Roland Uittenbogaard

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voor Dorien, Jannika en Pieter

Foreword

The King may have felt deceived, but he is unlikely to have felt short-changed. This conclusion emerges from the Ph.D. research by Roland Uittenbogaard into the early years of De Nederlandsche Bank (DNB) and the gain which its royal founder managed to reap from it. After the occupation of the Netherlands by Napoleonic France had ended in 1813, the newly created King William of Orange wished to reinvigorate his country's foreign trade. A national bank as "the sinew of this State" would have to lift commerce out of its sorry condition. In the eyes of the King, founding De Nederlandsche Bank would provide him with a useful financing vehicle for future State expenditures. He was soon disappointed, however. DNB assumed an independent position from the very start—even towards its founder.

DNB's 200th anniversary prompted economic historian Roland Uittenbogaard to investigate the birth and early history of that institute—an institute where he had spent many years as a loyal policy adviser in the Payments Division, until in 2008 he moved on to the Ministry of Finance. I happened to make the same switch 1 year later. Thus our paths crossed twice, once at DNB and once at the Ministry. As frequent collaborators, we became closely acquainted. While holding down a busy job, he worked with unstoppable energy on the present doctoral thesis. On Tuesday 25 March 2014, 200 years to the day after the founding of DNB, Roland gallantly defended his thesis at the Utrecht University.

Reading about the early days of DNB, I am filled with feelings of nostalgia and pride. "Lending to the Government", DNB reiterated in those days, "will restrict lending to commerce". The Governors, with their roots in the Amsterdam money market, were not without a degree of conservatism. They aspired to serve the Amsterdam merchants and made every effort to overcome the latter's initial distrust. Their main fear was that an overly intimate relationship with the public authorities would harm public confidence in their bank. Even the King must have sensed this. He might have moulded the Governing Board by appointing Board Members, but never made a move to do so. At the same time, the King may have felt a bit deceived sometimes. Because the national bank he had created as a 'money tap for government finances' proved remarkably close-fisted. For the first two

decades of its existence, DNB did not lend a penny to the Government and after 1834 only sparingly so. However, what King William received in exchange was worth far more: a national bank that enjoyed widespread trust. So he will not have felt short-changed.

Independent and dutiful—these two epithets both characterise and adorn the King's 'eldest daughter'. How they did so in the past, you may read in this thesis; how they will as we move on, with our work cast increasingly in a European mould, time will tell. This book holds many valuable lessons to remember.

Klaas Knot
President of De Nederlandsche Bank
Amsterdam, The Netherlands

Preface

I started working on this thesis, supervised by prof. Jaime Reis at the European University Institute in Florence, September 1997. After 3 years, however, my thesis was not finished. I had been warned, I must say, by prof. Alan Milward, my co-supervisor then, in his comment to my June Paper in 1998, where he mentioned it would not be a 'three year job'. He was right. For several reasons, in Spring 2001, I started working at De Nederlandsche Bank in the Payment Policy Division, at the heart of the central bank. Working life and family life pushed the thesis to the background for nearly 10 years, but it remained in the back of my mind. In 2011, it surfaced again and Klaas Knot pointed out that it would be good for me to finish my thesis. And now, less than 3 years later, according to a tight planning aimed at the deadline of DNB's 200 years' anniversary, I did it!

I regard research, even though so often done alone, as a collaborative effort. If it can be avoided it should not be done alone, because it yields better results and is more fun. Firstly, I want to thank all the helpful staff of libraries and archives in Florence, DNB, the Koninklijke Bibliotheek, the National Archive, the IISG and the UvA. By thanking Joke van der Hulst and Rian Beekx I can't do justice to all people who have helped me through the years, but I am grateful to all of them.

Several fellow researchers who helped me along the way, Klas Fregert, Clemens Jobst, Kim Abildgren, Ivo Maes, Jan Tore Klovland and Jutta Bolt I like to mention. They all helped me in different ways in my search for data to allow for international comparison. The international comparative analysis has remained limited, but that is not because of lack of help and advice from them. Given my deadlines it proved impossible to make the international data comparable in ways that I had originally wanted to do. But this may be an interesting future project.

