisis of the early 1880s (which reduced the levels of foreign investment) and a deterioration of the balance of payments on the current account. An ill-advised operation by the Treasury to reduce and to alter the maturity of the outstanding debt also contributed to the loss of gold.[49] What the minutes of the board for the years 1882 and 1883 reveal is the concern of the directors of the Bank for the lack of bullion (both gold and silver) on its balance sheet, as well as the concern

that the public might refuse to accept the Bank's notes as they saw that that the institution was losing its gold.[50]

No references were made to ending gold convertibility at the meetings of the Junta Consultiva de la Moneda, an official consulting body on monetary matters. The Junta had recommended the adoption of the gold standard as early as 1876, but no government decision had been taken by 1883. When gold convertibility was de facto suspended, the members of the Junta maintained absolute silence. In the few meetings of the Junta after 1880, the question of the lack of gold and silver coins in circulation was discussed, as well as the outflows of (gold) bullion due to the imbalance between the metallic ratio at the Madrid Mint and the market metallic ratio, which encouraged the exportation of gold. However, the Junta made no policy recommendation and remained silent about the fact that the Bank of Spain was losing its reserves, which led it, first, to restrict and then end the convertibility of its notes into gold.[51]

Although it is a well-known historical fact that many countries' currencies which were on the gold standard did not introduce money convertibility, the fact of the matter is that they were somehow able to maintain the stability of their respective exchange rates. Unlike most European currencies, the exchange rate of the inconvertible peseta against gold, and hence against the major currencies, fluctuated widely. This is apparent in Figure 8.1. The nominal exchange rate of the peseta varied a great deal, from 25.6 to the pound sterling in 1883 to a peak of 39.2 in 1898, and then back to 27.1 in 1913. During the 1920s, the Spanish authorities made various attempts to stabilize the peseta's exchange rate and to peg it to gold. Figure 8.1 shows that they failed and that, against the broader international trend, the Spanish currency remained off gold. The peseta experienced phases of appreciation, followed by phases of depreciation, which became particularly acute after 1928.

The minutes of the board of directors of the Bank of Spain suggest that the institution refused fully to accept its obligations as a central bank. First, it only acted as a lender of last resort under government pressure when successive banking crises jeopardized the stability of the financial system.[52] Second, the Bank's directors never considered the defence of the exchange rate to be one of their duties. Both before and after 1914, their main concern was maximizing profits and the amount of dividends to be paid out to shareholders. Private interests prevailed over the public interest. Moreover, when the stabilization of the peseta was discussed in official circles, the Bank strongly argued that the gold parity to be adopted should be that set in 1868, regardless of the circumstances and the economic changes that had taken

place since that date. Any lower parity, which was also unpalatable to the Ministry of Finance, was opposed by the Bank despite the fact that it might have eased the adoption of the gold standard and stimulated foreign trade.

Spain's monetary experience is exceptional. All European countries were members of the gold standard club at one time or another. The gold standard was also adopted in America and in many Asian nations. The Bank of Spain was always willing to guarantee the silver convertibility of its paper notes. However, the stability of the exchange rate of the peseta was not among its concerns. All Spanish governments wanted the introduction of the gold standard, and deplored the instability of the peseta. Time and again, plans were made to join the international monetary system. However, the Treasury's fiscal policy was systematically inconsistent with such a goal. As stated by the renowned Comisión del Patrón Oro in its famous 1929 report, monetary stability was sacrificed at the altar of the public budget deficit. Spain's historic detachment from the world monetary system cost the country dearly in terms of both its debt burden and GDP growth: two questions that warrant further research.

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9

Monetary Policy in Southeast Europe on the Road to the Gold Standard

Kalina Dimitrova and Luca Fantacci

A vital element in the institutional set-up of a new state is the establishment of the monetary system. The primary functions of a sound monetary system are to provide a stable currency for foreign trade and, at the same time, a sufficient currency for domestic transactions and payments. Towards the end of the nineteenth century, most countries, new and old, of the centre as well as of the periphery, increasingly conformed their monetary systems to the rule of the metal standard. According to this rule, full-bodied coins of precious metal were to be used as means of international settlement, whereas fiduciary currency, whether in the form of banknotes or of coins with a face value higher than the intrinsic value, were commonly used domestically. Therefore, the basic principle of the metal standard, which identified the unit of account with a definite quantity of precious metal of a specified weight and fineness, was partially derogated, by the practice of fractional reserves, in order to allow national monetary authorities to adjust internal money supply to the needs of domestic circulation. However, this derogation to the metal rule had a limit dictated by its purpose: the issue of fiduciary money should not exceed the needs of the population for local transactions. As long as it managed to abide by these rules, a country could enjoy a relative monetary stability.

The stability of the value of money is crucial to the stability of financial relations. The pursuit of a stable measure for exchanges is best accomplished when it is entrusted to an authority which does not itself have financial interests. The Latin Monetary Union (LMU) had been formed in 1865 by France, Belgium, Switzerland and Italy with the purpose of ensuring stability and avoiding competitive debasements, by establishing a common standard for the coins of all four states. The fineness of the 5 franc piece (5 lire in Italy) was set at 0.900, while lesser

coins were to be minted at 0.835. This, of course, involved a seigniorage, and hence a possible incentive to overmint small coins and flood neighbouring countries. In order to avoid this, the issue of small coins was limited, for each country, at the value of 6 francs per inhabitant. Following these rules, the LMU managed to secure a reasonable stability for its members, especially in the first years after its establishment, when it was enlarged to include the Papal States and Greece. It was subject to great stress in 1871, when the newly founded German Reich shifted from bimetallism to the gold standard, flooding world markets with over 500 million francs of silver.[1]

Bulgaria was established as a modern independent state in 1878 and it soon introduced its own monetary system, designed along the lines of the metal standard. In fact, although Bulgaria never became a formal member of the LMU, it conformed broadly to the same principles, in an attempt to benefit from the stability of a wider and stronger economic area.

However, for roughly three decades following its independence, the Bulgarian currency was afflicted by agio, i.e. by a discount on silver coins that were received on the market at a lower value compared with the official parity fixed in terms of the unit of account, and hence were depreciated in relation to the stable gold coins. This discount was, at times, quite high and volatile, fluctuating between 0 per cent and over 13 per cent from 1882 to 1907. It implied uncertainty in the value not only of money hoarded, but also, and more importantly, of revenues and incomes fixed in nominal terms, of money contracts, of credits and debts.

The present chapter investigates the reasons for the monetary and financial instability implied by the agio experienced in Bulgaria, with a view to highlighting the respective roles played by the issuing bank and by the government. The first section presents the monetary regime that was established in Bulgaria after independence in 1878; it describes the emergence, the variation and the eventual disappearance of the agio before the outbreak of the Balkan wars in 1912. Furthermore, it identifies a significant cause for those fluctuations in the circulation of fiduciary silver currency over and above the limits set in countries with similar regimes. The second section questions whether the excess issue of silver currency may be ascribed to the autonomous initiative of the issuing bank and argues that, in fact, it fell rather under the responsibility of the Ministry of Finance. The third section provides empirical evidence of the fact that the main driving force for fiscal interference in monetary policy was the need to finance public expenditure related to the construction and consolidation of the newly established state.

Financial stability

The establishment of the Bulgarian monetary system occurred at a time in which the very meaning of money was being redefined at an international level, with the diffusion of the gold standard. Within this framework, the possibility of attaining monetary stability in peripheral countries was increasingly associated with the decision to peg their currency to an external reference. Having inherited it from the Ottoman times, Bulgaria continued to practice the bimetallic system. Although Bulgaria was never a member of the LMU, the monetary legislation of 1880, which established the monetary system in the country, incorporated the main principles of the LMU. The Bulgarian lev was established as a national currency with a value equal to the French franc at an exchange rate of 1:1. The legislation also adopted a bimetallic ratio (BMR) between gold and silver of 1:15.5, in conformity with the LMU. With respect to paper money, the law stated that all banknotes in circulation should be backed by no less than one third of gold reserves.

The first monetary legislation in Bulgaria was, however, somewhat looser than the LMU, in that it accepted as legal tender not only all LMU currencies, but also the Russian silver ruble and the Ottoman lira.[2] Other currencies which were not issued in compliance with the LMU (such as the Austrian guilder, the Serbian dinar and the Romanian leu) were also allowed to circulate freely in the country, but they were not legal tender, and the exchange rate at which all government institutions accepted them was determined by the Ministry of Finance in the tariff.

Since the 1870s, however, LMU adopted several reforms with a view to maintaining financial stability in response to the permanent devaluation of silver on international markets.[3] There was one clause on the limitation of small denomination coins (predominantly silver) to '6 francs per inhabitant'.[4] This clause was very important for the maintenance of the bimetallic system until 1878, when major LMU countries eventually went on gold and agreed on the final suspension of the minting of silver coinage. Ironically, this happened two years before the monetary legislation was promulgated in Bulgaria. The bimetallic standard in Bulgaria was thus born posthumously.

The Bulgarian monetary legislation, in other words, did not incorporate LMU principles as they stood in 1878, but rather as they had been first defined in 1865. Among other things, it failed to set an explicit constraint on silver coinage and, as several contemporary economists pointed out, 'this turned out to be the major weakness of the monetary

system in Bulgaria', resulting in the appearance of a permanent agio from 1882 until 1906.[5]

Various factors at different times caused the excessive amount of silver money in circulation in Bulgaria, which in turn lead to the persistent agio.[6] Following the chronology of the events, the main reason for the wide circulation of silver foreign coins was the imposed overvaluation of the Russian silver ruble, which was to be exchanged against 4 French francs (Bulgarian levs). This overvalued exchange rate was enforced by the provisional Russian administration immediately after the war of 1877–78 in Bulgaria, Serbia and Romania.[7] Soon after their liberation in 1880, however, Romania demonetized the Russian silver ruble to the price of 3.5 francs, while Serbia decreased the exchange rate to 3.3. In 1882, Turkey demonetized all foreign silver coins, withdrawing them from circulation. Therefore, offering the best price for foreign silver coins in the neighbourhood, Bulgaria got flooded with them and a persistent agio appeared.[8] After several unsuccessful attempts to limit their circulation, all foreign coins were eventually demonetized by mid-1887.

At that moment, therefore, there were only Bulgarian silver coins in circulation, minted by the fiscal authorities. This should have been, in itself, a factor of stability. However, annual reports of the issuing bank and several studies provide evidence that silver coinage was used for budget financing.[9] Keeping the official parity between silver and gold unchanged at 1:15.5, the seigniorage from silver coinage varied between 20 to 60 per cent, according to the progressive depreciation of silver on international markets (from 1/20 to 1/40 in relation to gold between 1886 and 1911). Being accepted for the payment of all taxes at the Ministry of Finance and being exchanged for gold at the issuing bank at the official parity, Bulgarian silver coins were widely used for transactions on the domestic market, despite the fact that they were not full-bodied coins (i.e. their face value was much higher than the intrinsic value).

After having made several unsuccessful attempts to eliminate the agio, and nine years after having acquired the legal right to issue silver-backed banknotes, the Bulgarian National Bank eventually started printing silver-backed banknotes in 1899. Applying the same coverage ratio that had been set for gold reserves, silver holdings were kept equal to one third of the value of notes in circulation, leaving the National Bank with ample scope for printing these banknotes, the excess of which was often motivated by budgetary needs.[10] This, however, contributed to the successful supply of banknotes in circulation and to the 'unnoticeable' transition to the gold standard in 1906, when the agio of silver against gold disappeared.[11]

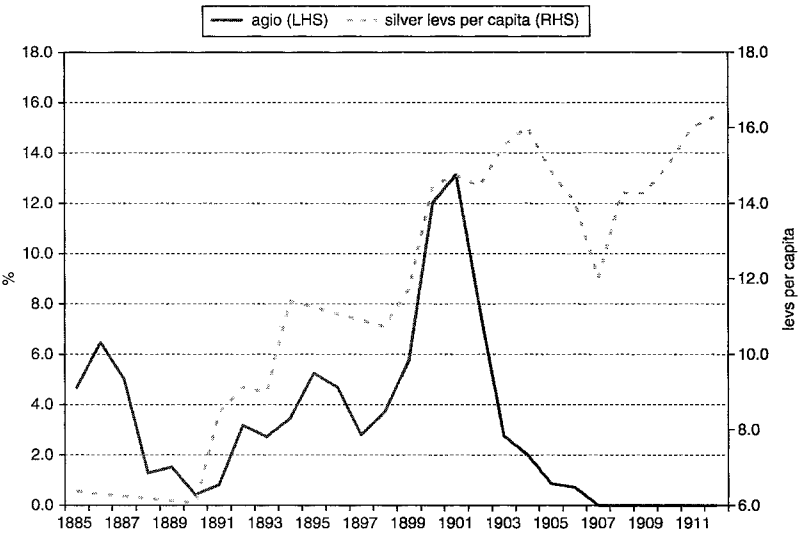

Figure 9.1 Agio and silver levs per capita in Bulgaria, 1885–1912
Source: Bulgarian National Bank annual reports and statistical yearbooks, various issues.

Based on the available information and data, we managed to construct the indicator 'silver levs per capita', which includes both silver coins and silver-backed banknotes. If we compare its development with the behaviour of the agio (Figure 9.1), it is obvious that both series move broadly parallel, suggesting a positive relationship, except for the period until 1888 when foreign silver coins were allowed in circulation, and after 1906 when the agio between gold and silver was eliminated.

Although the National Bank began to report the agio in October 1885, the entire period up until 1888 is difficult to analyze because of the lack of data on foreign silver coins in circulation.[12] 'Silver levs per capita' includes only Bulgarian silver money per inhabitant and, despite the fact that it is above the LMU limit of 6 per capita, it is only an underestimated proxy for all silver coins in circulation. This may well be the reason why the agio increases to over 6 per cent, even though the number of silver levs per capita is relatively low. In any case, a more robust relationship between the two indicators can be studied from 1888 onwards.

From 1888 onwards, the agio was very dynamic reflecting the variations of silver money in circulation (Figure 9.1). The lowest value of the agio, 0.4 per cent, was recorded in 1890 when silver levs per capita reached a minimum of Lev 6.14. Not surprisingly, this coincides with the declaration by the government (strongly encouraged by the National Bank) of

its willingness to turn to gold, following the bandwagon effect induced by changed international sentiment towards the gold standard, particularly in neighbouring countries. The government, however, did not cease minting silver coinage, and all efforts and hopes to eliminate the agio by joining the gold standard club were in vain. In turn, the National Bank decided to change its strategy to fight against the agio. Having witnessed the experiences of neighbouring Serbia and Romania,[13] it insisted on introducing silver-backed banknotes with a view to enhancing the banknotes in circulation, although it was aware that this would increase the agio. As a compromise, in 1891, instead of introducing the gold standard, as had been done in Romania, the National Bank was granted the legal right to issue silver-backed banknotes, which it had to wait nine years to exercise.

In the meantime, in 1897, the National Bank made another attempt to introduce the gold standard. It was motivated by the successfully established gold-metallism in Austria-Hungary in 1896,[14] which represented 20 per cent of Bulgarian foreign trade, and by two successive years of positive trade balance.[15] As a result the agio decreased to 2.8 per cent, but the efforts ended with a project law which was never put into practice.

In the face of the upcoming economic crisis in 1899 (related to the outbreak of the Boer War), the National Bank was restricted to converting gold-backed banknotes into silver, plus a daily premium for gold. Instead of making efforts to restore the convertibility of gold-backed banknotes, it finally began to print silver-backed banknotes in late 1899. In 1901, the agio hit a peak of 13.2 per cent (annual average), just two years after the issuance of the silver-backed banknotes as envisaged by the National Bank. Introduced as a temporary anti-crisis measure, the de facto silver standard lasted for almost three years.[16] Although the amount of silver levs per capita was consistently above the LMU requirement, the close correlation between the violation of the 'silver clause' and agio was broken as from 1902. This may well be explained by the extremely favourable balance of payments recorded in several successive years, as well as by the foreign loans contracted with a government commitment to cease minting silver coins. This seems to suggest that the actual depreciation of silver coins on the market was not merely a matter of quantity, but also a matter of confidence (as with all currencies that have a fiduciary value). Soon after the situation improved; the convertibility of gold-backed banknotes into gold was restored.

For the purpose of providing an estimate of the relationship between the silver levs per capita and the observed agio, we proceed with running

an OLS regression (equation 9.1)[17] after adjusting the series by taking first differences in order to obtain stationarity:

$$\begin{array}{lllll} \text{AGIO} = -0.49 + 1.30\ \text{SLPC} - 5.88\ \text{D\_1903} & & & & (9.1) \\ \text{(t-stat)} & (-1.12) & (2.14) & (-9.05) & \\ R^2 = 0.45;\ \text{Adjusted } R^2 = 0.38 & & & & \end{array}$$

The econometric estimation suggests that an increase of 1 silver lev per capita above the level of 6 (SLPC = silver lev per capita – 6) is estimated to lead to a 1.3 percentage point increase of the agio. A dummy variable was introduced to account for the break in the regularity between the two indicators in 1903, when the agio was undergoing a persistent descending trajectory while silver levs per capita continued to increase. The constantly decreasing agio was favoured by the inflow of gold as a result of the large trade surpluses since 1902, as well as the foreign debts received in gold-backed currencies.[18] Interestingly, silver-backed banknotes continued to be printed (as well as gold-backed banknotes) to compensate for the decreased volume of deposits at the National Bank due to the decreased interest rate on deposits.[19]

As an intermediate conclusion, therefore, we find empirical evidence supporting the importance of the violation of the 'silver clause' as a cause for the agio in Bulgaria. In fact, excessive silver minting and printing of silver-backed banknotes at a later stage, which was constantly above the LMU reference rate of Lev 6 per inhabitant, directly affected the agio throughout the whole period when Bulgaria employed the bimetallic system.

Monetary autonomy and policy

In our previous studies, we have investigated the issue of monetary autonomy regarding the issuing bank's capacity to maintain an official BMR different from the international BMR, and hence to maintain bimetallism despite the slight agio, in the face of the diffusion of the gold standard, not only in the European centre, but also in the neighbouring periphery.[20] For the purpose of the present study, however, we will analyze monetary autonomy in the context of the relationship between monetary and fiscal authorities (i.e. in the more traditional sense, which refers to the autonomy of the issuing bank from the government).

Given that the excessive silver money in circulation caused the deviation of the actual BMR from the official BMR, we are interested in studying what the issuing bank could do and did to eliminate the financial

weakness in the Bulgarian monetary system: the agio. Determining monetary autonomy as 'the issuing bank's ability to manage money in circulation', we should first estimate what was really within its power and reach. Therefore, a decomposition of the money supply, taken in its narrowest concept of coins and banknotes in circulation, should allow us to investigate the extent to which different components were the National Bank's responsibilities and liabilities following the chronology of events.

Minting, in Bulgaria as everywhere else, was an exclusive privilege of the government, and in particular of the Ministry of Finance, whereas banknotes were issued by the issuing bank and were, hence, its liabilities. While silver and gold coins have an intrinsic value corresponding to the metal they contain, banknotes have a purely nominal value and, under a metal standard, they circulate only as a substitute for the metal, and should therefore be covered by reserves. If we exclude the copper coins (*stotinki*) minted in 1881, which were of smaller than half-lev denomination, the first Bulgarian levs to be minted were silver coins, issued in 1882 for an overall amount of Lev 8.5 million. The National Bank only began to issue gold-backed banknotes in 1885 in accordance with LMU standards, but they did not obtain proper circulation for several reasons. First, they lacked credibility among the public, who had recent memories of the devalued Ottoman banknotes (*kaime*). Another reason was the existing agio, which made it more convenient to dispose of silver coins rapidly in the settlement of daily transactions. Bulgarian gold coins were only minted in 1894, and they quickly disappeared from circulation as people held on to them as a store of wealth and did not use them for regular transactions due to their large denominations. The total of gold coins was Lev 3 million and this figure did not increase until 1912, when a further Lev 2 million were minted in gold coinage. Therefore, it was argued that Bulgaria had, de facto, a silver standard.[21] The National Bank only started to print silver-backed banknotes in 1899, which, together with the gold-backed banknotes, eventually obtained a proper circulation. This enabled the issuing bank to manage the process of money creation.

The chronology of the different types of money issued at various stages allows us to study the way in which the composition of money circulation changed over time (Table 9.1), analyzing who was responsible for the money supply at different periods: whether the responsibility lay with the Ministry of Finance for minting coins or the National Bank for issuing banknotes.

The decomposition shows that the Ministry of Finance had a direct responsibility for creating 97 per cent of the money supply throughout

Table 9.1 Decomposition of money in circulation in Bulgaria, 1885–1912

	Silver coins	Gold coins	Gold banknotes	Silver banknotes
1885–1893	97		3	
1894–1898	90	6	4	
1899–1905	61	4	13	22
1906–1913	37	3	44	16

Note: Data is reported in per cent (shares, %).
Source: Bulgarian National Bank annual reports and statistical yearbooks, various issues.

the whole period from 1882 until 1898, since silver coins dominated the money in circulation (averaging 95 per cent of total money in circulation over this period). The National Bank's liabilities reached barely 3 per cent of the total money supply, due to difficulties with the circulation of banknotes. When it began printing silver-backed banknotes, the National Bank took over a share of 35 per cent of total money supply, whereas the share of coins in circulation decreased accordingly, falling to 65 per cent between 1899 and 1905. With the transition to the gold standard in 1906, the issuing bank enhanced its role in determining money supply by increasing the share of banknotes in circulation to 60 per cent, while the Ministry of Finance liabilities were limited to around 40 per cent of total money creation.

Regarding monetary autonomy, the empirical results provide evidence that the National Bank was obstructed in its ability to manage money in circulation as coins (issued by the the Ministry of Finance) dominated money supply. Moreover, silver coins prevailed, covering 100 per cent to 51 per cent of the process of money creation until 1906. Therefore, it was very difficult for the National Bank to fight against the agio, and whenever it intervened on the market by purchasing silver coins, it was always at the cost of a drastic decrease in its gold reserves.[22] Even though the monetary authorities were aware of this and cautioned that the issuance of silver-backed banknotes could further increase the agio, National Bank officials insisted on acquiring the right to issue such banknotes with a view to increasing their ability to manage money in circulation and, hence, to take effective measures against the agio.[23] In fact, the printing of silver-backed banknotes did increase the agio to its maximum of 14 per cent in October 1901, but at the same time it contributed to the proper circulation of both silver and gold banknotes.[24] Being responsible for over 35 per cent of total money supply, the National Bank was in a much more favourable position to manage money in circulation and to implement the policy measures that were needed to eliminate the

agio between silver and gold. Besides, as a response to the gold inflow due to positive trade balances and foreign debts, the National Bank implemented a policy of replacing large denomination silver-backed banknotes with gold-backed notes, which eventually resulted in using silver-backed banknotes for small transactions only (Bulgarian National Bank, 1999: 323).

With the de facto establishment of the gold standard in Bulgaria in 1906, leaving silver coins and silver-backed banknotes of a lesser denomination than Lev 20 in circulation for small transaction purposes only, the National Bank was to face 'another kind of agio' (i.e. the devaluation of the banknotes with respect to their precious metal equivalent at the outbreak of the Balkan Wars in 1912, just one year before the end of the gold standard era). This, however, was not viewed by issuing bank officials as a serious concern; it was, rather, regarded as 'manageable', provided that the issuing bank's liabilities dominated the total value of money in circulation at that time.[25]

Fiscal interference

As the decomposition of money in circulation reveals that 74 per cent of total money was the responsibility of the the Ministry of Finance, an oversimplified argument shows that this represents the degree to which fiscal authorities interfered in monetary policy.[26] We would like, however, to provide a reliable estimate of the extent to which budget deficits triggered money creation.

Minting provided net revenue to the budget, equal to the difference between the face value of the coins and their cost of production inclusive of the cost of the metal (seigniorage). In the case of gold coins, since the face value was equal to the intrinsic value, minting would yield a slightly negative seigniorage, reflecting the costs of the minting process itself (brassage). As a consequence, despite their lower denomination, and hence the higher impact of brassage, it was the minting of silver coins rather than gold that could be more effectively bent to the purpose of increasing budget revenues. Hence, silver coinage should be expected to be closely related to budgetary needs.

With respect to banknotes in circulation, the fiscal authorities could not derive a direct benefit from their issue. In fact, the fiscal authorities granted the issuing bank the privilege of printing banknotes in exchange for cheaper financing. Not by chance, government credit from the National Bank became permanent and totalled a conspicuous amount soon after the National Bank started to print silver-backed banknotes

(according to the composition of money in circulation, the share of silver-backed banknotes was 22 per cent to 16 per cent in gold-backed banknotes from 1899 until 1906). In fact, gold-backed banknotes were strictly limited by the reserves, since the National Bank never allowed the cover ratio to go below one third. Indeed, the National Bank kept gold reserves above the necessary coverage level as a buffer against the agio and for the Treasury's foreign payments.

When silver-backed banknotes appeared, their backing was also set at one third of silver holdings. In 1903, however, the coverage of silver-backed banknotes fell slightly below the reserve ratio (29.9 per cent) and, when the international financial community inquired on this issue, it became obvious that the National Bank printed excessive silver-backed banknotes driven by the needs of the fiscal authorities.[27] With a view to limiting the issuance of silver-backed banknotes, the new legislation regarding the National Bank fixed coverage for silver-backed banknotes at 50 per cent in silver and observed this until the collapse of the gold standard. Hence, we can argue that it was also silver-backed banknotes which were closely related to budget financing.

Combining the two – silver coins and silver-backed banknotes, we come up with an indicator 'silver levs in circulation' as a proxy for the money creation driven by budgetary financial needs. Besides the fact that 'silver levs in circulation' represented 83 per cent of the total money in circulation in the period 1885–1912, we provide econometric estimates of whether and to what extent the money supply, and particularly the total of silver levs in circulation, was determined by the development of budget balances (equation 9.2):[28]

$$\begin{array}{llll} SLC = 0.008 + 0.56\ BD - 0.23\ D\_1886 & & & (9.2) \\ \text{(t-stat)} \quad (0.48) & (-3.24) & (-6.20) & \\ R^2 = 0.55;\ \text{Adjusted } R^2 = 0.51 & & & \end{array}$$

The econometric exercise of running an OLS regression suggests that a 1 percentage point widening of the budget deficit (BD) led to a 0.56 percentage point increase in money creation, particularly in silver levs in circulation (SLC).[29] There is one dummy variable for 1886 (D_1886) which enters the equation at a significant level. In fact, this is the year of the unification of the Kingdom of Bulgaria and Eastern Rumelia, which was followed by a short-lived war. This was the only war that did not require any extra budget financing – readily provided by money creation in other circumstances.[30] The econometric results could also be

interpreted as showing that more than 50 per cent of money in circulation was created to provide extra budget revenues.

Conclusion

At the time of the diffusion of the gold standard, Bulgaria opted for the establishment of a bimetallic standard. In doing so, it conformed to the model of the LMU, adopting all its major provisions, except for the clause limiting the issue of silver coins to '6 francs per inhabitant'. This clause, however, turned out to be crucial for the stability of bimetallic systems, particularly at that time. Ignoring the limitation on small denomination coins (predominantly silver) caused a financial weakness in the practised standard, resulting in the appearance of a permanent agio.

What could the National Bank do to maintain financial stability through money management? Apart from its de jure absolute dependence on the the Ministry of Finance for major monetary policy decisions, the National Bank was very constrained in the performance of its basic function (management of money supply) when coins (issued by the fiscal authority) dominated the money in circulation (corresponding to an average of 74 per cent of the total money supply until 1913).[31] As from 1899, banknotes in circulation obtained a significant share in total money creation with the introduction of silver-backed banknotes. Although the latter were closely related to fiscal financing, the National Bank gained much greater control over the money in circulation, and thus eventually managed to eliminate the agio and to establish the gold standard in Bulgaria in 1906.

Excessive silver minting and the printing of silver-backed banknotes was clearly determined by the needs for extra budget revenues.[32] Through coinage, however, fiscal authorities also supplied the market with the necessary means of payment. Therefore, by applying econometric techniques, we have come up with a more precise estimation of the fiscal interference in money creation: according to these estimates, a significant part of money creation appears to be triggered by fiscal objectives.

The whole story may be summed up briefly in the following terms: superseding an international financial rule such as the silver clause of the reformed LMU, the Bulgarian government was able to finance its budgets by minting excessive amounts of silver coins and by obtaining credit from the issuing bank against the right to issue silver-backed banknotes. This put a constraint on the issuing bank's ability to manage money circulation effectively and to fight the agio, at least until

the supply of currency for domestic circulation was eventually met by issuing banknotes.

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Part III
Asia and South America

10

Domestic Public Debt, Gold Standard and Civil Wars: Institutional Interconnections in Nineteenth-Century Colombia

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During the nineteenth century, the newly-born nations of Latin America strived to leave behind their colonial legacy and join capitalism. The results were uneven; while some nations, such as Argentina, witnessed substantial economic growth, others hardly reaped the benefits of the world economic expansion. Colombia was in the latter group. Studies of post-independence Latin American economies emphasized for several decades commodity exports and industrialization as the main sources in explaining economic take-offs. More recently, the analysis of institutional factors influencing these developments has thrived. Yet, the performance of monetary policy and fiscal institutions has received little attention, and there are relatively few works, except for studies on Mexico and Brazil.[1] Insofar as economic policy is a source of stability or instability, understanding the institutions through which it is designed and implemented provides a more complete view of the relative success or failure of these nations in their race for growth.

Originally, my interest was in explaining the persistence of fiscal deficits in the nineteenth-century Colombian economy. However, a deeper look revealed the pivotal importance of domestic public debt in economic policymaking. The reconstruction of data series, detailed records and analysis can be found in Rojas (2000, 2004). This evidence, together with key ideas from the new economic institutionalism, helped me go beyond pure fiscal matters and disclose connections with the monetary regime and the political system. Here, I present the central findings on the monetary and institutional impacts of domestic public debt in the nineteenth-century Colombian economy. The main objective is to show how this debt structured an impure gold standard and intertwined with other institutions fundamental in understanding the development process in this case.

The chapter consists of four sections. First, it presents the fiscal situation, identifies the origin of domestic public debt and contextualizes its evolution throughout the century. The second section analyzes the monetary impacts of this debt through the notion of an impure metallic pattern. Trends in domestic prices are discussed, as well as the monetary attributes of debt notes, in order to establish the relationship between inflation and debt issuing. The third section considers three institutions associated with this impure pattern: monetary chaos, financial intermediation and civil wars. The final section closes the chapter with the conclusions drawn.

Fiscal deficit and domestic public debt

From 1840, it was clear that most important tax revenue came from foreign trade, which was the most dynamic economic activity. However, customs yields fluctuated wildly according to the international markets. This fiscal dependency was reinforced by a strong political reluctance to impose direct taxes. Other resources, such as fiscal monopolies (tobacco, salt, brandy), had moderate yields and short existences. As to the fiscal expenses, the greatest burden was the external debt contracted with the British. Once 'Gran Colombia' was dissolved in 1831, the poverty of the Treasury led to default on this debt, thereby closing the international credit markets for the entire century. Fiscal revenues were used to make irregular payments of interests, and cover the basic expenses of public administration and the military. Only under exceptionally better fiscal conditions was some investment made in schools, road construction and railroads. In light of this tight fiscal situation, domestic public credit became a solution to finance deficits. This debt was used extensively until 1880, when fiat money became a feasible alternative.

Although public debt is a tool for smoothing government consumption in the short term, it can become a perverse mechanism when governments engage in a Ponzi game. A detailed examination of public credit reports and Treasury documents reveals that Colombian governments followed this game, whereby they systematically contracted loans without worrying about the future payment, and obtained new loans to pay the service of the existing loans, always lacking the capital to return the principal. The frequency of the civil wars (1830, 1839–41, 1851, 1854, 1859–62, 1876–77, 1884–85, 1895, 1899–1902) partly explains this behaviour. Figure 10.1 shows that the civil war periods coincide with a higher growth in the domestic public debt.

Historical evidence suggests that public debt tends to be larger in countries with greater political instability. A weak government with

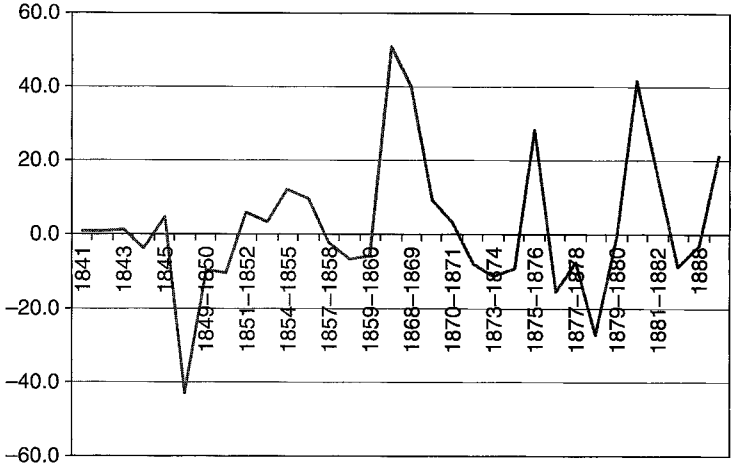

Figure 10.1 Domestic public debt growth (%)
Source: Rojas (2000).

an expectation of a short stay in power prefers to go into debt rather than use less appealing alternatives for fiscal financing, such as as an expenditure cut or a tax rise. In this way, the debt burden is a legacy deliberately left to the successor, especially if it belongs to the opposition. Based on this shortsighted political logic, domestic indebtedness in nineteenth-century Colombia brought a persistent fiscal crisis in which current expenses had to be paid against future revenues because the current fiscal income had been consumed or pledged decades ago to finance previous wars.

The domestic public debt reflected civil wars costs and the operational deficit of public administration. An important proportion was made of ex post obligations created during the conflict and only a small part constituted true indebtedness. This debt was classified in three main categories:

- *floating debt*, which covered short-term payments thus 'floating' in the balance;
- *consolidated debt*, which included medium- and long-term obligations where the capital repayment was standing by while a fixed rent was arranged with government discretion; and
- *irredeemable debt*, whose capital was never repaid or 'redeemed' in exchange for a perpetual rent.

Table 10.1 summarizes the general characteristics of each type of debt.

Table 10.1 Characteristics of domestic public debt liabilities, nineteenth-century Colombia

Class	Origin	Term	Interest (%)	Guarantee
Floating	Provisions, expropriations, war indemnities, voluntary loans and special contracts. Wages and pensions of civilian and military employees, debt interests, other services to the public administration.	Short	0, 3, 5, 6, 12, 18 and 24	Customs and salt mine revenues
Consolidated	Consolidation of old floating debt.	Middle and Long	3, 5 and 6	National goods, mortgages, sealed paper, mines, fines, and funds of the Treasury
Irredeemable	Real estate redeemed by the national treasure taxed with chaplaincies and ecclesiastical censuses. Ecclesiastical rents, rents to educational and charity establishments.	Irredeemable	1½, 2½, 3, 4½, 5 and 6	Common funds of the Treasury

Source: Rojas (2000).

The government took several measures throughout the century to pay its debts and sustain some fiscal credibility. These measures included the pledge of the most productive fiscal revenues, the issuing of Treasury notes of low denomination and the transfer of consolidated debt to short-term debt in order to improve the market value of the former. As the decades passed, the debt burden was ameliorated much more by ingenious amortization schemes and the emergence of other sources of fiscal financing than by the decline in war costs.

A relative magnitude of this indebtedness is built by using the value of exports. International trade provides a good idea of the economic dynamic due to the fundamental role of the commodity export cycles. Figure 10.2 shows the nominal index of the exports and domestic public

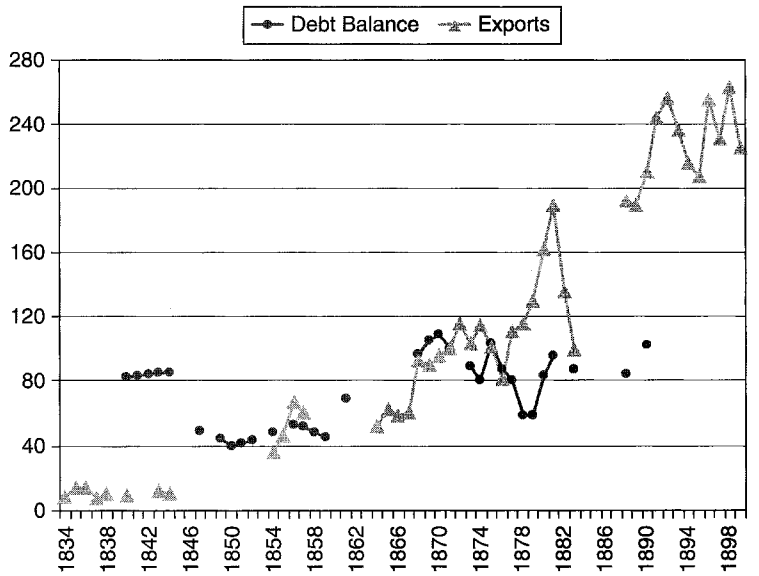

Figure 10.2 Total exports and domestic public debt indexes (1871 = 100)
Source: Rojas (2000).

debt. Taking the exports as a proxy of the domestic product, Figure 10.2 reveals stagnation before 1850. It also confirms that this debt brought a heavy burden, as its service was about 50 per cent of the fiscal revenues. From 1870 onwards, the economy increased its income level, thereby affording superior levels of internal debt. However, after 1880 this source of fiscal financing would be less frequently employed due to the emergence of fiat money.

Figure 10.3 presents the cumulative debt, the amortized debt and the difference between the former and the latter (i.e. the net debt). The high growth in the inscribed debt between 1860 and the mid-1880s is remarkable. This change is not exhibited in the net debt balance, the balance of which appears more stable as it was manipulated so that no government acknowledged an amount beyond 13 million pesos.

Monetary impact

From 1850 to the mid-1880s, the nation operated under a bimetallic standard in which domestic circulation was dominated by silver and foreign trade by gold. In this monetary regime, the monetary base increased

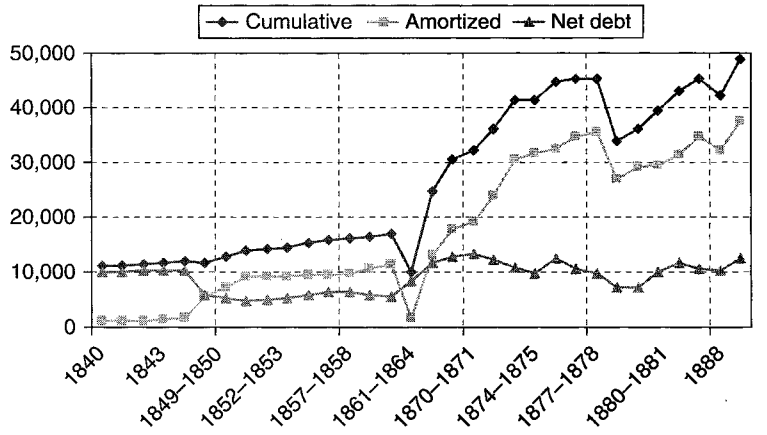

Figure 10.3 Total exports and domestic public debt indexes (1871 = 100)
Source: Rojas (2004).

or diminished according to the metallic flows brought by the net exports and the gold and silver mines yield that remained in the domestic circulation. According to the classic international gold standard, Hume's price–specie flow mechanism assumes that trade balance and the level of prices move in the same direction. Periods of commercial surplus – and therefore gold inflow – would generate inflationary pressures, whereas periods of deficits would bring deflation. It is well-known that one of the disadvantages of the gold standard lay in the high real output costs imposed by short-tem price fluctuations. In line with this classical view, Ocampo (1994) maintained that the Colombian economy showed the necessary flexibility for the ideal operation of the gold standard during 1850–85. Thus, external booms caused domestic inflation and increases in the metallic base, whereas external crises generated deflations and metallic outflows. This flexibility, according to Ocampo, guaranteed the transmission of international prices towards domestic prices.

Nevertheless, it is necessary to consider that events such as wars, productive crises, inadequate monetary legislations, loose fiscal policies or counter-cyclical monetary policies can move economies away from the gold standard. The money supply is altered – and, hence, the internal price level – by such events breaking down metallic convertibility. In the case of Colombia, fiscal weakness, monetary disorder and civil wars took the economy far from an ideal or pure gold standard. Instead, the nation structured a hybrid monetary system in which metallic currencies and private banknotes circulated together with domestic public

debt notes, akin to paper money, that expanded the monetary supply, although in a decentralized and irregular way.

An impure gold standard can help explain the behaviour of domestic prices that did not follow the level of international prices. This fact suggests that domestic prices exhibited their own dynamics, as Meisel (1990) points out. According to Meisel, domestic prices between 1821 and 1855 closely followed England's price level. This parallelism vanished as from 1856, when domestic prices showed an upward trend, contrasting the deflationary trend in the core advanced economies. Indeed, domestic inflation was puzzling in an environment where the frequent complaint was the shortage of metallic species.[2]

An impure gold standard

Under the gold standard, notes issued by commercial banks or the Treasury were valuable provided they were payable in metallic currency. Conceptually, these paper currencies were no more than the representation of existing stocks of precious metals (gold, silver, copper). Consequently, paper currency did not increase the monetary supply. In this regime, the monetary base is made up of the amount of circulating metals and only the net trade balance, the production and net export of precious metals could modify its level.[3] Nevertheless, if the metallic support of notes diminished and agents did not have enough information to adjust their assessment of the notes' real value, then a monetary expansion or contraction could take place. The next two subsections present evidence in this direction.

The domestic debt notes and their monetary attributes

One of the measures that conferred monetary characteristics to the public debt notes was their exchange for all types of tax payments as well as state properties. Although historical studies of this period revealed that the notes were used in the amortization of ecclesiastical properties, the economic historiography overlooked the fact that this debt was instituted from 1828 and assiduously used in the payment of customs taxes and other fiscal payments.[4]

These notes became the means of transaction for the state, whereby it could pay its creditors in the same way that its debtors could pay their citizens' obligations. It is necessary to point that this scenario was still far from a fiat money regime. Such a regime would not emerge until 1886, when the National Bank became the only bank with the right to issue legal tender bills. The note issuing ranged from $1 to $10,000. By the

1850s, a daily agricultural wage amounted to $0.25, 25 pounds of sugar cost about $1, the monthly wage of a military leader was $16, an urban house cost $8,000, and wealth of $300,000 provided the status of 'rich'. After the first issuing of these notes, in the 1840s, the largest denomination was $1,000. Yet, the issuance was concentrated between $5 and $500, leaving the fractional value notes ($1 and less) for the payment of small expenses. Table 10.2 shows the characteristics of these denominations.