Sandra de Pleijt (University of Utrecht) very skilfully helped me with some difficult econometrics. Bastiaan Overvest (ACM) not only ran numerous econometric tests, but also helped me in clearing up some of my ideas in pleasant and useful discussions. Two editors I want to thank, René van Kurpershoek and Ian Cressie, who greatly improved the manuscript. I am very grateful for the support and encouraging comments of Jan Luiten van Zanden and the 'incentive-

compatible' approach of Jakob de Haan. The different comments of the reading committee, Charles Goodhart, Joost Jonker, Hein Klemann, Maarten Prak and Jaime Reis, were greatly appreciated. Particularly the detailed comments greatly helped to improve the manuscript. Of course, all remaining errors are my own.

This research has been supported by DNB, but the views expressed are those of the author only.[1]

I also want to thank my head of unit, Freek Keppels, for the interest he took in this project and the way he helped particularly in the last months.

The last words of thanks are for Dorien, Jannika and Pieter who supported me all along and without them this project would not have succeeded.

Gouda, The Netherlands Roland Uittenbogaard
Summer 2014

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A Note on Sources and Historical Statistics

DNB Sources

The sources used are mainly from DNB's archive in the National Archive in The Hague. (Nationaal Archief (NA), The Hague, 'Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV', entry number 2.25.08.) The main sources are the minutes of Governing Board meetings and the annual reports of the Governing Board to the Supervisory Board. These two sources are referred to in the footnotes frequently and therefore both are abbreviated. Annual reports are referred to as (AR 'year'—of publication).

Concerning the Minutes of the Board, from 1814 to 1821 there are two series: Secret and Normal Minutes. The Secret Minutes are discontinued after 1821. The Normal Minutes cover the entire period and can be found in Nationaal Archief (NA), Den Haag, Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV, nummer toegang 2.25.68, inventarisnummer 2031–2040. The Secret Minutes for the period 1814–1852 have inv. nrs. 2060–2062. Below the reference to the Minutes will be MB and the date of the meeting. For instance, "MB 31-10-1863" meaning the minutes of the meeting that took place on October 31, 1863, that can be found in Nationaal Archief (NA), Den Haag, Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV, nummer toegang 2.25.68, inv.nr. 2034 (covering 1861 August to 1865 March).

De Jong (1967) published a lot of source material on the history of DNB in his volumes on DNB from 1814 to 1914. These are referred to under their original title, with a date and with reference to the number under which De Jong published them (e.g. De Jong I-2: doc. 10 refers to the printed sources in De Jong volume I part 2, listed as number 10.)

Statistics

Most statistics used in this thesis were published by De Jong (1967) *Geschiedenis van de Nederlandsche Bank (vol I-2 and III)*. I refer to these statistics as 'historical database DNB, 1814-1870.' The complete dataset is not included in this manuscript but will be made available through the Internet.

Other sources of data are referred to in the footnotes.

Contents

Chapter 1
Introduction

1.1 De Nederlandsche Bank, Two Hundred Years on

On March 25 2014 it will be 200 years ago that King Willem I established De Nederlandsche Bank. DNB is one of the five oldest central banks still existing in the world: only the Swedish Riksbank, the Bank of England, Banque de France and Suomen Pankki are older. As a central bank, nowadays, DNB is no longer extraordinary; quite the contrary, central banks are a ubiquitous phenomenon. There is hardly a country in the world that does not have its own central bank, which could easily give rise to the idea that central banks are inevitable. Economic discourse has come to focus on what a central bank should do, rather than asking *a priori* the question of why there is central bank at all. This is just the question that was posed by the 'free banking school'. Proponents of free banking argue that the existence of central banks is at the very core of the problem of monetary and financial instability, instead of helping to solve these problems. The argument made by the free banking school is outlined in more detail in Chap. 2. Here my main point is that the question of why central banks exist has relevance.