These notes were transaction means (that is to say, money) to a limited circle of merchants, speculators and bankers. To the small and common creditor, the value of notes was very uncertain and redemption in metallic species entailed high transaction costs. Small creditors soon conceded their rights to financial intermediaries by selling their notes for a fraction of the nominal value. From 1850 onwards, such intermediaries thrived in urban centres such as Bogota and Medellín and port cities such as Cartagena and Barranquilla. Two decades later, when commercial banks consolidated, these notes were demanded for operations between banks and government, especially because most of these banks managed merchants' businesses in international trade and the notes were instrumental in paying customs taxes. This intermediation and the land purchased by these notes incorporated into the domestic market the metallic currency and physical capital that had otherwise been hoarded.

The short-term notes had high liquidity and circulated with smaller discounts and high real values or market prices. Figure 10.4 shows that, from the late 1860s onwards, debt issuing was concentrated on floating debt. The transfer of long-term debts to short-term obligations reflected the low credibility of public debt holders on fiscal soundness, as well as more pragmatic positions of the governments in subsequent decades. Nonetheless, before the 1860s, some governments tried to build up credibility for a consolidated debt note called Rents on the Treasury at 6 per cent. This note enjoyed a relatively high real value of about 50 per cent until the Radicals took over power in 1861. Later, between 1878 and 1890, the national governments issued short-term notes such as promissory notes from the Treasury, Orders of Payments at 25 per cent on customs and salt mines, and Colombian bonds, among others.

After extensive use of the floating debt, the National Bank bill appeared in 1881. It was fully convertible into metallic funds and had wide acceptance until the civil war of 1885, when excessive issuance reduced its price market to 15 per cent and 20 per cent over its nominal value. Convertibility was suspended and the bill was enacted as the legal currency in the 1886 constitution. Thus, subsequent governments found

Table 10.2 Denominations of the main domestic debt notes

Date	Debt note	Value ($)			
		Fractional	Low	Medium	High
1838	Treasury bills		5, 10, 20, 25, 50, 75, 80	100	
1838	Consolidated vouchers		25, 50	100, 200, 300, 400, 500	1,000, 2,000, 4,000, 8,000, 10,000
1843	Supplies		5, 10, 20, 40	100	
1845	New consolidated		5, 10, 15, 20, 25, 50	100, 200, 400, 500	1,000, 2,000, 4,000, 8,000, 10,000
1847	Rents on the treasury		10	100	1,000, 5,000, 10,000
1850	Floating vouchers		Less than 10	Maximum 400	
1852	Floating vouchers		100		
1856	Floating vouchers		10, 20, 50	100, 500	
1861	Treasury bills	1, 2, 3	10, 20, 50	100	
1861	Floating bonds			100	
1861	Rents on the Treasury to pay to the bearer		6, 10, 30, 60	100, 500	1,000
1876	Order of payment against Customs	1	5, 10, 50	100	
1877	Promissory notes of the Treasury	1	5, 10, 50	100, 500	
1879	Compensation vouchers to foreigners		10, 50	100, 500	
1881	National Bank bill	1	5, 10, 20, 50	100	
1885	National Bank bill	0.1, 0.2, 0.5	5, 10, 20, 50		

Source: Rojas (2000).

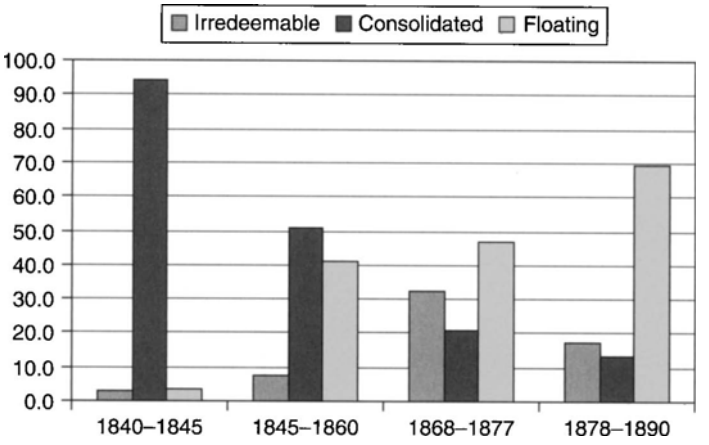

Figure 10.4 Domestic public debt components (%)
Source: Rojas (2004).

a new and less onerous resource: the seigniorage from the issuing of paper money.

The excesses in issuing debt notes

Seigniorage was produced when:

- the issuing exceeded the current and future fiscal revenues allocated to debt repayment (i.e. governments expanded their consumption beyond their present and future means); and
- the market value of notes was superior to their metallic backing, which means that note holders had monetary illusion, although on a temporary basis.

Clearly, informational asymmetries on fiscal matters and uncertainty from adverse fiscal shocks help explain the monetary illusion. The note issuance beyond fiscal capacity was constantly reflected in the Treasury's insolvency, whose coffers, according to the secretaries, remained full of paper and rarely contained metallic coins. Yet, the bulk of these notes represented metallic payments, as short-term notes were backed by customs and salt mine revenues. The Treasury allocated a certain percentage of these revenues to debt repayment based on expected revenues. Nevertheless, the percentage was repeatedly modified as a result of fiscal crises, thereby indicating to debt holders that a correction in the value of their notes was needed.

The first issue of an excess of floating debt took place in 1856, motivating a renegotiation of the terms with creditors. However, the next government defaulted again, shielded by the threat of a civil war in 1858. The second excess emerged in a climate of political hostility and civil confrontation in 1876. At that time, 50 per cent of salt mine revenues and over 90 per cent of customs revenues were mortgaged. The Treasury lacked liquid resources to face administrative and military expenses, and reductions in the percentage of fiscal revenues to serve the debt had to be negotiated in 1881, 1882 and 1884. Debt negotiations – whether they pressured governments to increase taxes or reduce the tax support to the debt – pushed down notes prices, thus eliminating monetary expansion.

An episode in which issuance reached exceptional dimensions occurred when Radical Liberals took power. Also, the revolutionary government found extraordinary resources in the territorial wealth of the clergy to pay the costs left by the 1861 liberal revolution. By the confiscation of ecclesiastical mortgages and loans (*desarmortizacion de bienes de manos muertas*), the Treasury auctioned Catholic Church properties and debts in exchange for all types of public debt notes at 100 per cent of their nominal value, despite the fact that notes had been traded with discounts at not less than 50 per cent. These auctions amounted to highly concentrated wealth transfers from the Church to those debt holders that redeemed properties and perpetual loans with depreciated notes. Monetary expansion occurred because the debt issuance was exceptionally high, exceeding fiscally extraordinary revenues, and note holders allocated inflated values to their documents during the confiscation.

Inflation and domestic debt

The precise effect of excess issuance on the monetary base is difficult to measure. On one hand, quantifying the metallic monetary base is hindered by the low reliability of the official statistics on coinage and net export of precious metals due to pervasive contraband. On the other hand, measuring the overvaluation of debt notes is difficult due to the lack of systematic records. Despite these difficulties, an indicator of the relationship between debt issuance excesses and monetary circulation is obtained by comparing inflation with a measure of debt issuance overflow. The relative rate of debt issuance is calculated as the growth rate of the ratio between debt issuance and expected fiscal revenues used in budgets. Figure 10.5 depicts this ratio and inflation, where it can be seen a positive and correlated growth in both variables. According to this price index, the average inflation was about 4 per cent or 5 per cent during

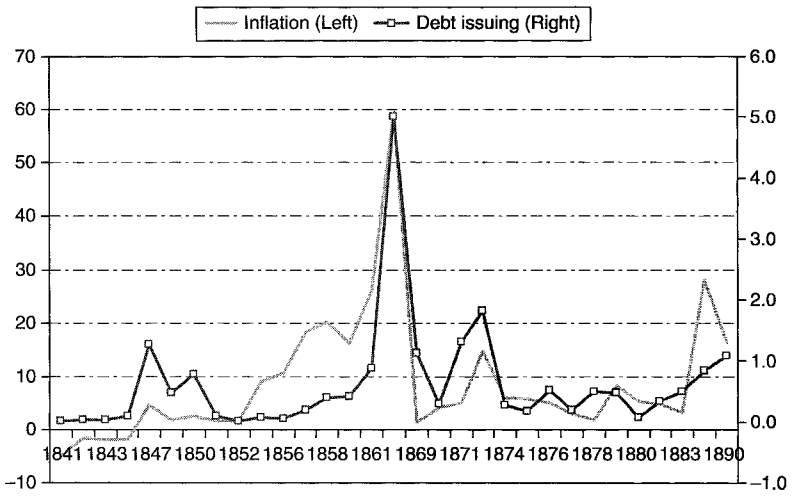

Figure 10.5 Inflation and growth of the relative rate of debt issuing (%)
Source: Rojas (2004).

1841–81 in times of peace, whereas it had approached 20 per cent during civil wars, such as those in 1856–59 and 1871–74.

The extraordinary increase in the issuance occurred between 1861 and 1865, and coincided with a high growth rate in domestic prices. Undoubtedly, the inflation generated by the 1861 war was remarkable; however, it is not possible to determine its true figure here.[5] In Figure 10.5, it can be seen that relationship between inflation and fiscal overflow was weakened in the 1880s, which is explained by the emergence of the National Bank bill.

Overall, the long-term analysis of the price level is closely linked to the economic growth, whose main engine was the agro-export sector. Following Ocampo (1994: 17), for 1850–85, an inflationary trend of medium duration emerged as 'the mechanism whereby the export expansion was transmitted to domestic agriculture'. Soon, the rents from natural resource exploitation would have been transferred to the production of non-tradable and inelastic supply goods. Yet, explaining the short-term behaviour of inflation is less straightforward. It cannot be attributed exclusively to agro-export cycles, or seen as driven by the price–specie flow mechanism. The lack of quantitative and qualitative evidence showing that foreign trade crises coincided with deflations prevents the illustration of Hume's idealized gold standard. That the economy did not experience deflation more frequently becomes even more puzzling,

given the decreasing coinage and the net outflow of metallic currency throughout the century.

Short-term inflation is closely connected to the agro-export cycles. However, the role of these cycles in the monetary regime defies straightforward explanation. It is better understood when the connection between agro-export crises and civil wars is brought into the picture. The evidence shows that a downturn in the international price of export commodities was followed by a civil war. Those were the circumstances after the collapse of the tobacco booms in 1850–53 and 1856–57, the end of the coffee and cinchona bark export expansions in 1870–73 and 1878–82, as well as during the end of the great coffee expansion in 1893–98.

These connections illustrate that the fall in exports and the sudden loss of international markets prepared fertile ground for the fuelling of domestic grievances. Under a pure gold standard, the deflationary effect of the business cycle would be magnified by the devastating effect of war and the decrease in the monetary base because of metallic outflow. Conversely, under an impure gold standard, deflation in metallic prices could be offset by the issuance of larger debt notes. Still, this mechanism rested on the role of the financial intermediaries, which will be analyzed in the next section.

Thus, fiscal policy, instead of being pro-cyclical as Hume's mechanism implied, was counter-cyclical. Equally important, the domestic debt was a tool for governments temporarily to expand their expenses from their tax revenues, which were highly sensitive to the swings of world markets. In summary, explaining short-term inflation during the century requires the taking into account of the role of domestic debt notes. The monetary effect of these notes is coherent with the long-run trend in the price level and the absence of deflations, thereby indicating the impure nature of the gold standard.

Other institutional impacts

The consolidation of an impure gold standard structured an institutional matrix that reinforced the persistence of characteristic institutions in nineteenth-century Colombia, such as the monetary chaos, the monetary and financial intermediation and the civil wars.

The tolerance of monetary chaos

The lack of a monetary unit is an institution intimately tied to an impure gold standard. Although the monetary unit was officially specified, in practice, domestic circulation was made up of multiple species coined

under different laws that could not be discontinued. Monetary chaos has been explained by poor monetary legislation that set incorrect parities between gold and silver. Also, the withdrawing from circulation of silver and copper coins with low metallic content for heavier silver and gold coins was a task seen as far beyond the fiscal capacity of the Treasury.

However, these explanations overlook the reasons for the negligence of setting adequate parities, as well as the disinterest of legislators in eliminating the monetary chaos and providing this public good. The truth was that, once the state found a less restrictive means of payment than the hard currency imposed by the gold standard, matters related to monetary circulation in metallic species were not essential for its subsistence. Instead, the measures on issuance, note circulation and amortization would draw the legislators' complete attention. The debt notes, seen as of secondary importance in governmental monetary matters, meant that financial intermediaries would be the providers of hard metallic currency and of manageable transaction costs associated with the multiple species in the monetary system.

The intermediaries and the capital market

As the century progressed, the nation moved away from pre-modern credit systems (such as ecclesiastical censuses) to modern systems (such as private and state banking). Capital and investments brought by agro-exports, together with the learning-by-doing process in monetary regulation, promoted modernization in financial matters. Table 10.3 shows the close relationship between private and public credit. The table outlines the sources of metallic liquidity to which the governments resorted and identifies the most visible intermediaries, and the associated systems of debt amortization.

Until the 1860s, a small group of individual speculators and merchants assured a minimum, though expensive, existence to national governments. In the 1860s, several intermediary organizations took shape to develop the financial and monetary markets. In this decade, hot debates on the relationship between private and public credit occurred, thus leaving modernizing lessons to the legislators and empowering emerging private agents. Particularly, the barriers impeding the free circulation of capital and land would disappear in this period. From 1870 onwards, a less risky environment encouraged the establishment of commercial banks. Some of these closely supported the central and federal governments' financial activities. This thriving period, known as the 'free banking era', came to an end in 1886 when the paper money regime was implemented. The new regime eliminated small and medium-sized

Table 10.3 Sources of Treasury liquidity during nineteenth-century Colombia

Period	Source of metallic liquidity	Intermediaries	System of amortization
1840–46	Loans with individual speculators and merchants	Judas Tadeo Landínez, Powles Illingworth i Company, Loving Jose Maria, Rafael G. Tiled, Robert H. Bunch, among others.	Repayment of the loans at 100% of the debt nominal value Apportion of Treasury's common funds Mortgage of customs and salt mines
1847–60	Redeeming Catholic Church loans Loans with individual speculators and merchants	Danies Nicholas, Antonio Lopez Santana, Hipólito To Perez, Francisco Valenzuela, Francisco Zaldúa, Raimundo Santamaría, among others.	Amortization funds Tax payments in customs and salt mines Mortgage of customs and salt mines
1861–68	Confiscation of Catholic Church properties Redeeming Catholic Church's loans	Commercial houses	Sale of Catholic Church properties Mortgage and tax payments in customs and salt mines
1869–77	Operations with banks in Bogota and some main regional banks	Bank of Bogota, Bank of Colombia, Other commercial banks	Treasury's auction of debt funds Mortgage and tax payments in customs and salt mines
1878–85	Operations with banks in Bogota State bank Association of debt holders	Bank of Bogota National Bank Great Committee of Debt Holders	Treasury's auction of debt funds in metallic Direct payment in customs and salt mines
1886–94	Operations with banks in Bogota State bank Association of debt holders	Bank of Bogota National Bank Great Committee of Debt holders	Treasury's auction of debt funds in National Bank bills

Source: Rojas (2004).

banks, which preferred to shut down before accepting the National Bank bill. Yet, this regime rested on the support of a few large private banks located in the capital, thus establishing sharp regional differences in the banking sector from that point onwards. A detailed evolution is found in Rojas (2004).

In this scenario, an impure gold standard kept certain stock of metallic species and debt notes in circulation, thereby expanding the money supply and the volume of traded goods. Had the money supply been exclusively metallic, these goods would have shown severe deflation. This adapted version of the gold standard eased domestic market development and the expansion of the monetary circulation that, otherwise, would have been slower and painful. This impure pattern offered governments and merchants a greater degree of freedom to seize the agro-export opportunities than that offered by a pure gold standard operating in a poor economy. At this point, it is necessary to consider the nation's structural limitations once Spanish rule ended: subsequent political instability and civil wars, fiscal poverty and monetary chaos, meager integration of the domestic market and the closure of the international capital market. Given these limitations, the impure gold standard was a convenient solution whereby certain productive and commercial activity was feasible in the short term.

The financial intermediaries on which this version of the gold standard rested had a positive influence on economic performance, since they undertook the risks and costs of negotiating debt notes, the regularizing of monetary circulation and the structuring of a capital market. Unfortunately, against the benefits of this monetary regime in financial market development, there were regressive effects caused by political instability. Frequent civil wars made these intermediaries too dependent on political alliances with unstable governments. Clearly, fair competition on level ground among banks and commercial houses was restricted. Likewise, legislative instability and partisan biases offered incentives to some intermediaries to become involved in rent-seeking activities regarding public resources (i.e. the 1860s confiscation, the 1895 'clandestine issuing'). Understandably, contemporaneous assessments of the benefits brought about by the financial sector and the development of a domestic capital market were highly controversial.

The viability of civil wars

The civil wars were triggered by national electoral results that were deemed as illegitimate. Closely examined, this persistence reflected the instability in the rules that governed political competition. Lack of fundamental

agreement between liberals and conservatives made the extreme political exclusion of winners a constant strategy in this competition. As the civil war occupied a central place in the life of the elites, it had to be based not only on mechanisms that fed the ideological disagreement, but also on resources that guaranteed its economic sustainability. The struggles were led by landowners and *caudillos* who recruited followers, and had cattle and money to run the war. Their investments could be recovered through non-monetary and monetary benefits if their party won the war. The former included favourable property rights or public jobs, among others; the latter came down to the control of the Treasury. This control allowed winners to set favourable rules on compensations in the form of debt notes backed by customs revenues and other fiscal assets.

The existence of a means of transaction such as the debt notes to finance the civil war and reduce its costs in metallic species contributed to making civil war a sustainable strategy with which to address political conflict.[6] Consequently, the causality between civil wars and domestic debt growth does not run in one direction only. Domestic debt grows because there are wars, but the wars were carried out partly because it was possible to pay them with debt notes. Because the fiscal rules to serve this debt could hardly be neutral with all creditors, the domestic debt provided losers with additional incentives to initiate the ensuing civil war. Contemporary observers pointed out that domestic debt became the parties' weapon whereby creditors were discriminated against according to the war to which they contributed and their political affiliation. This phenomenon is evident for the civil wars of 1861, 1876 and 1884. Specifically, the fiscal independence established by the new monetary regime allowed post-1886 governments to strengthen their military capacity and reunite the nation. Nonetheless, as has been mentioned, the new rules took an important number of banks out of the market. Some of those who lost would soon gather sympathy with liberal opponents, thus preparing the ground for the 1895 civil war that threw the country into the so-called Great War or the Thousand Day War.

Conclusion

The issuance of domestic public debt was the mechanism that governments used to finance civil wars and Treasury deficits in a nation that began its independent life in a highly constrained fiscal situation. Domestic debt had fundamental consequences on the monetary system and the institutional structure of the nation. As to the monetary regime,

it structured an impure gold standard wherein diverse metallic currencies, private bank notes and domestic debt notes circulated, thus expanding the money supply – albeit irregularly. These debt notes enjoyed monetary attributes, insofar as they had high liquidity and wide acceptance among financial intermediaries. While liquidity came from the issuance of short-term notes that soon concentrated most of the liabilities, tradability stemmed from their acceptance in exchange of tax payments and state properties.

Under an impure gold standard, the money supply does not automatically follow Hume's price–specie flow mechanism. Instead, the money supply can be expanded with some independence from the metallic flows, and the domestic prices develop their own dynamics. Although there were several instances of excesses in debt issuance (1858, 1861, 1876, 1881, 1882, 1884), the closest relationship between the issuance growth rate and inflation is observed in the 1860s. A central point made here is that the short-term trend of the price level is inexplicable under a pure gold standard framework – basically, because there is no evidence deflation brought about downturns in the agro-export cycle and the subsequent civil war. Additionally, the fact that the economy had an inadequate monetary legislation and underwent frequent periods of emergency created an environment in which the ideal operation of the gold standard was not to be expected.

During the wars, fiscal spending in debt notes had an expansionary nominal effect, reflected in higher domestic prices. The composition of the money supply then included less metallic species and more debt notes (that is to say, paper money). Therefore, the counter-cyclical behaviour of fiscal spending is clearly a violation of the rules of the game of the gold standard (Dutton, 1984). In this solution to the rigidity of the gold standard, financial intermediaries such as private banks play a fundamental role. In the case of Italy, for example, the government entered into a paper money regime in 1866 and managed to maintain its exchange rate and domestic prices stable, based on close interaction with private banks and the international capital market. The support of this 'hidden' gold standard questions the image of the smooth operation of a monetary regime exclusively bound to the automatic defence of a fixed ratio between metal and paper.

Moreover, in the case of Colombia, this impure monetary regime was associated with others institutions such as monetary chaos, monetary and financial intermediation, and civil wars. The monetary chaos entailed larger transaction costs and reflected the underprovision of a public good such as the monetary unit. The monetary unit was not

effectively implemented until 1886. Indeed, beyond the alleged poverty of the Treasury, the state found in the use of debt notes a means of payment for its transactions that was less restrictive than those imposed by the gold standard. Hence, resolution of the issues involved in monetary circulation was not essential for state subsistence.

In the meantime, the development of financial intermediaries facilitated the operation of a monetary and financial market, thus fostering the institutional change in a pre-capitalist system. The intermediaries introduced metallic currency into circulation and facilitated capital mobility, whereby governments obtained a certain viability and agro-exporters joined the international market expansions. Yet, to these desirable effects, other regressive effects have to be added, especially those generated by the intermediaries' dependence on alliances with myopic governments. The politically unstable scenario created intermediaries that could only compete in a limited fashion and that had incentives to pursue rent-seeking based on political favour.

Another institution associated with the impure gold standard is civil war, which had unambiguously negative economic effects. Debt note issuance facilitated the civil wars insofar as it was a source of finance. In this sense, the debt note issuance was one of the mechanisms on which the persistence of armed confrontation rested. The causation between civil wars and domestic debt built up a two-way relationship as the century evolved: internal debt increased because there was a war, but war was also ignited because this debt existed, and creditors who were discriminated against joined the opposition.

Two reflections on institutions are derived from this historical case. First, the institutional adaptability before the gold standard is remarkable. This monetary regime could be sustained not only under the classic rules set by the core economies in the nineteenth century, but also in peripheral nations that had just joined world capitalism. Although a nation followed the same rules prevailing in the international monetary system, domestically, other rules or variations had to complement the gold standard. This indicates that the institutional convergence in monetary issues promoted by world trade developed important variations.

Second, the simultaneous determination of the economic and political system (North *et al.*, 2009) is observed in the close relationship between civil wars and agro-export cycles. The underlying mechanism in this relationship activates when a fall in agro-exports occurs, which weakens the fiscal finances. Moreover, the fall reduces economic stability and undermines the expectations of the current political leadership. Smaller customs revenues lead to lower debt note prices, and debt repayment

thereby downgrading the government position before creditors and opposition. Under non-neutral fiscal rules and low expectations on economic performance, the incentives to initiate a civil war increase. The economic cycle goes hand in hand with a political cycle that resorted to war *partly* because it counts on a fiscal resource to finance it. In this institutional structure, the economic cycle effects, caused by international market fluctuations, were magnified by the political cycle, thus entrenching instability and vulnerability in the nation.

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11

The Japanese Economy during the Interwar Period: Instability in the Financial System and the Impact of the World Depression

Masato Shizume

The Japanese economy faced chronic crises during the interwar period. Among the crises, the Showa Financial Crisis of 1927 and the Showa Depression of 1930–31 marked turning points. The Showa Financial Crisis of 1927 was the consequence of persistent financial instability because of incomplete restructuring in the business sector and postponements in the disposal of bad loans by financial institutions. The Showa Depression of 1930–31 was caused by the Great Depression, a worldwide economic collapse which had been intensified in Japan by the return to the gold standard at the old parity in January 1930.

We divide the period from the outbreak of World War I (1914) to that of World War II (1939) into five sub-periods (Table 11.1). The first sub-period was an economic boom with high rates of growth and inflation, which lasted from 1914 to 1919. This was followed by about a decade of lacklustre, mildly deflationary activity (1920–29). In 1930 and 1931, the economy succumbed to the Showa Depression, a two-year bout of severe deflation and economic decline. From 1932 to 1936, the economy recovered under the 'Takahashi economic policy' (*Takahashi Zaisei*), achieving high growth and modest inflation.[1] Then, from 1937, Japan entered the era of the command economy of the Asia-Pacific War, embarking on several years of high growth and rampant inflation.[2]

This chapter gives an overview of the Japanese economy during the interwar period. We focus on the policy responses to the instability of the domestic financial system in the 1920s and to the impact of the Great Depression of the 1930s.

Table 11.1 Economic growth and inflation

	Percentage change from previous year		
Year	*Real GNP*	*GNP deflator*	*Remarks*
1914–19	6.2	13.6	World War I Boom
1920–29	1.8	−1.3	Chronic Recession
1930–31	0.7	−10.3	Showa Depression
1932–36	6.1	1.5	Takahashi economic policy
1937–40	5.0	11.9	Wartime command economy

Source: Ohkawa, Kazushi, Nobukiyo Takamatsu and Yuzo Yamamoto (1974), *Estimates of Long-Term Economic Statistics of Japan since 1868, 1, National Income.*

Chronic financial crises and policy responses in the 1920s

The Japanese economy of the 1920s suffered from a retrenchment after the boom of World War I. For most of the decade, the real economy remained lacklustre, with low economic growth, mild deflation and an unsettled financial system. Some observers describe the economic condition in Japan during the 1920s as a state of 'chronic depression'.[3] The Showa Financial Crisis of 1927 marked a turning point for the disposal of bad loans and the restructuring of the banking sector, which eventually resolved the problems with the domestic financial system (see Table 11.2, for the chronology).

Postwar collapse in 1920

In March 1920, stock prices plunged as investors anticipated a hard-landing for the Japanese economy after the boom of World War I. In April 1920, Masuda Bill Broker Bank in Osaka failed, triggering a bank run in several regions throughout Japan. The bank had been engaged in the intermediation of interbank transactions, and its customers had included both local banks and large city banks. Then, over the next four months, from April to July 1920, operations were suspended at 21 banks, either permanently or temporarily.[4] The Bank of Japan extended various types of special loan to ease tensions within the financial markets in general and stabilize financial markets by relieving specific key industries.[5]

Financial panic of 1922

Ishii Corporation, a lumber company engaged in speculative activities, went bankrupt at the end of February 1922, triggering bank runs in Kochi prefecture (in the south-western part of Japan) and Kansai region

Table 11.2 Chronology of the financial crises of the 1920s

Year	Date	Event
1920	7 Apr.	Masuda Bill Broker Bank fails
1922	28 Feb.	Ishii Corporation fails
	19 Oct.	Nippon Commerce and Industrial Bank in Kyoto suspends operations
	29 Nov.	Nippon Sekizen Bank in Kyoto announces a suspension of operations, a move that triggers bank panic in the Kyoto and Nara regions.
	30 Nov.	Kyushu Bank in Kumamoto announces a suspension of operations
1923	1 Sep.	Great Kanto Earthquake
	27 Sep.	The Diet promulgates the Imperial emergency ordinance, a legislation to indemnify the losses incurred by the Bank of Japan through the rediscounting of the Earthquake Casualty Bills (ECBs)
1927	26 Jan.	New legislation to adjust the ECBs is submitted to the Diet
	14 Mar.	Finance Minister Kataoka misstates the failure of Tokyo Watanabe Bank
	23 Mar.	The Diet approves the new legislation to adjust the ECBs
	30 Mar.	The Banking Act of 1927 is proclaimed (to take effect on 1 January 1928)
	17 Apr.	The Privy Council rejects the Imperial emergency ordinances for relief of the Bank of Taiwan
	18 Apr.	The Bank of Taiwan suspends operations outside Taiwan Island.
	21 Apr.	The Fifteenth Bank suspends operations.
	22 Apr.	The Diet proclaims an imperial emergency ordinance for a 3-week moratorium.
	8 May	The Diet passes and promulgates the Bank of Japan's Special Credit Bill and the Financial Relief Bill for Taiwanese Banks.

Sources: Institute for Monetary and Economic Studies, Bank of Japan (1993), *Nihon Kin'yu Nenpyo* (Chronology of Financial Matters in Japan), *Nippon Ginko Hyakunen-Shi* (The First Hundred Years), Bank of Japan, vol. 3.

(Osaka, Kyoto and their environs). Then, from October until December 1922, bank runs spread far across the country, from Kyushu (the westernmost part of Japan) to Kanto (Tokyo and its environs in eastern Japan). In 1922, operations were suspended at 15 banks, either permanently or temporarily. The Bank of Japan extended special loans to 20 banks from December 1922 to April 1923.

The government tightened regulations on small-sized saving banks by enacting the Saving Bank Act of 1921. Next, it tried to accelerate

reforms in the financial system as a whole, including the larger-sized ordinary banks.[6]

Special loans after the Great Kanto Earthquake of 1923

The Great Kanto Earthquake in September 1923 hurt the financial system in Japan, damaging the financial assets of banks, as well as their physical capital – such as the bank headquarters buildings and branches. Depositors feared bank losses and delays in the repayment of bank loans.

On 7 September, the government promulgated an emergency ordinance to impose a moratorium, which allowed the postponement of payments due from that month onwards in the districts affected. As events transpired, the Bank of Japan made special arrangements, including special loans. Then, on 27 September, the government promulgated another emergency ordinance to indemnify the Bank of Japan for any losses incurred in the re-discounting of bills and certain other papers payable in the stricken areas (Earthquake Casualty Bills, or ECBs), to a ceiling of 100 million yen.[7]

Depositors were relieved by these special measures of the government and the Bank of Japan. By the time the moratorium was lifted in October 1923, financial turbulence had been curbed. Meanwhile, large portions of the ECBs had yet to be settled. After two postponements of the due date for settlement, the date was finally set for 30 September 1927.

Showa financial crisis of 1927

In January 1927, the Wakatsuki cabinet of the ruling *Kensei-kai* Party took a step to facilitate the final disposition of the bad debts incurred by the Great Kanto Earthquake by submitting legislation to the Diet requiring adjustments of the ECBs. This legislation allowed the government to issue bonds that could be exchanged with the ECBs. On 14 March in the course of heated debate on the government's measures in the Diet, Finance Minister Naoharu Kataoka falsely declared that the Tokyo Watanabe Bank had failed (the bank had not yet failed at the time of this declaration). This statement set off a surge of financial panic in the regions surrounding the two great metropolises, Tokyo and Osaka. On 23 March the Diet approved the legislation, temporarily calming the depositors' panic.

A nationwide financial panic was sparked when debates in the Diet revealed financial difficulties between the Bank of Taiwan and Suzuki & Co., a large trading house based in Kobe. The Bank of Taiwan had a monopoly in issuing bank notes on Taiwan Island, and close business ties with Suzuki & Co. In response, the cabinet tried to issue an emergency

ordinance authorizing the Bank of Japan to send the Bank of Taiwan relief funds, and indemnifying the Bank of Japan for any losses incurred by this action up to a ceiling of 200 million yen. The Privy Council, the body invested with the authority to approve the emergency ordinance, politicized the cabinet's plan and rejected it on 17 April. The Wakatsuki cabinet resigned and financial panic spread nationwide.[8]

On 20 April 1927, Giichi Tanaka of the opposition *Seiyu-kai* Party took office. Korekiyo Takahashi became Finance Minister for the fourth time, and the government proclaimed an emergency ordinance imposing a three-week moratorium, effective from 22 April to 12 May. Next, the Diet convened an extraordinary session to deliberate on two bills. The first was to authorize the Bank of Japan to make special advances under the government guarantee of indemnity against consequent loss, up to a maximum of 500 million yen (the Bank of Japan's Special Credit Bill). The second was to accommodate financial institutions on the Taiwan Island under a government guarantee of indemnity against the consequent loss, up to a maximum of 200 million yen (the Financial Relief Bill for Taiwanese Banks). These two bills, passed and promulgated on 8 May, proved sufficiently reassuring to quell the panic. The moratorium was lifted on 13 May.[9]

Reforms in the banking system

Banking Act of 1927 and reforms in the financial system

Major progress towards the resolution of the financial crises of the 1920s took place in 1927, when structural reforms in the banking sector gained momentum in step with measures to dispose of the bad loans. The new Banking Act was promulgated on 30 March 1927, in the midst of the Showa Financial Crisis, with plans for effectuation on 1 January 1928. The Act stipulated minimum capital requirements for banks, and prohibited banks and bank managers from conducting most non-banking business. Under this Act, the authorities reinforced the bank examination and encouraged amalgamation of banks to stabilize the financial system as a whole. The number of banks declined steadily through the 1920s, and the trend accelerated in 1927 with an increase in mergers (Figure 11.1).[10]

Figure 11.2 shows developments in the call rates, the referenced interest rates for short-term interbank transactions of funds, and the official discount rate (ODR) of the Bank of Japan. Call rates remained high between the financial panic of 1922 and the Showa Financial Crisis of 1927, reflecting a high risk premium. A number of banks with high risk

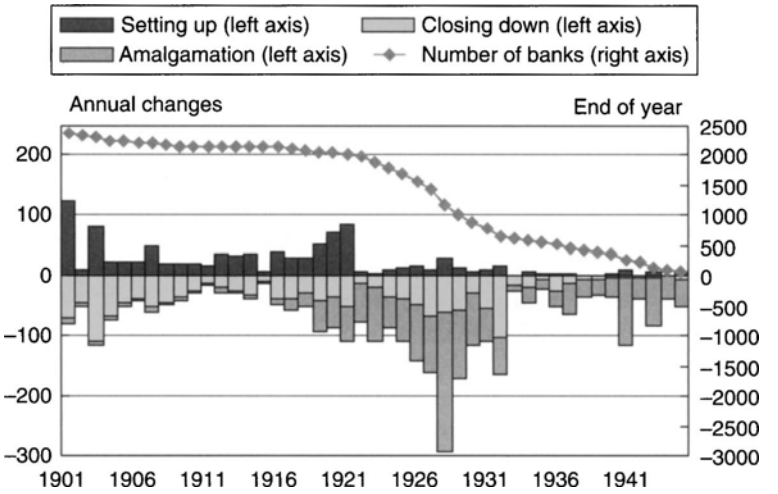

Figure 11.1 Number of banks and annual changes
Source: Goto (1970).

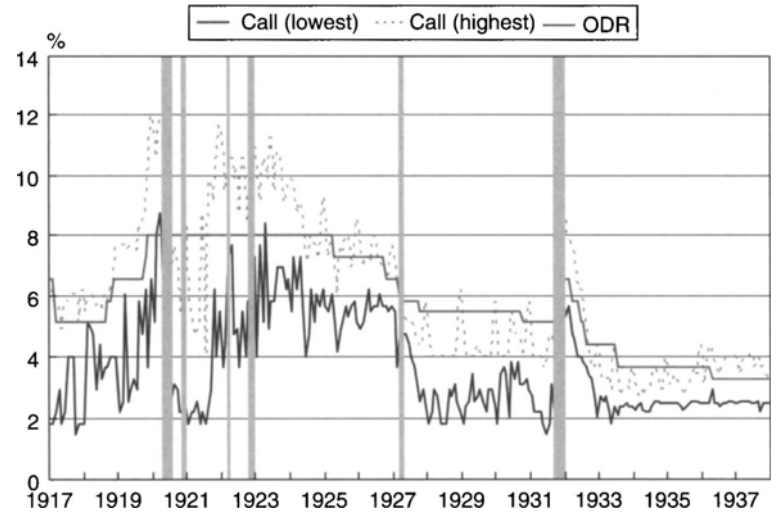

Figure 11.2 Tokyo call rate and official discount rate of Bank of Japan
Note: Shading indicates periods of spread financial panics.
Source: Ministry of Finance, *Kin'yu Jiko Sanko-Sho* [Reference Book of Financial Matters], annual editions.

profiles, such as the Bank of Taiwan, tried to raise funds in the interbank market over that period. Aware of the credit risk of the distressed banks and instability in the financial market in general, lenders required high risk premiums.[11]

Call rates decreased substantially in the spring of 1927, as market participants gained confidence from the new Banking Act, the disposition of the Showa Financial Crisis, and the stabilizing financial markets.

Causes and consequences of the financial instability of the 1920s

Many observers argue that the financial instability of the 1920s was fundamentally caused by incomplete restructuring in the business sector and postponement in the disposal of bad loans by financial institutions after the economic boom of World War I.

The prominent economist Eigo Fukai, then an Executive Director of the Bank of Japan and later the Bank's Governor, wrote:

> In summing up the fundamental causes of massive bank failures in 1927, we can conclude that the original sources were the inappropriate business practices during the post-war collapse and the temporary stop-gap measures to fix them. Ultimately, it all came to the inevitable end.[12]

Kamekichi Takahashi, another prominent economist and ex-editor of *Toyo Keizai Shinpo* (the *Oriental Economist*), wrote:

> The fundamental causes of the Financial Crisis of 1927 were the cumulative mismanagement of cover-ups and halfway measures against earlier flaws dating back to the post-war collapse. These problems were revealed inadvertently during the debate on ECBs, igniting the explosion of the financial crisis.[13]

The unimaginable financial panic induced drastic reform in the banking system, whether people liked it or not. The panic contributed to many of the reforms that were to follow.[14] Kamekichi Takahashi also argued that the reforms of the domestic financial system after the Showa Financial Crisis of 1927 helped Japan respond effectively to the Great Depression in the 1930s:

> A number of leading industrial countries suffered from the World Financial Crisis, a financial collapse without precedent, in the third quarter of 1931 (in the case of the United States, the crisis hit in the

> first quarter of 1933). For many years to follow, the economic activities of these countries were severely disrupted by the financial collapse. Yet Japan remained immune to the financial crisis of the 1930s, enjoying the benefits of the policy changes and the depreciation of the yen ... This could be credited to the total restructuring of Japan's banking system in the wake of the Financial Crisis of 1927.[15]

To sum up, Japan faced serious financial difficulties during the 1920s. The government instituted policies on two fronts to surmount these difficulties in the years during and after the Financial Crisis of 1927: the massive injection of public funds by indemnifying against lending losses of the central bank, and structural reform in the banking sector through the promotion of bank amalgamation and other measures of that sort.

Return to the gold standard and the Showa depression of 1930–31

After World War I, leaders around the world sought to restore the suspended international gold standard and reconstruct the European economy. Major countries such as the US (June 1919) and the UK (April 1925) returned to the gold standard.

Japan chose not to join the other major countries in returning to gold during the 1920s. Policymakers debated whether to do so on at least three occasions – in 1919, 1923 and 1927. From a policy perspective, Japan had three options:

- the immediate restoration of the gold standard at the old parity, a move which would push the yen up from its present level;
- an eventual move to gold at the old parity, with sufficient time for preparation in advance; and
- a move to gold at a new parity, to keep the yen cheaper than it had been at the old parity.

In all three of the policy debates, Japan chose to postpone the return to the gold standard.[16]

Japan had good reasons for not returning to the gold standard. Apart from instability in the domestic financial system, policymakers feared that Japan might be unable to sustain gold parity even after returning to the gold standard.

Japan recorded a persistent trade deficit during the 1920s after enjoying a massive trade surplus during World War I. By running the trade deficit,

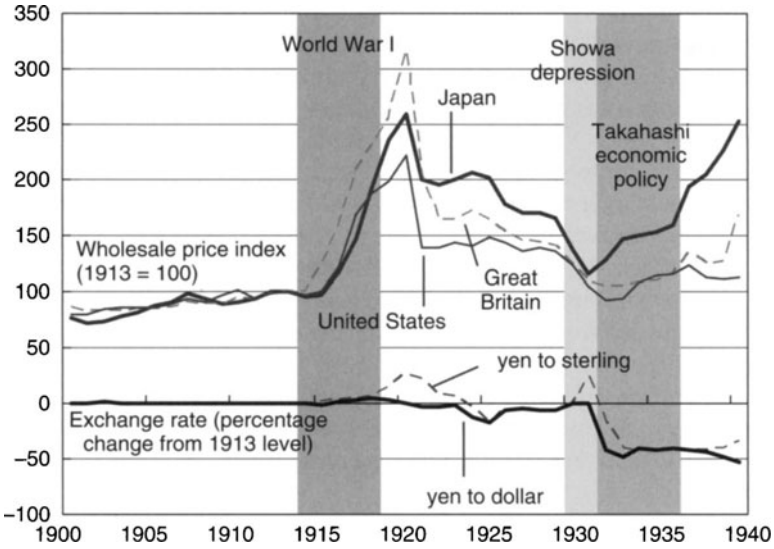

Figure 11.3 Prices and exchange rates
Sources: Research and Statistics Department, Bank of Japan (1987), *Hundred-Year Statistics of Wholesale Price Indexes in Japan*; Asahi Shinbun Sha (1930), *Nippon Keizai Toukei Soran* (Pandect of Economic Statistics of Japan); Ministry of Finance, Financial Bureau (annual editions), *Kin'yu Jiko Sanko Sho* (Reference Book of Financial Matters); US Department of Commerce, Bureau of the Census (1949), *Historical Statistics of the United States*; B. R. Mitchell (1988), *British Historical Statistics*.

the nation was losing the specie and foreign reserves it had accumulated during the war. The sum of the specie and foreign reserves decreased from 2,179 million yen (13.7 per cent of GNP) at the end of 1920 to 1,199 million yen (7.3 per cent of GNP) at the end of 1928.[17]

Japan's persistent trade deficit in the 1920s was a consequence of waning competitiveness due to the high prices of domestic goods compared with foreign goods. Tracing the wholesale price indexes of Japan, the US, and the UK, we find that prices in these three countries moved together at stable levels up to 1913, surged during and just after World War I, and then plunged, albeit to a lesser extent in Japan. The price gap between Japan and its trading partners remained until the end of the 1920s (Figure 11.3).