In this thesis, I approach the question of the rationale of central banks from a historical perspective. Most of the traditional literature on central banking and its development is coloured by what I call a 'Keynesian' distortion. This kind of distortion in historiography arose from an almost universally 'revealed preference' for a centralised banking system in the twentieth century, particularly in the post-World War II Keynesian era. Central banks were considered part of government machinery for engineering society towards optimal outcomes. Central banks conducted discretionary monetary policy to realise macroeconomic objectives, such as price stability and full employment. In this context the inevitability and desirability of a central bank became undisputed. This had a great influence on the literature about the historical development of central banking. Central bank functions are too often projected backwards in time and a story of a linear development towards modern central banking is ready to be told. For instance, in the economic

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literature on international trade and exchange rates central banks are often discussed within the context of commodity standards, particularly the gold standard after 1870. Central banks appear as an unexplained *deus ex machina* as the manager of the external value of a currency, as a player in the gold standard game, abiding by the rules (or not).[1] Capie, Fischer, Goodhart and Schnadt in their overview of the development of central banking in many countries speak of 'consolidation under the gold standard.'[2] This has two important implications. First, that as from about 1875 onwards, when the gold standard became nearly universal, central banks were 'here to stay'. Second, it also implies that central banks already existed before 1875, but they somehow emerged as the national keeper of the reserves of specie and bullion, thus playing a role in relation to the exchange rate.

Not only the theoretical literature, also most historical studies of central banks never addressed the question of why central banks emerged or existed at all. Such histories are usually sponsored by the central banks themselves, often to commemorate some anniversary or another. A good example of this is the monumental *Geschiedenis van de Nederlandsche Bank*, written by A.M. de Jong. Although he started this work just before DNB celebrated its first centennial anniversary, it took him until the 1930s to complete the two-volume history of the bank's first 100 years. Without any apparent restrictions on the time, effort and money needed to write such a book, it was thoroughly grounded in research drawing on the archives of DNB and covered in chronological order the DNB's business from 1814 to 1914. As a result, it laid the foundations for nearly all banking histories in the Netherlands to follow. Nevertheless, De Jong's *Geschiedenis* certainly had some drawbacks, a major one being that it is only available in Dutch. And like many official histories that were written in the twentieth century, it carefully reproduced the sources found in the DNB archives. By and large *Geschiedenis* is a rich company history, although it treats DNB in relative isolation and without ever questioning its *raison d'être*.[3]

Later literature on the development of the financial sector in the Netherlands was built on the *Geschiedenis*. In the 1980s and 1990s there was a revival of interest in banking history in the Netherlands. Numerous studies on individual institutions and several important overviews of commercial banking, for instance Kymmell (1992) and Wijtvliet (1993) and of the entire Amsterdam money market in the first half of the nineteenth century (Jonker 1996) were published. The former two both analyse the influence of DNB on the development of commercial banking in the Netherlands. Wijtvliet, in particular, zoomed in on the transition of DNB from a

[1] The literature is abundant, see for instance, Bordo and MacDonald (1997). The point here is not about whether the gold standard worked automatically or not, the point is that central banks are key players in the game, whether exercising discretion or not.

[2] Capie et al. (1994), p. 10.

[3] Later volumes of the *Geschiedenis van de Nederlandsche Bank* were written by J. de Vries (covering the period 1914–1945) and M.M.G. Fase (covering the period from 1945 to 1971). The continuation under the same title seems to imply that an official history only needs to be written once, which would suggest a rather naïve view on historiography.

maximiser of profit to a bankers' bank, but focuses on the period after 1860 when commercial banks emerged in the Netherlands.[4] In these analyses DNB is used to help explain other developments, and its own development is only analysed for the period after 1860. The focus on this period is closely linked to the debate on the late industrialisation of the Netherlands. In that perspective, the relatively late emergence of banking in the Netherlands is regarded as one of the explanations for the delay. But questions like 'what happened before?' and 'how does DNB fit into this earlier period?' remained largely unexplored.