Aware that the gap between domestic and foreign prices was eroding the competitiveness of domestic industries, Japanese policymakers and business leaders sought to narrow the price gap and restore the gold standard.[18]

When the Hamaguchi cabinet of the *Minsei-to* (ex-*Kensei-Kai*) Party came into power in July 1929, it was committed to the lifting of the gold embargo. Jun'nosuke Inoue, Hamaguchi's finance minister, had put in a long career in international finance.[19] Judging from the restored stability in the domestic financial system, he concluded that the key precondition for returning to the gold standard had been satisfied. After cutting the budget for the fiscal years 1929 and 1930, he lifted the gold embargo in January 1930.

In retrospect, we see that the gold embargo was lifted in 1930 just when the Great Depression spread and deepened around the globe. Thus, the Japanese economy suffered debilitating effects from two sources, the impact of the worldwide depression and the appreciation of the yen associated with the return to the gold standard. The consequences, economically, were abrupt deflation and a severe contraction of economic activities in 1930 and 1931. Future observers were to call this 'the Showa Depression'.

The Showa Depression of 1930–31 was of a fundamentally different nature to the crises of the 1920s. The crises of the earlier decade had been problems of the domestic financial system. The Showa Depression of 1930–31, on the other hand, was induced by external factors, such as imported deflation, in combination with the appreciating currency and falling overseas demand.

When the UK departed from the gold standard in September 1931, international investors speculated that Japan would also be forced to follow suit soon. A rush to sell yen and buy dollars led to a massive outflow of capital. Finance Minister Inoue announced that the government would stay on the gold standard, and the Bank of Japan raised the discount rate twice, in October and November. However, these measures failed to bring about their desired effects: the capital outflow continued until December, when the *Minsei-to* cabinet[20] collapsed and the opposition *Seiyu-kai* Party came into power.

Departure from the gold standard and the start of the 'Takahashi economic policy'

On 13 December 1931, when Tsuyoshi Inukai of the *Seiyu-kai* Party came to power, veteran Korekiyo Takahashi came back as Finance Minister for the fifth time in his career. Takahashi ordered a gold embargo on the day of his return to office. He went on to implement a series of economic policy adjustments over the next four years, until February 1936, when he was assassinated by militarists. His policy regime has since been

referred to as the 'Takahashi economic policy.' As we shall see, this was a three-pronged macroeconomic policy with exchange rate, monetary and fiscal dimensions.

First, under the exchange rate policy, the yen was allowed to depreciate by 60 per cent against the US dollar and by 44 per cent against the pound sterling, from December 1931 to November 1932.[21] Perceiving that a further depreciation of the yen would be unfavourable to the Japanese economy, the government took steps to stabilize the exchange rate. From April 1933, Yokohama Specie Bank, the official foreign exchange bank of Japan, set the exchange rate quotation in pounds sterling, effectively pegging the yen to sterling. Meanwhile, foreign exchange and capital controls in Japan remained mild through 1936.[22]

Second, fiscal expenditures increased, backed by deficit financing with the central bank's credit. A newspaper reported that Takahashi had mentioned the Bank of Japan underwriting of government bonds for the first time on 8 March 1932, at a meeting with financiers.[23] On 3 June, the government submitted a bill to issue deficit-covering bonds, together with a supplemental budget outlaying expenditures for military action in Manchuria (the north-eastern part of the Chinese continent) and for an emergency relief programme in rural areas. Then, on the same day, Takahashi officially announced the Bank of Japan's underwriting of government bonds. The bill and supplemental budget passed on 18 June, marking the fully-fledged commencement of the stimulative fiscal policy of the Takahashi era. The Bank of Japan started underwriting government bonds on 25 November 1932.

Third, the Bank of Japan conducted an accommodative monetary policy by cutting its official discount rate in March, June and August 1932. Meanwhile, the regulation on bank note issuance was amended in June to raise the limit of fiduciary note issuance from 120 million yen to 1 billion yen.

Transmission mechanism of the Takahashi economic policy

A number of observers who focus on the macroeconomic aspects of the Takahashi economic policy praise Takahashi's achievements as a successful pioneer of Keynesian economics. Kindleberger points out that Takahashi conducted quintessential Keynesian policies, stating: 'his writing of the period showed that he already understood the mechanism of the Keynesian multiplier, without any indication of contact with the R.F. Kahn 1931 *Economic Journal* article'.[24]

The gist of this argument is that the macroeconomic stimulus policies during the Takahashi era contributed to growth in aggregate demand in Japan, and that Takahashi's macroeconomic policy consisted of a combination of three elements:

- depreciation of the yen (exchange rate policy);
- an increase in government expenditure associated with the underwriting of deficit-covering bonds by the Bank of Japan (fiscal policy); and
- an interest rate cut (monetary policy).

Next, we compare economic performances of peripheral countries during the Great Depression in the 1930s. The peripheral countries at that time, countries similar to Japan as small and open economies, are divided into four categories:

- gold standard countries;
- exchange control countries;
- sterling area countries; and
- other depreciators.[25]

Japan recovered earlier than these other peripheral countries: production and prices rose in Japan year-on-year by as early as 1932 (Figure 11.4).

Now, we review previous works undertaken by economic historians and economists, focusing on the transmission mechanism of the Takahashi economic policy. Nakamura (1983) employs a pioneering quantitative analysis focusing on the effect of the Takahashi policy on macroeconomic stability. Through this analysis, he concludes that the combination of exchange rate, fiscal and monetary policies contributed to stability of the Japanese economy.

Since then, many scholars have focused on the direct effects of Takahashi's policies on demand and prices. Often, they argue that external factors such as exchange rate movements played a pivotal role behind the increases in demand and prices. Nanto and Takagi (1985) emphasize the effects of the yen depreciation.[26] Okura and Teranishi (1994) discuss the effects of the move into Manchuria and fiscal stimulus, as well as the yen depreciation.[27] Umeda (2006) employs a vector-autoregression (VAR) analysis with the following six variables:

- Japanese wholesale price index (WPI);
- foreign WPI;
- effective exchange rate;

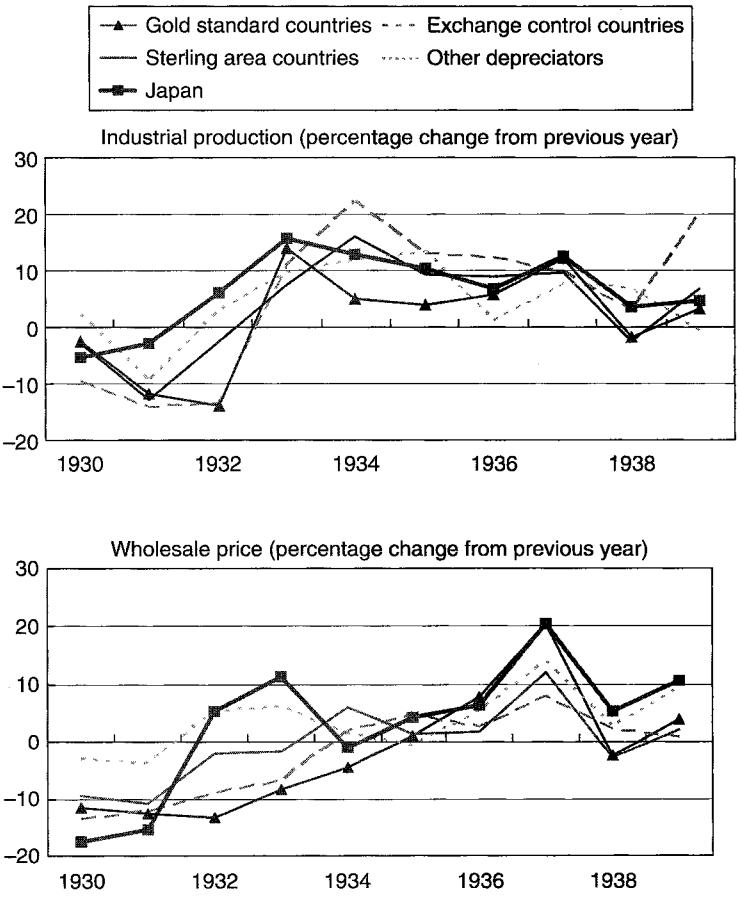

Figure 11.4 Production and price indexes
Sources: League of Nations (1940), *Statistical Year-Book of the League of Nations*, 1939/40: 194–204.

- real fiscal expenditure (deflated by WPI);
- monetary base; and
- output gap (approximated by the deviation from the trend of production index).

He finds, as a result, that Japanese prices were more strongly influenced by foreign prices and exchange rates than by domestic monetary and fiscal variables.[28] Cha (2003), on the other hand, stresses the important role of fiscal stimulus.[29]

Though recent research has examined how policy changes influence the expectation of future prices, many aspects of the transmission mechanism through this channel remain to be explored.

Empirical evidence shows a shift in expectation from deflation to inflation at about the time that Takahashi commenced his economic policy; yet, the factors behind this shift in expectations remain unclear. Some argue that two events – namely, the departure from the gold standard (in December 1931) and the underwriting of government bonds by the Bank of Japan (reported in March and commenced in November 1932) – marked the turning points.[30] There is evidence to suggest, however, that market expectations were influenced significantly only by the departure from the gold standard, and not by the Bank of Japan's underwriting of government bonds.[31]

Next, we compare macroeconomic policy between Japan and other peripheral countries during the Great Depression of the 1930s (Figure 11.5).

First, in exchange rate policy, Japan's currency depreciated more sharply than the other currencies in 1932, then moved in parallel with the currencies of the sterling area countries.

Second, in fiscal policy, Japan recorded much larger fiscal deficits than the other countries throughout Takahashi's term as Finance Minister in the 1930s.

Third, in monetary policy, currency in circulation (a measure of the quantity of money supply) rose moderately in Japan, as in sterling area countries, throughout Takahashi's term, and thus was no exception. Meanwhile, the Bank of Japan reduced its official interest rate three times in 1932, following the central banks of the UK and the US.[32]

Macroeconomic policy trilemma: Japan

Japan was a small, open economy during the entire interwar period, including Takahashi's term. The economy depended heavily on overseas markets, both in terms of trade and finance.

Policymakers and market participants at home recognized the small scale and openness of the economy. At the beginning of Takahashi's term, Japan depreciated the yen to a sustainable level and then pegged it to the pound sterling.

According to the notion of the macroeconomic policy trilemma, any chosen macroeconomic policy regime can succeed in achieving only two of the following three policy objectives:

- independent monetary policy oriented toward domestic objectives;
- a fixed exchange rate; and
- full freedom of cross-border capital movements.[33]

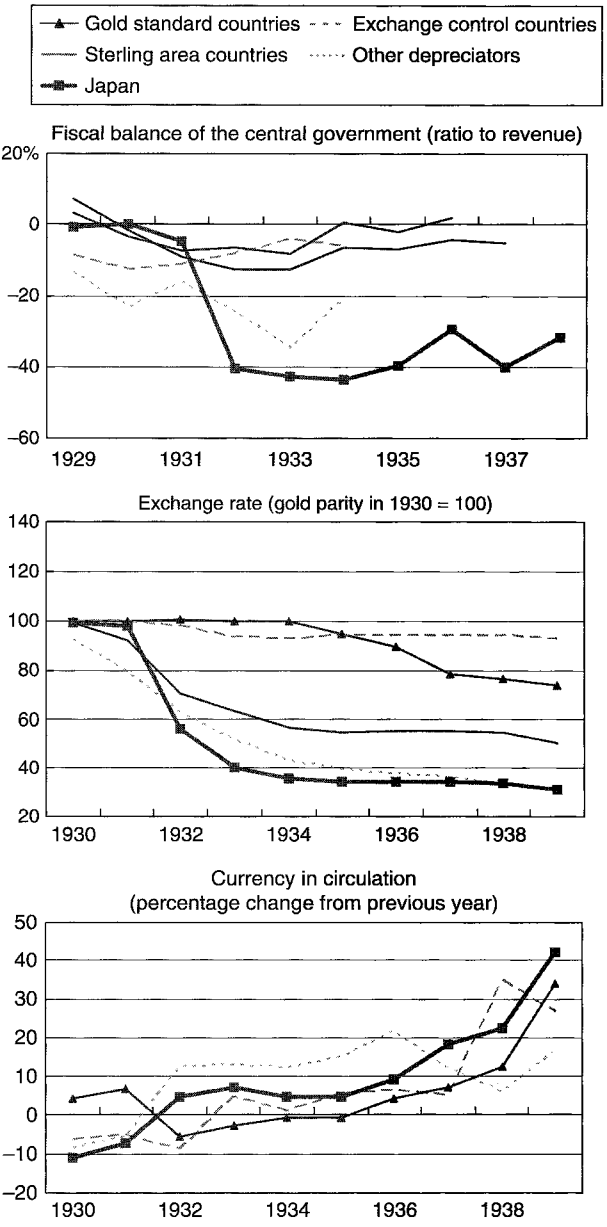

Figure 11.5 Macroeconomic policies of Japan and other countries
Sources: League of Nations (1940), *Statistical Yearbook of the League of Nations*, 1939/40: 194–204; Economic Intelligence Service, League of Nations (1937–38), *Public Finance*.

During Takahashi's term, Japan pegged its currency to the currency of the UK, a country that had been conducting a relatively lax monetary policy, and left cross-border capital regulations mild.[34] This implied that Japan was obliged to follow the monetary policy of the UK. Japan, meanwhile, increased its fiscal spending.

Other countries, such as Sweden and Denmark, chose options similar to those of Japan. Specifically, they departed from the gold standard after the UK, depreciated their currencies against the pound sterling, and then pegged their currencies to the pound sterling. Through this approach, they achieved economic recovery earlier than the other European countries during the Great Depression.[35]

Takahashi economic policy and fiscal discipline

A number of previous works claim that the Takahashi economic policy, especially the underwriting of government bonds by the Bank of Japan, led to easy credit for the government from the central bank, and a loss of fiscal discipline as a result.[36]

A number of recent studies discuss the issue of fiscal discipline in relation to political economy and international finance. Bordo and Rockoff (1996) argue that adherence to the gold standard by peripheral countries signalled prudent fiscal and monetary policies, and improved the access to capital from core Western countries.[37] Shizume (2011), meanwhile, observes that participation in international financial markets worked as a governance mechanism for maintaining fiscal discipline in Japan, even when Japan suspended the gold standard in the 1920s. Yet, the British departure from the gold standard in September 1931 was a clear sign of the breakdown of the international gold standard: it eroded the rationale for staying on the gold standard, and hence the governance mechanism for fiscal policy through international finance. Japan, having apparently failed to establish a new governance mechanism for fiscal policy, introduced a way for the central bank to provide easy credit to the government.[38]

During Takahashi's term, there was virtually no formal mechanism for keeping in check the ever-growing budget demand to fund the military. Takahashi's presence was an agent of fiscal discipline in itself: the governance of fiscal policy depended on his own capabilities and will.[39] During the budgetary process of fiscal year 1936, the Ministry of Finance, under Takahashi's leadership, tried to reduce the fiscal deficit. While it succeeded in reducing new government bond issues to some degree, the reduction was far from the level required. The negotiation increased tensions with the military, paving the way to Takahashi's assassination by a group of militarists on 26 February 1936.

A complete loss of fiscal discipline ensued as Japan moved to a wartime command economy.

Conclusion

We can draw a number of historical lessons from the Japanese experience during the 1920s and 1930s.

First, Japan was unable to correct the instability of the financial system until the government adopted decisive measures on two fronts in the face of the financial crisis of 1927: the massive injection of public funds by indemnifying against the losses of the central bank, and structural reforms in the banking sector through the promotion of bank amalgamation and other measures of that sort.

Second, a combination of macroeconomic stimulus policies provided an effective way to deal with the world depression of the 1930s. Currency depreciation, fiscal stimulus and easy monetary conditions helped Japan recover early from the Great Depression. We can note here that the shift in expectation from deflation to inflation was chiefly the result of the currency depreciation, not the Bank of Japan underwriting of government bonds. The mechanism by which the expectation was formed in Japan was what we would expect in a small, open economy run under a fixed exchange rate system.

Third, Takahashi's regime lacked an institutionalized mechanism to govern fiscal policy. Fiscal discipline was maintained by the personal capabilities and will of Takahashi himself. Japan failed to establish a new mechanism to ensure fiscal discipline. And Takahashi's fiscal policy relied upon easy credit to the government by the central bank through the underwriting of government bonds. These policy settings weakened the governance of fiscal policy.

Acknowledgement

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Part IV
Lessons for the Future

12

The Euro and the Gold Standard: What are the Lessons?

Anders Ögren and Lars Fredrik Øksendal

The gold standard in historical perspective

The comparative advantage of the historical profession is undoubtedly the past. Insights into the past are important for understanding the present, but do not easily translate into well-founded forecasts for the future. Moreover, historians, and even economic historians with legs both in the humanities and in the social sciences, are by inclination reluctant to see further ahead. Often, historians are better equipped for asking the right questions than making bold predictions.

At the end of a volume exploring the experience of the gold standard peripheries, we are nevertheless tempted to say something on the present with possible bearings for the future. One reason for this is the timeless character of the objective under scrutiny. The scene – a world of global finance inhabited by sophisticated players and advanced instruments – might seem very different than a century ago. However, the ultimate objectives of monetary policy are much the same, to provide a stable currency and an efficient payments system. Central bankers and monetary authorities of today struggle with the same fundamental issues as their predecessors did before 1914: the maintenance of credibility, the challenges of adjustments and the desire for financial stability. Moreover, the asymmetry between core and periphery are still present: small economies continue to be regime takers with limited influence over the global regime. Furthermore, even the assumption that the scene is very different might be open to question. As a minimum, most will agree that the international monetary system of the early twenty-first century maintains many of the normative features of the classic gold standard. The notable exception is the present lack of fixed exchange rates. Nevertheless, with the coming of the Euro, even this difference is removed for most of Europe.

The most important reasons, nonetheless, why we think it is worthwhile to consider if there are any lessons from the gold standard are found in the findings presented here. For the peripheries, the gold standard was very much a successful regime, even for countries that occasionally strayed from their commitment to it. Arguing that the gold standard before the Great War was a success provokes nobody. After all, this is the point where most scholars would be in agreement. How the success came about, however, is still subject to controversy. We find the key to the success *not* in the theory of a semi-automatic adjustment mechanism or in central bankers stubbornly pursuing a single criterion objective, the nucleus of the traditional gold standard understanding. The strength of the gold standard, as we see it, lies not in theory but, rather, in how the regime worked in practice. The findings presented here point to central banks that were committed to gold convertibility but which, at the same time, were deeply sensitive to their function in the domestic economy. In consequence, they craved some freedom for policy manoeuvre. Importantly, although central bankers, of the past as well as the present, might pay lip service to rule-based monetary policy – and, in certain situations, might be prepared to take whatever actions needed for maintaining credibility – very few would happily put themselves in a position where there was no manoeuvrability left. How the room for discretion was established differed between countries, reflecting individual constraints, traditions and economic position. The scope of this room varied between countries and over time. At times, it could be close to negligible, leading to unfettered adjustments taking place. In other instances, countries experienced periods where the scope for manoeuvre translated into freedom to pursue discretionary objectives, even in the longer run. No country had a text book gold standard experience. The point here is not that no adjustment took place, it obviously did and at times in quite a harsh manner, but that the regime at the same time rendered central bankers certain flexibility.

The key to this surprising flexibility must be partly assigned to how the gold standard came about. No grand design can be identified; no regime was imposed from above. The origins of the specie regimes of the nineteenth century were the choice of single countries to link their currencies to silver and, later, gold. Thus, the international character of the regimes was rooted in the fact that currencies were linked together through a common anchor. Although an external anchor was motivated by the desire for currency convertibility, domestic considerations were strongly present. Chief among them was the desire for monetary stability as a fundamental for an efficient domestic payments system.

A number of issuing banks, the probable best characteristic of embryonic central banks for most of the nineteenth century, were established to restore the currency in the aftermath of the inflationary havoc of the Napoleonic wars. These banks had a twofold obligation: to provide monetary stability and an efficient payments system to encourage the domestic exchange of goods and services. Moreover, banks of issue came to play a pivotal role in the development of the financial system and foster economic growth. For many, issuing banks were an integrated part of nineteenth-century nation-building. In essence, the gold standard regime was built from below and the formation of policy was influenced by a number of domestic concerns rooted in the legacy of individual countries.

In practice, the gold standard regime rendered flexibility for countries of the peripheries to address their particular constraints and challenges while, at the same time, honouring the fixed exchange rate commitment of the regime. One reason for this was that, in pursuing discretion, banks did not waver far from the commitments of monetary stability. Thus, the flexibility we identify must not be understood as a warrant for any radical experiments. The room for discretion was, thus, closely linked to credibility. If international markets did not find the commitment of individual countries credible, the room for manoeuvre withered away. Countries in the peripheries struggling with maintaining credibility – either because of economic structures, or wobbly monetary discipline – often severed the formal link to gold. Portugal, the second country to adopt the gold standard after the UK, abandoned it in 1890 in relation to the Baring crisis and the strain this crisis put on the international capital market. Spain for long periods shadowed gold, thereby obtaining some latitude. Some Latin American countries tended to have an on-and-off relationship to the regime. For the advanced periphery of Europe, probably the leading beneficiaries of the international regime, credibility was extremely seldom an issue.

But 'credibility' as an explanation for the success of the system is like a black box – it does not really address the issue of why the system managed to survive for four decades, not to mention the fact that, during this period, it expanded and overcame several smaller and major crises. In this book, we have seen that what the gold standard provided was a common anchor, but also surprising freedom for individual economies to organize their domestic monetary systems in such manner as they found fit. Beyond these points, the endurance of the gold standard reflected an age of political stability, increased internationalization of financial capital and, although at times interrupted by setbacks, of economic growth.

The Euro in historical perceptive

The member countries of the European Monetary Union share many similarities with the gold standard, as well as key divergences. One is the world scene: present is a variety of differing monetary regimes, which makes it hard to refer to an international monetary system *in the singular*. This is the case even for Europe. Within the European Union, countries have chosen the other extreme from the gold standard by adopting floating exchange rates based on domestic price stability (for example, Sweden and the UK), countries that to some extent have followed the classic gold standard by adopting a common standard by fixing their exchange rate to the Euro (Denmark) and the countries of the Euro zone that have opted for the most fixed exchange rate of the all – a monetary union based on one common central bank.

In the 1990s, in the run-up to European monetary unification and undoubtedly inspired by contemporary events, a small body of scholarship was produced highlighting the older, monetary unions of the gold standard era. However, neither the Latin Monetary Union (LMU) nor the Scandinavian Currency Union (SCU) qualifies as a modern monetary union. These unions were practical arrangements, above all in terms of providing a common circulation of token coins, but each country maintained their issuing banks. No central monetary authority was put in force. Moreover, even within a limited arrangement such as the LMU discipline became an issue as one country, ironically Greece, fell for the temptation to over-issue token coins.[1] Moreover, and more importantly, the monetary anchor for the older unions was silver (early LMU) and gold (later LMU, SCU). Thus, most of the integration or stability effect attributed to them in the literature in reality reflected the impact of the international monetary regime. As the demise of the SCU exemplifies, the stability of the union was lost from the movement the gold standard was abandoned at the outbreak of World War I and the Scandinavian currencies started to fluctuate wildly against each other despite the fact that all three countries remained neutral. The lack of one joint central bank has been used by some as a rather ahistorical explanation for the fall of the SCU. In the Euro system, with one common central bank, such a ground for instability is removed. However, after just over 10 years in existence, the Euro is already under heavy pressure and there is reason to be concerned for the possibility for the Euro to survive as a monetary system in its present form.

In reality, the Euro has no predecessor worthy of mention. Closest to a relevant comparison might have been the Federal Reserve System in

the US, with one common central bank but with each state supposed to be liable for its own debt. However, the comparison ends there and the two hardly represent a unique match. Despite the power vested in the states of the Union, the federal government is enjoying a considerably stronger position than the European Union. Moreover, when the Federal Reserve System was instigated in 1913, a monetary union had already been in place for more than 40 years. Furthermore, although the US arguably does not constitute an optimal currency area, it is a least much closer to being one than the European Union – not least due to the much higher labour mobility observed on the other side of the Atlantic.

The historical lesson is that building a deeply integrated international monetary system from above through political design is difficult. In the 1870s, the widespread ambitions for a universal currency based on gold recognized at the conferences in Paris in 1868 and 1870 proved futile.

In contrast to the gold standard, the origin of the Euro was always more political than economical in orientation. Although the vision of economic benefits was important for the creation of the Euro, the political dimension was critical along at least two axes. First, the case for monetary unification can never been seen as independent of the larger, political desire for European integration. Moreover, when first adopted, the Euro became the most significant prestige project in the history of the European Union. The fate of the Euro becomes increasingly tied to the future of the Union; its survival even more important than the underlying economic fundamentals. In this sense, the Euro represents political risk of a higher order. Second, as a political scheme designated from above, the Euro zone did not have much similarity to Mundell's definition of an optimal currency area. Quite contrary, from the outset the Euro was an instrument for fostering ever-increasing political and economic integration, in this manner eventually turning Europe into an optimal currency area. However, reality has a definite tendency to catch up with-the best laid plan. With the fundamentals not ripe for a single currency, the Euro became a potential source for macroeconomic instability.

The Euro should foster integration, but a monetary union, quite paradoxically, assumes deep integration to exist in the first place in order to work properly. Otherwise fiscal, financial and monetary imbalances will be transferred from one part of the area to another.

The Bretton Woods system constituted the most impressive attempt at creating a regime from above. However, this regime rested on very specific circumstances: the unsurpassed economic strength of the US in the

first postwar decades. As early as the late 1950s, the signs of a weakened hegemon were present as catching-up removed the structural imbalances that had singled out the US for leadership. By the end of the 1960s, American global military commitment and her deteriorating balance of payments had made the hegemon dependent on borrowing. With Richard Nixon putting the dollar off gold, the hegemon abdicated and Bretton Woods as a fixed exchange regime ended. Moreover, the Bretton Woods regime, contrary to the Euro, positively sheltered domestic policy autonomy through features such as including capital controls, discrimination against creditor currencies and the possibility for devaluation in the event of persistent structural imbalances.

Perhaps as a result of historical experiences with the gold standard and the Bretton Woods regime, the issue of the power over the currency has been solved by the instigation of one central European authority, the European Central Bank, to manage the issuance of currency. This means that the EMU has truly become more international than the gold standard.

During the gold standard, as stated, countries held their own central banks and issued their own currencies tied to the gold; there was also a direct link between the fiscal and the monetary system. Thus, in reality, it was an international monetary regime based on national units. As national spending, the fiscal system and the monetary system are fundamentally entangled, this national versus international level makes a difference. In the Euro zone, decisions concerning spending and taxes are all made at the national level, whereas monetary policy is made internationally by the European Central Bank.

In the gold standard, the more central economies issued high-powered money for the entire monetary system. Holdings in British, French and German currencies, in the form of liquidity or as public debt, were the basis for monetary issuance in more peripheral gold standard countries. This means that when the UK, France and Germany increased their debts, other countries within the gold standard system would buy this debt and use it to back their own monetary issuance. But it also means that, if any suspicion arose as to whether any of these countries could service their debt, they would lose their position as potential reserves. The gold standard period is filled with such incidents when currencies gain or lose their position as central bank reserves.

The question in the case of the Euro is which country's (or countries') debt is supposed to be reflected in the Euro. Formally, leadership of the Euro zone rests on the collective through the European Central Bank. In reality, leadership rests on a nucleus of major economic powers – most

notably Germany and France, each a single economy with its own agenda and its own debt.

Not only can this lead to imbalances, as interest rates are set internationally but borrowing is made nationally, but it also affects the likelihood of governments being able to act as lender of last resort, as it is not possible to use the national central bank to increase liquidity temporarily on a national level. Moreover, additional actions during financial and banking crises (such as bailouts) require that governments increase their spending, and thus have to increase their borrowing or the taxes to fund such a measure. All the measures made on a national level relate to monetary policy as well, but monetary policy is conducted on another level.

The question is also who will provide the high-powered money to be used as reserves when a lender of last resort is needed? That is, which country or countries will provide the capital (and in what currency) to this international lender of last resort. At present, no one would hold Greek, Portuguese or Irish debt as backing for their own money; yet these still remain part of the holdings denominated in the Euro issued by the European Central Bank.

Under the gold standard, a country had to fend for itself, with no international lender of last resort. Ultimately, it was down to the credibility in international markets of each country whether assistance was forthcoming in times of distress. In the Bretton Woods system, countries also had to fend for themselves to a certain degree, but the system also meant the postwar emergence of an international lender of last resort (the International Monetary Fund – IMF) to overcome temporary balance of payments problems. Later, and more particularly, the ECB also prepared to help countries to overcome balance of payments problem. The question within the Euro zone is, who will pick up the tab? There is, of course, an immense difference between Germany issuing debt on the international market and Greece doing so – which means that Germany can provide capital cheaper in such circumstances. However, from a German perspective, such an increased debt to pay for bailing out others increases the costs for Germany if it needs to borrow for its own fiscal spending. It can be solved by the European Central bank issuing currency, but this will make all the holders of the Euro pay through inflation and lowered exchange rates and, in the long run, this will deteriorate the credibility of the Euro completely.

We should also not forget that an international lender of last resort, i.e. that someone else is prepared to bail out misdemeanours, might have the adverse effect of encouraging a mindset where the key thought is that someone else will pick up the tab if something goes amiss.

The issue of public debt and structural deficits was obviously a source for unease for those concerned with the economic fundamentals of a monetary union. The solution was to adopt a kind of 'one size fits all' approach for prudence through the so-called convergence criteria. Prudence was to be safeguarded, as the countries planning for Euro participation agreed not to allow their public debt to exceed 60 per cent of GDP and that the deficit in public spending should not exceed 3 per cent annually. Writing some 15 years after the adoption of the convergence criteria, the rules for prudence appear somewhat hollow. One obvious example is the galloping public debt of Greece, closing on three times the level stipulated by the criteria. Much can be said about Greek bookkeeping and the manner in which that country went about meeting the criteria in order to qualify for the Euro. However, blaming it all on the Greeks is rather myopic. In reality, this highlights the problem of the Euro as a political design: The convergence criteria became a credibility excersise in order to reassure those worried over economic fundamentals.

Although the present concern for Europe is Greece, arguably an even more pressing long-term challenge for the Euro is how the criteria have been bent to accommodate the needs of major economies such as Italy and Spain, as well as the two locomotives of Europe – France and Germany. Violations from a smaller economy are one thing; this becomes something entirely different when the culprits are those to whom one looks for leadership. Rules are important, but they have to be enforced. If the rules are too restrictive, they should not be bent in a haphazard fashion, but be revised cautiously.

The key issue with the 'convergence criteria' and the 'stability pact' is not that there is anything fundamentally flawed with the way they have been designed; it is that they have not been taken sufficiently seriously to be enforced. The key challenge that undermines rule enforcement is that monetary policy formation takes place at the European level, while fiscal policy is left overwhelmingly to domestic handling, contrary to the situation one hundred years ago when both monetary and fiscal policy a country were conducted on the same level: nationally.

An important part of the gold standard system is that, despite the focus on gold, small countries, peripheral countries or highly-indebted countries always had to denominate their foreign debt in the lender's currency. This means that countries adhering to the gold standard would see their foreign debt increase if they chose to abandon the gold standard by devaluing their currency.

If countries were disciplined by international capital markets during the gold standard, entering the Bretton Woods system meant obeying to

the rules of capital controls. A way around the international capital markets would be to combine domestic fiscal choices with a fixed exchange rate. All in all, this tells us that the more integrated a monetary system, the more political sacrifices (in terms of autonomy) the countries in question have to make. Taking away the influence of international capital markets, the monetary union actually has to undertake the disciplinary measures that the international capital markets otherwise would impose on political and fiscal choices.

We should also remember that countries with high debt burdens or under debt restructuring would stay out of the gold standard (Greece, for instance, did not join the gold standard until its very end in 1910). Or they would have to be bailed out if the pressure became too high: Portugal abandoned the gold standard in 1890. The Euro zone does not have such an escape facility. For anyone with an eye for money from a historical perspective, this is a fundamental flaw that will bring increased misery to single countries and instability to the Union. Put simply, you cannot undertake long-term planning on the assumption that the future will be plain sailing; or, to be quite precise, on the assumption that the trend towards economic integration and convergence in Europe will suffice to meet any accidents that might occur. No other international monetary regime has gone without an escape clause. Just as countries could chose temporarily to leave the gold standard, under the Bretton Woods system countries had the opportunity to devalue currency if the regime became too tight. Of course, it can be assumed that the weaker the opportunity to exit, the stronger the commitment to the monetary regime. But, on the other hand, if no disciplinary forces are in place, and given national sovereignty in a world of global capital, the strength of the commitment is under question.

Without an opportunity to exit, a country in grave distress might find itself caught in a situation that only aggravates the situation, while the credibility of the regime suffers. Joining the Euro, much as with adopting the gold standard in the past, is akin to tying oneself to the mast – but contrary to latter also involves cutting the lifeboat loose. The absence of an escape clause reflects the political origin of the Euro. In the political world of an ever-closer Union, failure is not an option.

At present, a country cannot stray from commitment to the regime – not even temporarily. Before 1914, leaving the anchor or only partially observing gold standard commitment was a repeated feature of crisis management. Thus, the problems of one country easily become a challenge for the whole Euro zone, underlining the interplay between political structure, the fiscal system and the monetary regime.

The differences in fiscal-political structures are hugely important for understanding the present situation. If the political structure in some countries – say, a lack of public trust making effective tax collection impossible and leading to a tradition of taxing by way of inflation – is contrary to economic prudence, the only way that these countries can remain members of the Euro zone is by having others pick up the bill. This funding has to come from somewhere, most probably the more well-managed economies of the EMU. Although the world is becoming smaller, differences in national political structure are still important.

From the perspective of this book regarding peripheries in international monetary systems, we have to ask: why do small, open and vulnerable economies want to join an international exchange arrangement? Why do they want to submit to the apparently harsh conditions that belonging to an international monetary regime implies? Belonging to an international monetary regime, such as the gold standard or the Euro, signals a certain economic prudence. Perceptions of prudence influence risk expectations: investors will view investing in a country as less uncertain and will consequently be prepared to lend money at lower interest rates.

What the Euro renders to high interest rate, inflationary prone economies is *borrowed credibility*. One obvious example is the striking way interest rates fell for public debt as Greece joined the Euro, thus weakening the disciplinary effect of international money markets, reducing the fiscal burden of lending costs and inducing her to amass even further public borrowing. The results – for Greece and Europe – are presently being felt. The situation in Ireland is another version of the same situation: with interest rates set to target the Euro zone inflation rather than the higher domestic inflation rate, real interest rates in Ireland turned negative, fuelling her housing boom. When the international scramble for liquidity following the sub-prime crisis burst the bubble, Ireland had to be bailed out by her European partners. Ireland is a case in point, demonstrating how a common monetary policy increases the risk of macroeconomic instability when the area in question does not meet the criteria of an optimal currency area. While pegged currencies with a common anchor, such as the gold standard, may have the same effects in fostering economic integration, this does not necessary transfer the imbalances to the same extent as a rigid monetary union.

Fiscal and monetary issues are, as we have seen, strongly interconnected. Under the gold standard, countries with a high debt burden and low economic growth would have a tough time staying within the regime: As high debts are a result of a structural deficit in the current account (i.e. imports of goods and services far exceeds imports for along

period of time), there will be a steady demand for foreign currencies (gold); it would be virtually impossible to keep the holders of domestic money from systematically redeeming it. As a consequence, gold reserves would quickly be depleted, eventually destroying the basis for the monetary regime. The problems would be aggravated if the highly debted country resorted to printing money to pay for imports, as the domestic inflation would increase and deviate from the global level.

This structural deficit in external economic relations will have to be financed by capital from abroad – by borrowing on the international capital market. During good times (i.e. periods of capital abundance) countries can continue to increase their debt at low costs, even if domestic inflation is high. During such periods, it is easy for economies with structural problems to continue to deteriorate their economy because increased economic discipline is never popular and is politically costly. But, when the tide turns, it becomes more difficult to borrow capital, and costs increase; this will put the country in a situation where it will have to increase discipline if it is to continue to have access to international capital.

For some countries, *borrowing credibility* by joining the Euro or pegging to a hard currency has been seen as a key to solving domestic economic instability. However, credibility seldom comes cheap, and borrowed credibility seldom lasts if not supported by appropriate measures. If a country pegs to a hard currency without having the stomach for it, the end result might well be misery. The Latin American debt crisis in the 1980s and the Argentine pegging of the peso to the dollar in 1992–2001 are cases in point.

The future of the Euro

As we can see, in reality there is no easy way to remain on a fixed exchange rate. Overall, it can be argued that fixed exchange rates are 'good weather regimes'. As long as the sun shines – in terms of economic growth, cheap capital and increasing asset values – everybody can join a monetary regime. However, when the climate changes, growth declines, capital becomes expensive and asset values fall, it is costly to stay in. We should not forget that a stable currency, in the meaning of external monetary value (a fixed exchange rate), means more instability in domestic prices when periods of inflation are met by periods of deflation.

One way out of the dilemma would be to loosen up the Union and allow every nation to partake in the Euro on their own account by making the Euro a common anchor. But, in reality, this would be the same

as dissolving the EMU. And the problem for the participating countries to solve will, again, be how to stay on the fixed exchange rate as a unilateral commitment – the post-Bretton Wood era with all the short-term exchange rate arrangements, and especially the European Monetary System crisis of the early 1990s, have shown how difficult – not to say impossible – such arrangements are to keep.

There are also discussions on limiting or even denying access to global capital markets. The question is, first and foremost, whether this really is in the best interests of the countries in the Union. Also, the technological changes that have occurred for capital transfers since the Bretton Woods system are enormous. Today, capital is transferred within seconds, and specialized trading programmes can make millions of transactions on different markets in fractions of a second. Thus, keeping capital from flowing would be very costly.

Some might argue that 'going back on gold' would prevent problems. This is a suggestion that always surfaces during times of monetary and financial turbulence, and it would be handy for a book about the gold standard to conclude with such a catchy proposition. However, the thinking that the gold standard has brought us to is not that it was the gold that made the system work, but the fact that there was economic growth, access to international capital and that each country managed its debt, which was especially the case for the more important economies in the system – England, France and Germany. The more peripheral countries that were part of the system enjoyed a brief period of *borrowed credibility*, but had to solve their own monetary and fiscal problems swiftly to stay in the regime.

Based on the insights in international monetary regimes and sovereign debt, we will however, for once, leave the comforting ground of the economic historian's study of the past to make some bold predictions and policy implications concerning the Euro.

As a fixed exchange rate regime implies domestic price adjustments through more volatile prices (inflation and deflation), being on the Euro means that prices must adjust down in countries with structural balance of payment deficits, higher debts and lower economic growth compared with those with a balance of payment surplus, lower debts and higher economic growth. Thus, even with capital transfers (as in the case of the US) there is a large risk that we will continue to have vastly different economies in different parts of the Euro zone (again, as in the US), despite the efforts at integration within the EU, and especially the EMU.

Thus, for the Euro to survive as a strict monetary union with one single central bank, both monetary and fiscal integration have to increase.

Just as the implementation of a single currency is a political project, so is the transformation into a more homogenous monetary and financial zone. But it means that debt prudence has to be ensured through fiscal harmonization and the opportunity of transferring funds between the nations of the Euro zone, as in the US.

Establishing a monetary union as a vehicle for economic and political integration is probably more economically and socially costly than was expected. Europe is no optimal currency area; there is no single European economic cycle, and the level of economic and political convergence is too small. With monetary policy decided at European level and fiscal policy at national level, macroeconomic coordination suffers. This means that the Euro is at a crossroads: it can either continue as a mainly political project, or it can be based on economic fundamentals.

Continuing to pursue economic integration within the EMU as it is would require substantial changes in national policies. First, fiscal spending would have to be under the control of the EU. It would be essential that tax systems were harmonized, which in turn also implies harmonization of welfare policies (including the retirement age, unemployment benefits, health care, schooling and so on). We do not mean that these issues have to be homogenous, but it is unlikely that large parts of the economies in the Euro zone could have a large informal economic sector coupled with an inability to collect taxes and yet still maintain a high level of social services. Moreover, the political structure is vastly different, as some countries suffer from the 'Argentinian syndrome', where the central state has to bail out the debts undertaken by regional and local governments. In exactly the same countries, the legitimacy of the central state is weak, distrust of the central state may have political and economical historical roots, but it is difficult to solve such problems by imposing a system from above, or even from the outside. As a matter of fact, it seems perfectly rational to distrust such activity and just move the 'Argentinian syndrome' further up the ladder by having the members of the Euro zone bail out local debts. Thus, the simple conclusion is that the *political structure* has to change in the countries that are on the brink of falling out of the EMU before a viable monetary union can be created. And such political change is unlikely to be forced upon members by a monetary union.

Thus, we believe that a monetary union must be based on economic fundamentals. The Euro ought to be decoupled from the wider issue of political integration. The future of the European Union, and its considerable achievements over the last 60 years, must be seen as independent of the single currency. This will probably create a multi-tiered

European Union with different levels of commitment and different paths to integration.

A Euro based on economic fundamentals still means that the citizens within such a monetary union hand over part of the fiscal power to the European Union. And, as the issuer of the currency, the European Central Bank should also have the opportunity to borrow money on capital markets by issuing some kind of 'Euro bonds' that are not attached to any specific country but instead to the Euro zone it represents in general.

Such a solution requires stronger commitment from the countries in the Euro zone, as this debt now becomes an equally relevant matter for all countries in the Euro zone. This also requires further harmonization of the fiscal systems. But such harmonization is less painstaking between countries that share common economical and political grounds in terms of fiscal spending and welfare.

Capital transfers and common funds to deploy in times of distress have to be instigated and financed by the participating countries in a transparent and economically just way. In the same manner, there must be clear rules for how and under what circumstances countries can receive support from the common fund.

Finally, on the issue of enforcement and flexibility, an exit option works two ways. It can be used by an economically important part of the union – a centre – to invoke discipline by threatening to withdraw from the union. It can also be used to threaten less well-managed countries that they will lose their status as members of the union if they do not strive for fiscal balance. Of course, this gives more power to the central economies at the expense of those at the periphery – but, on the other hand, the question is whether those countries that would refuse to leave a monetary union under any circumstances are those that really should be part of a monetary union in the first place. Also, peripheral countries should be able to leave if the central economies misbehave. In short, there should be an exit option.