For this reason, *Merchants, bankers and middlemen* by Jonker (1996), is a particularly valuable contribution to the debate because it focuses on the first half of the nineteenth century. Jonker's comprehensive overview of the Amsterdam money market aimed to set the balance straight that despite the late emergence of banking in the Netherlands the financial system was remarkably flexible and successful. This argument should be seen against the backdrop of the long debate among economic historians on the relatively late industrialisation and take-off of modern economic growth in the Netherlands. This (relatively) late take-off is particularly interesting in the light of the development of the Dutch economy in the seventeenth and eighteenth centuries.[5] According to Jonker, the money market was not a bottleneck to economic progress, despite its—in some senses—relatively pre-modern characteristics, such as the importance of the on-call money market (the prolongation system) and the widespread possession of securities. Jonker explained the late arrival of deposit banking in the Netherlands not as shortcoming, but rather as the result of a system that had managed to channel savings into investments in many other ways that were not necessarily less efficient. Jonker also put the development of De Nederlandsche Bank into perspective, showing its incredible size relative to other players in the money market, while also making clear that the market was in total much larger than DNB. In his undertaking to show that the Dutch financial system was not a bottleneck to economic development or industrialisation in particular, Jonker perhaps here and there overestimated how well the Amsterdam money market performed.[6] To explain the absence of severe shocks, he pointed to the strength, size and flexibility of the market, but he never really elaborated on potentially destabilising factors and the fragility of the system. All in all, the question as to how DNB historically developed into a central bank has remained largely unanswered. This thesis aims to answer that question.

[4] Kymmell (1992) and Wijtvliet (1993), pp. 37–105.

[5] De Vries and Van der Woude even argue that the Dutch economy was the first 'modern' economy. de Vries and Van der Woude (1994).

[6] van Zanden and van Riel (2000), pp. 196–199, for instance, show that rising government debt tended to increase interest rates, which had been denied by Jonker (1996), p. 89, who pointed to the ease with which the Amsterdam market absorbed issues of new loans (foreign and domestic).

1.2 Central Question

The central question of this thesis is to what extent and why DNB developed into a central bank during the period from 1814 to 1852. At first sight, the answer may seem quite straightforward: King Willem I established DNB to be the nation's central bank. But that answer is not correct for several reasons. In the first place, it is misleading to speak of DNB as a central bank right from the start. That would misleadingly suggest that DNB functioned as a modern central bank. Modern central banks are monopoly issuers of banknotes, they conduct monetary policy to achieve one or more macroeconomic ends and they are, by operating an interbank payment system, settlement banks.[7] In 1814, DNB did none of these things: it did not have a monopoly on the issue of banknotes, it did not conduct monetary policy and banks did not hold accounts at DNB. A second reason for the answer being incorrect is that it neglects the economic context of the period and suggests that the political desire to establish a central bank suffices as an explanation. Central banks operates at the intersection of government and the financial system: their development is influenced by both their relationship to government and by the financial system in which they operate. That means that government can decide to create an institution for central banking purposes, but that if there is no demand for the institution its success is uncertain. For this reason, the question as to why DNB developed as a central bank must be studied in the light of the prevailing political and economic contexts. Clearly, therefore, the answer to this question is unlikely to be simple.

In order to be able to systematically analyse the development of central banking a definition of a central bank is necessary. Although it is difficult to define central banking, for my purposes a functional definition is most useful.[8] Capie et al. (1994) define a central bank as the government's bank, the monopoly note issuer and lender of last resort.[9] From these three elements further questions for analysis arise.[10] Firstly, what is a government's banker? Does it mean that a bank services government's payments, or lending or both? Secondly, the monopoly on issue of banknotes generates important advantages for an issuing bank, but the question is whether this means that there has to be a legal monopoly? What happens if that is not the case? Thirdly, last resort lending seems to be the last stage of a process in which the central bank develops into being the bankers' bank. This requires the central bank to abandon profit maximisation because it has to keep large reserves of cash that do not yield any returns. A central bank that acts as a lender of last resort has to take a non-competitive stance. In sum, the central bank's function of being

[7] See, for instance, Chapter 2: Roles and objectives of modern central banks. In: BIS (2009).