Notes

1 The Case for the Peripheries

1. Flandreau and James (2003).
2. Ford (1962); Triffin (1964).
3. Martin-Aceña and Reis (2000).
4. According to Sayers, the Bank of England's maintenance of its gold reserves was 'the nation's and the world's assurance that claims in pound sterling were convertible on demand into gold at a fixed price' (Sayers, 1976: 28).
5. McCloskey and Zecher (1976, 1984).
6. Flandreau and Zumer (2004).

2 Central Banking and Monetary Policy in Sweden during the Long Nineteenth Century

1. There is a virtual flood of literature on the so-called 'rules of the game' in relation to the working of the gold standard as an international exchange rate system. All empirical studies show, however, that central banks also during the era of the gold standard frequently used sterilization (see, for instance, Bayoumi and Eichengreen (1995), Bloomfield (1978), Bordo (1984), Bordo and McGouldrick (2005), Bordo and Meissner (2005), Eichengreen and Flandreau (1994), Flandreau (2006), Flandreau and Sussman (2005), Flandreau and Zumer (2004).
2. See, for instance, McCloskey and Zecher (1985), Reis (2007) and Triffin (1985).
3. Although the rhetoric changes, this still heads the central banks' agenda. In 2006, the Riksbank was criticized by the IMF for running an excessively tight monetary policy. Its focus on the value of the currency (price stability) meant it paid less attention to economic activity in terms of keeping up levels of employment. The instigator for this criticism was, of course, the Federal Reserve Bank (*Financial Times*, European edn., 29 November 2006: 4).
4. Such a flawed and simplistic interpretation of the situation in Sweden is, for instance, apparent in the free banking literature (see Jonung, 1989; Schuler, 1992; and Selgin, 1988).
5. The attempt to press the case of Sweden into the definitions of the money supply and its components using Milton Friedman's scheme for a monetary system – where money either has to be in the form of notes – which has to be defined as either currency (base money) or deposits (inside money created by the banking system) – has only led to a confused view of how the Swedish financial and monetary system really worked. For example, Jonung in writing referred to the Enskilda bank notes as base money (the public's preference for holding currency) but, when he calculated the currency money ratio, he defined it as commercial bank deposits (see Jonung, 1975).

6. Ögren (2006).
7. Jonung argued the Enskilda bank notes to 'be of better quality than the Riksbank notes'. The evidence was simply that more Enskilda bank notes were in circulation than Riksbank notes, and this should mean that the public preferred the former (see Jonung, 1989). Jonung never considered the possibility that most Riksbank notes actually ended up in the Enskilda banks' reserves. It has also been argued that the notes of the Stockholm Enskilda Bank were used as reserves since it for a few years is said to have functioned as a clearing central (see the works by Nilsson on A.O. Wallenberg, the founder of the Stockholm Enskilda Bank (1985, 1991, 1994, 2000). There is, however, no empirical proof whatsoever that other commercial banks held notes from the Stockholm Enskilda Bank as reserves (see Ögren, 2003, 2006).
8. In reality, this is a choice that the commercial banking system always has, even today, since it is not forced to transform its reserves into liabilities as deposits (or, for that matter, notes).
9. See also Ögren (2008: 2).
10. BaU 1840/41 §1.
11. Among the fiercest critics of the Riksbank's monetary policy in the nineteenth century is Sven Brisman, who labelled the Riksbank 'a cold-blooded' actor that frequently used a policy of strangulation. In the crisis of 1890, the Riksbank used the same measures as during the crisis in 1878/79. But what Brisman denoted as a policy of strangulation that led to the destruction of the financial system and the economy as a whole in the late 1870s, he instead deemed as sound monetary policy in relation to the 1890 crisis. Brisman (1931: 189–91). See also Nilsson (1981, 2000) who, from the point of view of prominent banker A.O. Wallenberg, has adopted the same view. The basis for this interpretation is a list of measures to be taken by the Riksbank in the event it needed to decrease its liabilities in circulating monies that was adopted in the 1830s in relation to the adoption of the silver standard. More 'modern' monetary policy tools are all mentioned here, such as discount policy and open market operations of different kinds (purchasing, selling and discounting bills of exchange and bonds). But the list starts with the cutting of Riksbank credits to businesses in order to decrease the money supply.
12. Davidsson (1931: 205–12).
13. Lobell (2000).
14. Correlation analysis confirms this negative relationship between changes in the Riksbank's reserves and its contribution to the monetary base.
15. Ögren (2009).
16. This might be a result of the expected ending of the Enskilda banks' note issuance in 1903 (see Ögren, 2011).
17. Ögren (2003, 2007).

3 Freedom for Manoeuvre: The Norwegian Gold Standard Experience, 1874–1914

1. Keilhau (1952).
2. For an excellent summary of the research frontier, see Reis (2007).

3. Flandreau and James (2003).
4. If not stated otherwise, all data used in the chapter are taken from Eitrheim *et al.* (2004). The datasets of the Historical Monetary Statistics for Norway project of Norges Bank are available at http://www.norges-bank.no/en/price-stability/historical-monetary-statistics/
5. A (perhaps unnecessary) disclaimer: this section is not intended as an exhaustive examination of the research frontier but, rather, more as an eclectic presentation of key trends in scholarship important for the formation of the present author outlook and with relevance for the situation in Norway.
6. Reis (2007).
7. Bloomfield (1959).
8. Triffin (1964).
9. Davutyan and Parke (1995), Øksendal (2009).
10. Capie *et al.* (1994).
11. Ford (1962).
12. Triffin (1964).
13. Ford (1962).
14. Martin-Acena and Reis (2000).
15. Triffin (1964).
16. Kindleberger (1984), Eichengreen (1992).
17. Flandreau (1997).
18. Eichengreen (1992).
19. Bordo and Kydland (1996).
20. Bordo and MacDonald (2005).
21. Bordo and Rockoff (1996).
22. Flandreau and James (2003).
23. Øksendal (2008a).
24. Øksendal (2006).
25. Jæger (1916: 117–18).
26. Eichengreen (1992).
27. Øksendal (2006).
28. Øksendal (2008b).
29. Hertzberg (1877): 46.
30. Hertzberg (1877): 44–5.
31. Kiær (1877): 100.
32. Hertzberg (1877): 27, 43.
33. Parliament (1882: 8).
34. Royal Commission (1884: 19).
35. Parliament (1888: 13).
36. Parliament (1888: 13).
37. These patterns are discussed extensively in Øksendal (2008b).
38. Aschehoug (1893).
39. Parliament (1892).
40. Parliament (1882: 28).
41. Øksendal (2008b).
42. Skånland (1967).
43. Øksendal (2007; 2009).
44. Norges Bank (1907, 1912).
45. Norges Bank (1907).

4 Price Stability in the Periphery during the International Gold Standard: Scandinavia

1. Willis (2003: 6–7).
2. Willis (2003: 7).
3. Bordo and Schwartz (1984); Eichengreen and Bayoumi (1995); Foreman-Peck (1995: 154–60).
4. Bergman *et al.* (1993: 507–17).
5. Talia (2004a).
6. See e.g. Øksendal (2007: 125–48).
7. On the Norwegian process into the Scandinavian Currency Union, see Øksendal (2006: 187–213).
8. Talia (2004b).
9. Eitrheim *et al.* (2004); Eitrheim *et al.* (2007) www.norges-bank.no/Templates/Article____42332.aspx and http://www.riksbank.com/templates/Page.aspx?id=27394, Hansen (1983: 229–374).
10. Friis and Glamann (1958), Andersen and Pedersen (2004: 99–182).
11. Abildgren (2010: 2–24).
12. Hansen (1983: 301–18).
13. Hansen (1983: 360–70).
14. Hansen (1974: 245–48).
15. Pedersen (1930: 313–14).
16. Pedersen (1930: 189–206).
17. This has been presented in Grytten (2003: 61–79).
18. Grytten (2004: 47–98).
19. NOS (1969: 523–27).
20. In fact, it stretches further back in time, but that is not included in this work.
21. Circular, 4th Royal Norwegian Ministry, January 20th 1816 and Wedervang Archive, file 272.
22. Grytten (2007: 203–30).
23. Ramstad (1982: 471–93); Minde and Ramstad (1986: 90–121).
24. NOS (1978: 518–19).
25. Edvinsson and Söderberg (2008: 1–42).
26. Jörberg (1972); Myrdal (1933).
27. Statistika Meddelanden (2005).
28. Carlén (1997); Schön (1988).
29. Edvinsson and Söderberg (2008: 30–1).
30. Data provided on request by Statistics Denmark, Statistics Norway and Statistics Sweden.
31. NOS (1994: 290–93).
32. This is basically reflected, but not at all well quantitatively documented in standard text books on Scandinavian economic history, see e.g. Schön (2001); Johansen (1987); Hodne (1983).
33. Talia (2004b).
34. Eitrheim (2005: 1–17).
35. Keilhau (1952).
36. Øksendal (2007).
37. Bordo (1986); Klovland (1998: 309–44).

38. Moene and Wallerstein (2006: 18–35).
39. Benati (2008: 1004).
40. Batini and Nelson (2001: 383).
41. Andrews and Chen (1994).
42. Benati (2008: 1042).
43. Schenk (1999: 105–21).
44. Damsgaard Hansen (2001: 340–48).
45. Eichengreen (1997).
46. Hodne and Grytten (2002: 285–300).

5 Monetary Policy in the Nordic Countries during the Classical Gold Standard Period: The Wicksellian View

1. See Woodford (2003) and Gali (2008) for a comprehensive analysis of monetary policy in these models that assert interest rate as a primary instrument of monetary policy.
2. Eichengreen and Flandreau (1997).
3. Flandreau and Maurel (2001).
4. Eichengreen (1997).
5. Eichengreen (1997).
6. Bordo and Schwartz (1996); Morys (2008).
7. Bergman (1999); Bergman *et al.*, (1993); Flandreau and Maurel (2001); Henriksen and Kægard (1995); Jonung (1984).
8. Ögren (2005, 2006).
9. Danmarks Nationalbank (2005).
10. Eitrheim *et al.* (2004); Øksendal (2011).
11. Øksendal (2008).
12. Haavisto (1992); (Heikkinen and Hjerppe (1987); Hjerppe (1993).
13. García-Iglesias and Kilponen (2006a, 2006b).
14. Kuusterä and Tarkka (2011).
15. See for example Gali (2008), Woodford (2003), Goodfriend and King (1997), McCallum and Nelson (1999), Walsh (2003).
16. More precisely, as shown in Woodford (2003), $\varphi^{-1} \equiv (1-\beta\delta)\sigma$ where σ is the intertemporal elasticity of substitution of aggregate expenditure; $\kappa \equiv \Xi\eta\varphi/\delta$; $\Xi = \dfrac{(1-\alpha)(1-\alpha\beta)}{\alpha(1+\omega\theta)}$; δ is the smaller root of $\eta\varphi(1+\beta\delta^2) = (\omega + \varphi(1+\beta\eta^2))\delta$ and where ω is the negative of the elasticity of the marginal product of labour with respect to the level of output, α is a fraction of goods prices that remain fixed, and θ is the demand elasticity. η is the degree of habit persistence.
17. For details, see for instance Woodford (2003) and Gali (2008).
18. The utility function for real balances $\nu\left(\dfrac{M_t}{P_t}\right)$ takes the form:

$$\nu(M_t/P) = \frac{\nu}{1-\xi}(M_t/P_t)^{1-\xi}$$

The money demand equation under these preferences can be obtained by relying on the standard portfolio-balance equation which states that at optimum,

the marginal rate of substitution between consumption and real balances must be equal to opportunity costs of holding money. In other words:

$$u_m/u_c = i_t/(1+i_t)$$

The ratio u_m/u_c is obtained by combining the Euler equation related to optimal consumption and the Euler equation related to optimal real balances. Under our assumption of preferences, it turns out that $u_c = (c_t - \eta c_{t-1})^{-\gamma} - \eta\beta E_t(c_{t+1} - \eta c_t)^{-\gamma}$ and $u_m = \nu(M_t/P_t) - \xi$. Combining and log-linearizing these two equations, results in the money demand function given in the main text in equation 5.3.

19. We are indebted to Jouko Vilmunen for pointing to us this interpretation.
20. We are grateful to Matthias Morys and Anders Ögren for generously sharing some of the data mentioned in this chapter (p. 91).
21. For details, see, for example, Brooks and Gelman (1998).
22. For discussion, see, for example, Del Negro and Schorfheide (2008).

6 The Origins of Foreign Exchange Policy: The National Bank of Belgium

1. De Cecco (1974).
2. See Eichengreen and Flandreau (2009) for a discussion.
3. A number of details are dispersed across the single histories of each central bank, but no systematic account is available for the period before 1913. Jobst (2007), Reis (2007) and Øksendal (2012) provide elements on reserve management practices in Austria-Hungary, Portugal, and Norway respectively; albeit from a different perspective, Flandreau and Gallice (2005) give insights on the way peripheral European countries' deposits with international banks were managed. Eichengreen and Flandreau (2009) and Accominotti (2010) cover the interwar period.
4. For a taxonomy, see Borio *et al.* (2008a): 2–3.
5. Borio *et al.* (2008b).
6. The 2008 shock seems to have reversed this trend. Pihlman and van der Hoorn (2010) argue that since the burst of the crisis central banks have shown a markedly procyclical attitude in foreign reserve management. It is interesting to note that this massive flight to quality has also concerned bank deposits – traditionally considered a low- rather than high-risk asset. This suggests that the architecture of the international banking system has grown much more unstable than it used to be.
7. Of course, outsourcing reserve management to external managers is bound to constitute an additional source of procyclicality – as anecdotal evidence from the 2008 crisis seems to show.
8. See, for example, Goschen (1864).
9. Accominotti (2012) provides a description of the system through which bills of exchange were originated, and stresses the similarities between accepting and modern credit default swaps.
10. Courcelle-Seneuil (1857): 169–72.
11. Schnabel and Shin (2004).

12. Flandreau and Ugolini (2011).
13. This does not mean that bills always were the only exchange-traded securities entering central banks' portfolios. For instance, the Bank of Norway used to keep a portion of its reserves in sovereign bonds: Øksendal (2012).
14. Chapman (1984).
15. Contrary to bills, deposits did not bear a multiple guarantee.
16. Battilossi (2000), Eichengreen and Flandreau (2009).
17. Exceptions did exist. For instance, the Bank of Japan used to keep a portion of its reserves deposited with the Bank of England: Suzuki (1994). This kind of arrangement became much more popular in the interwar period: Eichengreen and Flandreau (2009). Detailed information about today's situation was impossible to find.
18. For the Belgian case, see e.g. PV CdA, 23 September 1850, 4 May and 12 June 1858, 29 October 1859.
19. Flandreau (1997).
20. Ugolini (2012).
21. The database is the one gathered by Ugolini (2012), but is complemented here with additional evidence collected from archival sources. Although a number of elements concerning the National Bank of Belgium's foreign reserve management practices can be found in Kauch (1950), no specific account of them existed to date.
22. Note that the National Bank of Belgium used to keep deposits with only one bank for each currency area – viz. with its 'regular correspondents' (see p. 122).
23. This was tied to the National Bank of Belgium's preference for holding short-term bills of exchange, and for holding them until maturity. As the ordinary duration of these monetary instruments was ninety days, maintaining a stable bill portfolio meant that maturing securities had to be continuously replaced by newly-discounted ones. This was done through the intermediation of correspondents: as renewal took place almost immediately, the National Bank of Belgium's deposits with these banks tended to be close to zero. When the Bank wished to diminish its exposition to a given currency, though, a semi-active divestment strategy was generally preferred to an active one: instead of being sold on the open market, foreign bills were simply not replaced by new ones at maturity. Such a strategy implied that the encashment of maturing bills produced a temporary increase in deposits with correspondents, which would only be converted into other currencies in a second moment.
24. However, Figure 5.2 also shows that one remarkable exception to this rule did exist. Deposits with the Paris Rothschild house behaved differently: they averaged around 2 million francs in 1852–53, but not less than 5 million in 1851 – constantly making for the overwhelming part of total foreign deposits. The exceptionality of the Rothschilds' case is discussed on p. 124.
25. All operations not implying any modification in the portfolio (viz. mere renewals of bills of exchange coming to maturity) are not taken into account here. This explains why the general totals in table 1 and those in Tables 6.3 and 6.4 do differ.
26. Open-window discounts of foreign bills were presented by the National Bank of Belgium as a service offered to the Belgian public, but could be discontinued

at any time: as a result, they were more similar to open-market operations than to standing facilities: Ugolini (2011, 2012).

27. Swaps of foreign currencies are highlighted in grey. The amounts purchased and sold through swaps are obviously equal.
28. The Treasury, to which the National Bank of Belgium acted as general cashier, regularly had to transfer money to De Rothschild Frères in Paris in order to pay for the coupons of Belgian sovereign bonds. This was performed through a repurchase of the Bank's claims on the Rothschild house.
29. Flandreau and Jobst (2005).
30. Ugolini (2012).
31. Ugolini (2012). The only exception was the reserve of French francs, which was never left to sink beneath a certain level (p. 124).
32. Kauch (1950): 92–9.
33. PV CdA, 8 March 1851, 12 August 1851, 2 March 1852, 13 April 1852, 6 May 1852, 30 October 1852.
34. In reality, interest rate risk (i.e. the risk of selling a bill at a higher discount margin than the one at which it had previously been purchased) was also a component of market risk associated with bills. However, as the National Bank of Belgium seldom adopted an active diversification policy (generally keeping bills in portfolio until maturity), interest rate risk was junior to currency risk.
35. Despite the non-negligible financial connections existing between Belgium and Austria (the exchange rate on Vienna was regularly quoted in Antwerp), the National Bank of Belgium refused to hold assets denominated in this important European currency because it was unconvertible. Nonetheless, the Bank occasionally happened to accept bills on Vienna, Milan, and Venice as collateral for repurchase agreements denominated in other currencies (PV CdA, 27 February 1851, 14 and 30 August 1851). That is why the Austrian currency area is included in Figure 6.3.
36. Ugolini (2010).
37. Helleiner (2003).
38. Parker Willis (1901).
39. This is confirmed by the fact that almost all purchases of Belgian francs implemented by the National Bank of Belgium outside Belgium (i.e. operation 1b in Table 6.1) were actually performed in Paris – which means that the city hosted the only liquid offshore market for the Belgian franc.
40. Cassis (2006).
41. This is also reflected by the fact that the Swedish Riksbank reacted to the 1857 crisis by originating mark-denominated bills: Ögren (2007).
42. Ugolini (2010).
43. These numbers include the remuneration of deposits by foreign correspondents – i.e. the other way than discount through which foreign reserves were made profitable.
44. 'Losses on rediscount' consist of the difference between the discount margin at which the Bank had bought bills and the one at which it resold them on the market: these are losses associated with interest rate risk. 'Losses on exchange' consist of the difference between the exchange rate at which the Bank had bought bills and the one at which it resold them on the market: these are losses associated with currency risk.

45. In 1853 (the only year for which details on profits from foreign operations are available), losses from rediscount and exchange amounted to 21 per cent of total gross profits from discount of foreign bills.
46. Ugolini (2012).
47. Note that numbers in Figure 6.5 do not represent yields, as the maturity of bills discounted is unknown. The figure gives the ratio of gross profits from discount to the volumes discounted. Albeit not a yield, this is a significant indicator anyway. As the treatment of bills implied a number of fixed costs, it was preferable for the Bank to hold bills of longer maturity (although not exceeding ninety days). In the case of open-window discounts of domestic bills, the Bank could not choose the maturity of the securities it purchased: as a result, the average maturity of its domestic portfolio tended to be shorter than its foreign portfolio. All other things equal, this meant a lower profitability of domestic operations with respect to foreign ones. Shorter maturity of bills is reflected by a lower ratio of gross profits to the volume discounted – as shown by Figure 6.5.
48. Kauch (1950): 122–8.
49. It was with the aim of detecting this kind of collusion that the Bank of England had put in place the sophisticated monitoring system described by Flandreau and Ugolini (2011). However, the National Bank of Belgium was not in the position of cross-checking the signatures on bills remitted by its network, and thus heavily depended on the rectitude of its correspondents.
50. For instance, in 1854 the ratings book of the old house of Crommelin described the Amsterdam Bischoffsheim bank as 'entirely or largely broken': Posthumus (1921: 202). Flandreau and Ugolini (2011) show that as late as 1865, the London Bischoffsheim house borrowed heavily from the Bank of England in non-crisis time – a behaviour associated with second- rather than first-order banks. In the same year, the head of the Paris Bischoffsheim house pledged for a laxer screening policy by the Bank of France, which refused to discount bills bearing less than three signatures: he did that by stressing the easiness of finding bad-quality endorsers if needed – a business to which he was apparently familiar: Kindleberger (1984: 230). In the 1870s, the London house would infamously emerge as the main issuer of junk sovereign bonds on the British market: see *Report ... on Loans* (1875).
51. Kauch (1950: 84–9); Ugolini (2012).
52. See e.g. PV CdA, 8 March 1851, 10 June 1851, 13 and 25 November 1851, 30 March 1852, 13 April 1852, etc.; also see Kauch (1950: 99–101).
53. Ugolini (2012).
54. Flandreau (1997).
55. This is always the case for interbank interest rates – as is, for instance, LIBOR today.
56. PV CdA, 6 March 1852.
57. Bussière (1992).
58. Ugolini (2012).
59. This seems to have been the case, for instance, at the Austro-Hungarian National Bank, where the centralization of foreign exchange operations to a specially-appointed body in the 1890s was coupled with the relaxation of the traditional links with merchant bankers: Jobst (2007).

8 Floating against the Tide: Spanish Monetary Policy, 1870–1931

1. The challenge to the traditional view of the gold standard began with Triffin (1964). More recently Flanders (1993), Bordo and Kidland (1995), Bordo and Rockoff (1996), and an excellent state of the art in Morys (2011).
2. Recent country studies that re-examine the monetary policy of the central banks, Contamin (2003), Ögren (2007), Reis (2007) and Jobst (2009).
3. Eichengreen and Flandreau (1996); Gallarotti (1995).
4. For the interwar period, an excellent summary in Drummond (1987).
5. The Spanish monetary experience has been studied by Martín-Aceña (1993 and 2000a); the gold standard issue has also been dealt with by Sardá (1948), Tortella (1994) and more recently in papers by Serrano Sanz, Gadea and Sabaté (1998), Cubel (2001), Llona (2001), Serrano Sanz (2004), García-Iglesias (2005) and Ródenas and Bru (2006). For the long-term evolution of the peseta exchange rate, see Sabaté (1993) and Aixalá Pastó (1999).
6. Three recent papers with the history of the Bank of Spain for the period 1874–1962, Tedde (2006), Tortella (2006) and Martín-Aceña (2006).
7. Sardá (1948) and Broder (1976).
8. Eguidazu (1978); Martínez-Ruiz (2000).
9. The relationship between the Treasury and the Bank of Spain in, Anes and Tedde (1976) and Martín-Aceña (1985). The link between monetary policy and fiscal policy in, Sabaté Sort, Gadea and Escario (2006).
10. Spain's international trade and balance of payments position in Tena Junguito (1992) and Prados de la Escosura (2011).
11. Sardá (1948: 183–4).
12. Junta Consultiva de la Moneda, 1876–1880, Record books: vol. 22859.
13. Nurkse (1944), Bloomfield (1959).
14. Martín-Aceña (1993).
15. See also White (1933) for France, Drummond (1976) for Russia, Dutton (1984) for England, Jonung (1984) for Sweden, McGouldrick (1984) for Germany and Reis (2007) for Portugal. For a review and summary see Michaely (1968), Drummond (1987) and Ford (1962).
16. Bordo and MacDonald (1997), Bordo and MacDonald (2005), Flandreau and Komlos (2006), Jobst (2009) and Flandreau (2008).
17. Eichengreen and Flandreau (1997).
18. Reis (2007).
19. Ögren (2007).
20. Bank of Spain, *Annual Reports* (1894: 29 and 1898: 26–7).
21. Serrano Sanz (2004: 73).
22. The Palmer rule established a minimum ratio of reserves of 33 per cent, which was calculated as reserves divided by sight liabilities, i.e. notes plus deposits. Spanish legislation established the ratio of reserves only with regard to notes, regardless of sight deposits. The gold reserve ratio would therefore be even lower if the sight deposits were also considered.
23. Conant (1915: 315–16); Serrano Sanz (2004: 80).
24. Martín-Aceña (1985).
25. Tortella (1970); Anes (1974a); Sabaté Sort and Serrano Sanz (2006).
26. Conant (1915: 318).

27. Martin Aceña (1993: 150–1).
28. Conant (1915: 314–15).
29. The Bank calculated the losses as the excess reserves multiplied by the discount rate. It justified these losses by saying that they were more than offset by its public credibility. By having large silver reserves, banknotes holders were assured that convertibility was never jeopardized (Bank of Spain, Annual report, 1898: 26–7).
30. The argument for the contradiction between privately owned issue banks and their responsibilities as central banks in Goodhart (1988).
31. Martínez Méndez (2005).
32. Eichengreen (1992).
33. Eichengreen (1996: 51–60).
34. Examples include Olariaga (1929 and 1987); Sardá (1936), Belda y Pérez de Nueros (1928); Flores de Lemus (1929); Ceballos Teresí (1930); Bernacer (1930); Fernández Baños (1930) and Comisión del Patrón Oro (1929).
35. The same thing happened, for example, in France in 1928. See Margaraiz (2003: 424).
36. The Bank's high profits in 1921 due to its purchases of gold during the war had already led to heated political debate and a great deal of controversy in public opinion that had a very negative impact on the institution's public image (Martínez Méndez, 2005).
37. Martin Aceña (1984: 44).
38. Nurkse (1944).
39. The same is true of any other relevant interest rate, such as the interest rate for loans secured with securities.
40. Banco de España, Annual reports, 1920–29.
41. Nurkse (1944: 94–8).
42. The sole exception was the increase in August 1914, which did not provide for any minimum in gold or a maximum in silver. The issue limit was increased by 500 million pesetas on each occasion.
43. After 1921 the Bank of Spain introduced a rediscount rate applied to all banks registered in the CSB.
44. Martín-Aceña (1984).
45. Comín (1996: 81–5).
46. Eguidazu (1978: 44).
47. Olariaga (1929) and Sardá (1936).
48. Martín-Aceña and Pons (1996).
49. Martín-Aceña (1994: 137–9).
50. Bank of Spain, Minutes of the Board for 1882–83.
51. Junta Consultiva de la Moneda, Minutes for 1882–1883 and Serrano Sanz (2004).
52. Martín-Aceña (2000b).

9 Monetary Policy in Southeast Europe on the Road to the Gold Standard

1. Kindleberger (1993: 68–9).
2. Nedelchev (1940: 15).

3. A summary of these reforms may be found in Lazaretou (2004, 2005).
4. Lazaretou (2004: 38).
5. Nedelchev (1940: 17).
6. A detailed discussion of the possible determinants of the *agio* is presented by Fantacci (2009).
7. Researchers at that time like Assen Christoforoff argue that this was done with the purpose to support the Russian currency by creating external demand for it, a zone of roubles in circulation, making it as strong as the French Franc (Christoforoff, 1946).
8. Kiosseva (2000).
9. Bulgarian National Bank (1929); Yordanov (1910) and Christoforoff (1946).
10. Bochev (1924).
11. Bulgarian National Bank (1907: 17).
12. There is also some descriptive evidence in the literature that the agio existed at a considerable degree since 1882 and that in 1884 it moved in a range between 4 per cent and 9 per cent (Bulgarian National Bank, 1929).
13. Although Romania issue only gold-backed banknotes, they were de facto redeemed in silver; therefore, they are treated as silver-backed banknotes in an archival document (Bulgarian National Bank, 1998: 371).
14. Although Austria adopted the gold standard in 1892 by introducing the krone, it managed to achieve mint parity only in 1896 and it never introduced convertibility of banknotes. Therefore, it is argued that Austria-Hungary shadowed the gold standard (Bank of Greece 2009: 39).
15. Christoforoff (1946).
16. Christoforoff (1946: 68).
17. Newey-West HAC Standard Errors and Covariance (lag truncation = 2); Durbin-Watson statistics: 2.1; LM test for serial correlation: F-statistics = 0.45 (0.64); Normality test: χ^2 (2) = 1.05 (0.59); Heteroskedasticity: F-statistics = 0.43 (0.72).
18. A more detailed study of the determinants of the agio is provided by Dimitrova, K. and Fantacci (2010).
19. Bulgarian National Bank (1999: 317). In a letter to the Minister of Finance, the decreased interest rate on deposits was explained by the motivation to make the public invest in more profitable assets like real estate, which would raise the price of mortgages. Since the Bulgarian National Bank had a large portfolio of mortgage loans and treasury bonds, this would cause a transformation of the foreign public debt into domestic public debt and might ease the debt burden on the government.
20. Fantacci (2009); Dimitrova and Fantacci (2010).
21. Christoforoff (1946).
22. Bulgarian National Bank (1929).
23. Bulgarian National Bank (1998: 364).
24. Yordanov (1910).
25. Bulgarian National Bank (1907: 17).
26. For a long-term analysis of the interaction between monetary and fiscal authorities in Bulgaria, see Dimitrova (2011).
27. Bulgarian National Bank (1999: 314, 317).
28. Newey-West HAC Standard Errors and Covariance (lag truncation = 3); Durbin-Watson statistics: 1.48; LM test for serial correlation: F-statistics = 0.80

(0.45); Normality test: χ^2 (2) = 4.76 (0.08); Heteroskedasticity: F-statistics = 0.53 (0.66).

29. The results are similar, as expected, when total money in circulation is taken into account, as the coefficient in front the fiscal budget decreases insignificantly to 0.55.
30. Bulgarian National Bank (1929).
31. Avramov (2007).
32. Bernholz (2008).

10 Domestic Public Debt, Gold Standard and Civil Wars: Institutional Interconnections in Nineteenth-Century Colombia

1. The focal subjects in Latin America's economic history can be found in Bethell (1992). The new institutional approach is in Haber (1997). See http://www.worldlingo.com/SjGle6L454483gFpepnKMm7KuCuAjGNjH/msowin11?service=WorldLingo_ES-EN&lcidFrom=3082&lcidTo=1033&lcidUI=3082&t=CAE1FEE4-8F5C-E86B-B923-90FBE374DD9C-_ftn2.
2. Meisel (1990) uses the price series built by Pardo (1972), which was based on records of selected Bogota convents' grocery purchase since the seventeenth century. Ocampo (1994) reassessed Meisel's calculation because he considers it a rough series that exaggerates domestic inflation. However, Meisel's index captures the same upward trend in prices also inferred in Ocampo (1984). I use Pardo's price index, base 1850 = 100 until 1880 and Meisel's index onwards.
3. It is assumed that the money multiplier was very low in this type of economy.
4. See the chronology of domestic public debt legislation on Rojas (2000).
5. A suitable indicator could be found in the urban and rural property prices given the demand expansion generated by massive auctions of real state. See http://www.worldlingo.com/SjGle6L454483gFpepnKMm7KuCuAjGNjH/msowin11?service=WorldLingo_ES-EN&lcidFrom=3082&lcidTo=1033&lcidUI=3082&t=CAE1FEE4-8F5C-E86B-B923-90FBE374DD9C-_ftn9
6. Overall, the civil wars were organized by landowners and merchants who had a labour force strongly tied to land and whose opportunity costs decreased when the profitability of agro-exports went down. It is possible to speculate that the monetary costs of mobilizing an army of poorly armed peasants were not prohibitive. A cost–benefit analysis of these civil wars would require more quantitative information.

11 The Japanese Economy during the Interwar Period: Instability in the Financial System and the Impact of the World Depression

1. Korekiyo Takahashi (1854–1936) was a distinguished financial and political leader in Japan. He joined the Bank of Japan Bank of Japan in 1892 and served as Governor of the Bank from 1911 to 1913. He then went on to

serve as Finance Minister seven times, between 1913 and 36, and as Prime Minister once, from 1921 to 22. He was assassinated by a group of militarists on 26 February 1936. Another distinction of his career in public service was his central role as a fundraiser in the Western countries during the Russo-Japanese War (1904–05). As we will learn later in this chapter, Takahashi solved the financial crisis of 1927 and implemented a dramatic economic stimulus during the Great Depression.

2. In July 1937, Japan and China entered a state of war without declaring it. Japan was at war from that month until its surrender at the end of the Second World War in August 1945.
3. See Patrick (1971) 'The Economic Muddle of the 1920s', Morley (ed.), *Dilemmas of Growth in Prewar Japan*, Princeton University Press: 211–66, Princeton. Others, such as Nakamura (1983), call the 1920s an 'era of unbalanced growth' for Japan, emphasizing the surge of urbanization and industrialization supported by public investment. See Nakamura, Takafusa (1983) *Economic Growth in Prewar Japan*, Yale University Press, New Haven.
4. Masuda Bill Broker Bank was headquartered in Osaka and had branches in the national and regional commercial centers of Tokyo, Nagoya, Kyoto, and Moji. See Tsurumi (2000) 'Senzen-ki ni okeru Kin'yu Kiki to Intaabanku Shijo no Henbo (Financial Crises and Changes in the Interbank Money Market during the Prewar Period)', Itoh, Tsurumi and Asai (eds), *Kin'yu Kiki to Kakushin: Rekishi kara Gendai e* (Financial Crises and Innovation: From History to Present), Nihon Keizai Hyoronsha, Tokyo: 67–107; and Ehiro (2000) 'Kin'yu Kiki to Kouteki Shikin Do'nyu: 1920 Nendai no Kin'yu Kiki eno Taiou (Financial Crises and the Injection of Public Funds: Policy Responses to the Financial Crises of the 1920s)', Itoh, Tsurumi and Asai (eds): 67–107.
5. 'Special loans' refer to various kinds of loans extended by the Bank of Japan with special arrangements. They include loans exceeding a credit line per borrower, loans with extended coverage of collateral, and loans to borrowers who have no present ties to the Bank of Japan as clients.
6. See Tamaki (1995) *Japanese Banking: A History, 1859–1959*, Cambridge University Press, Cambridge, UK: 141–2.
7. See Bank of Japan (1924), *Annual Report for the Year 1923*, Tokyo: V.
8. At the peak of panic on 21 April, Bank of Japan loans skyrocketed by 57 per cent in just one day, to 602 million Yen, and bank notes in circulation increased by 38 per cent in just one day, to 639 million Yen.
9. See Bank of Japan (1928) *Annual Report for the Year 1927*, Tokyo: II–III; Tamaki (1995: 152). The total government guarantees of 700 million Yen accounted for 4.3 per cent of the gross national product.
10. See Tamaki (1995: 155–64). According to Goto (1970) *Nihon no Kin'yu Toukei* (Financial Statistics in Japan), Toyo Keizai Shinposha, Tokyo, the year-end number of banks in Japan was 2,039 in 1920, and 1,427 in 1927. This figure decreased by 265 in just one year, by the end of 1928. In 1932, the number stood at 650.
11. See Tsurumi (2000: 100–1).
12. Fukai (1941) *Kaiko Nanajunen* (Reflections on Seventy Years), Iwanami Shoten, Tokyo: 225.

13. Takahashi (1955a) *Taisho Showa Zaikai Hendou Shi* (A History of Economic Fluctuations during Taisho and Showa Eras), vol. 2, Toyo Keizai Shinposha, Tokyo: 739.
14. Takahashi and Morigaki (1993) *Showa Kin'yu Kyoko Shi* (A History of the Showa Financial Crisis), Toyo Keizai Shinposha, Tokyo: 289.
15. Takahashi (1955b) *Taisho Showa Zaikai Hendou Shi* (A History of Economic Fluctuations during Taisho and Showa Era), vol. 3, Toyo Keizai Shinposha, Tokyo: 1315–16.
16. For details on the debates on the return to the gold standard, see Bank of Japan (1983) *Nippon Ginko Hyakunen-Shi* (Bank of Japan: The First Hundred Years), vol. 3, Tokyo: 136–68; and Patrick (1971).
17. The amount at the end of 1914 was 341 million Yen, or 7.2 per cent of GNP.
18. See Bank of Japan (1983: 363–79); Takahashi (1954) *Taisho Showa Zaikai Hendou Shi* (A History of Economic Fluctuations during Taisho and Showa Era), vol. 1, Toyo Keizai Shinposha, Tokyo: 445–67.
19. Having twice served as governor of the Bank of Japan, he had close relationships with Benjamin Strong, President of the Federal Reserve Bank of New York, and Montagu Norman, Governor of the Bank of England.
20. Prime Minister Hamaguchi was shot in November 1930 and replaced by Reijiro Wakatsuki in April 1931.
21. Under the gold standard, the parity of Yen 1 was equivalent to 49.845 US cents and 2.0291 shillings. In November 1932, the yen hit 20 cents and 1.14 shillings.
22. Itoh (2003) 'Showa Shonen no Kin'yu Kiki: Sono Kozo to Taio', (Financial Crises at the Dawn of the Showa Era: Structure and Policy Responses), Abe (ed.), *Kin'yu Kisei wa Naze Hajimatta ka* (Why Financial Regulations Began?), Nihon Keizai Hyoron Sha, Tokyo: 155–93. Even though Japan introduced the Law Concerning the Prevention of Expatriation of Capital in July 1932 and the Law Concerning Foreign Exchange Control in May 1933, Japan's exchange controls during the Takahashi term were mild. Meanwhile, some European countries, such as Germany and Austria, imposed strict exchange controls. Importers and exporters in Japan were able to buy and sell foreign exchange freely via private banks until the end of 1937. Similarly, investors were free to buy and sell foreign securities, provided that they declared that the transactions were 'not speculative'.
23. Osaka Nichinichi Shinbun, 9 and 10 March 1932. Also, on 18 April 1932, Bank of Japan Governor Hisaakira Hijikata stated that the government intended to have the Bank of Japan underwrite government bonds. Bank of Japan Archives, 3943, 'Documents from Meetings of Directors and Branch Managers, Spring–Autumn 1932'.
24. Kindleberger (1973) *The World in Depression, 1929–1939*, University of California Press, Berkeley and Los Angeles: 166.
25. See Shizume (2007) 'A Reassessment of Japan's Monetary Policy during the Great Depression: The Constraints and Remedies', *RIEB Discussion paper* 208, Kobe University. The categorization is based on Eichengreen (1992) *Golden Fetters: The Gold Standard and the Great Depression, 1919–1939*, Oxford University Press, New York: 293 (table 10.1).

26. Nanto and Takagi (1985) 'Korekiyo Takahashi and Japan's Recovery from the Great Depression', *American Economic Review* 75(2): 369–74.
27. Okura and Teranishi (1994) 'Exchange Rate and Economic Recovery of Japan in the 1930s', *Hitotsubashi Journal of Economics*, 35: 1–22.
28. Umeda (2006) '1930 Nendai Zenhan ni Okeru Nihon no Defure Dakkyaku no Haikei: Kawase Reto Seisaku, Zaisei Seisaku, Kin'yu Seisaku' (On the Japanese Experience of Escaping from Deflation during the Early 1930s: Exchange Rate Policy, Monetary Policy, and Fiscal Policy), *Kin'yu Kenkyu* (Monetary Studies) 25(1): 145–81.
29. Cha (2003) 'Did Korekiyo Takahashi Rescue Japan from the Great Depression?', *Journal of Economic History* 63(1): 127–44.
30. See Iida and Okada (2004) 'Showa Kyoko to Yoso Infure Ritsu no Suikei', (The Showa Depression and estimation of Inflation Expectation), Iwata (ed.), *Showa Kyoko no Kenkyu* (A Thesis on the Showa Depression), Toyo Keizai Shinposha, Tokyo. Iida and Okada (2004) argue that these two events shifted expectations in advance, as market participants anticipated them.
31. See Shizume (2008) 'Ryo-Taisen-Kan-Ki Nihon ni okeru Bukka Hendo Yoso no Keisei: Shohin Sakimono Kakaku Deta o Mochiita Bunseki' (On Inflation Expectation during the Interwar Period in Japan: An Analysis Using Price Data of Commodity Futures), *RIEB Discussion Paper* J97, Kobe University. Shizume (2008) argues that the departure from the gold standard had significant effects on expectations, while the Bank of Japan underwriting of government bonds had no such effect. He draws his conclusions from a quantitative analysis based on commodity futures prices, and a narrative analysis based on comments of contemporary market participants. The markets, he reports, anticipated the Japanese departure from the gold standard, as well as the resulting inflation and currency depreciation in the face of Britain's departure from the standard. He also finds that markets did not anticipate inflation when the debt-financed public spending and the Bank of Japan underwriting of the national debt were announced.
32. Shizume (2007) argues that the long-term interest rate in Japan moved along with the British rate.
33. See Obstfeld and. Taylor (2004) *Global Capital Markets: Integration, Crisis, and Growth*, Cambridge University Press, Cambridge and New York. Obstfeld and Taylor (2004) apply the concept of the macroeconomic policy trilemma in their historical studies on the relationship between the currency systems and monetary policies of a number of countries. They argue that the gold standard system is a typical policy regime designed to maintain free capital movements and a fixed exchange rate, while sacrificing independent monetary policy.
34. Itoh (2003: 156).
35. Eichengreen (1992: 298–309).
36. For details on this argument, see, for example, Ministry of Finance (1965) *Showa Zaisei Shi* (A Financial History of Showa Era), vol. 1, Tokyo: 134–40; and Shima (1983) 'Iwayuru Takahashi Zaisei ni Tsuite' (On the so-called Takahashi Economic Policy), *Kin'yu Ken'kyu* (Monetary Studies), 2(2). Along this line, the underwriting of government bonds by the central bank was prohibited in Japan under Article 5 of the Finance Law of 1947.
37. Bordo and Rockoff (1996) 'The Gold Standard as a Good Housekeeping Seal of Approval', *Journal of Economic History* 56(2): 389–428.

38. Shizume (2011) 'Sustainability of Public Debt: Evidence from Japan before the Second World War', *Economic History Review*, 64(4): 1113–43.
39. Although Takahashi advocated the use of fiscal policy during a recession, he recognized the importance of fiscal discipline in the long run. See Smethurst (2007) *From Foot Soldier to Finance Minister: Takahashi Korekiyo, Japan's Keynes*, Harvard University Press, Cambridge, MA and London.

12 The Euro and the Gold Standard: What are the Lessons?

1. Token coins had higher monetary face value than intrinsic metallic value, thus providing seigniorage for the issuer.

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