[8] Ugolini (2011) warns against an institutional distortion in the literature and argues for functional approach.

[9] Capie et al. (1994), p. 5.

[10] Chapter 2 further elaborates on the theories on the development of central banking, here the main elements of our central question are outlined.

the issuer of banknotes, its key role in the interbank payment system and its role of being banker to government need to be addressed in this analysis. In addition to those *functions*, attention also has to be paid to the *behaviour* of the central bank in the market: it does not maximise profits and it must maintain a non-competitive stance.

From a modern perspective, this definition of a central bank seems incomplete. A modern-day central bank clearly also manages the money supply and conducts monetary policy. There is consensus in the literature, across competing theories, that monetary policy was not the reason for establishing the institution of the central bank. Even free banking theorists, like White (1989), emphasised that, for instance, debates on rules versus discretion blinded economists to a third option of having no institution to pursue policy at all.[11] Monetary policy in the modern sense, aimed at achieving price stability or other macroeconomic objectives, was not yet pursued in the first half of the nineteenth century. Not only was the theoretical understanding of the concept of central banking insufficiently developed in this respect,[12] the setting in which money was regarded as a commodity (e.g. based on a gold or silver standard), with free flows of capital, stood in the way of discretionary monetary policy.[13] Under commodity money standards (e.g. gold or silver), particularly in the second half of the nineteenth century, adjustment processes resulting from imbalances or shocks to the financial system, could have significant effects on the economy as a whole and it is hard to conceive from our modern perspective that a central bank would not pay attention to these effects and recently historiography has started to uncover evidence of this.[14] On the other hand, the history of the First and Second Bank of the United States indicates that when they exercised some degree of monetary discretion (e.g. in order to mitigate seasonal fluctuations or the swings of business cycles) both banks were not only exposed to criticism, which affected their position and effectiveness, but they were eventually discontinued.[15] Therefore, it seems reasonable to assume that monetary policy was not the reason for the establishment of the central bank, but that these institutions over time took

[11] White (1989), pp. 3–5.

[12] Flandreau (2006).

[13] See for instance, Obstfeld et al. (2004).

[14] Recent literature on the Amsterdam Bank of Exchange has pointed out that this institution did indeed pursue monetary policy objectives and did try to shield the real economy from monetary shocks. See: Quinn and Roberds (2007) and Dehing (2012). This raises the question of how that was possible given the constraint that free capital flows, fixed exchange rates and independent monetary policy cannot coexist. The best way to understand this, I think, is that the Bank of Exchange introduced an additional or complementary money with a flexible exchange rate to other money. The important change that took place in the nineteenth century, was that bank money (bank notes and deposits) started to be issued at a fixed exchange rate to silver and or gold. This change is a theoretical issue beyond this historical study, but an interesting area for further research.

[15] Timberlake (1993), pp. 11 and 12 (First Bank) and 41 and 42 (Second Bank). Timberlake shows that in the United States the fact that the central banks pursued discretionary policies, fuelled resistance against them.

up this function. I will analyse whether that was the case for DNB in the first half of the nineteenth century.

To sum up, the definition of a central bank has two dimensions. First, there is the functional dimension, i.e. the central bank as the monopoly note issuer, government's banker and the lender of last resort. Second, there are the characteristics of maintaining a non-competitive stance and not seeking profit maximising that accompany these functions and set the central bank apart from other banks. These functions and behavioural characteristics are reflected in the structure of my analysis of the development of DNB in the first half of the nineteenth century. This examination focuses on institutional development and must therefore distinguish several steps.[16] My analysis of why DNB developed as a central bank is divided roughly into two parts: (1) why was DNB established; and (2) how did it develop after that? I start with analysing of the motives for the establishment of DNB and then continue with the further development of DNB as a central bank. How was DNB's governance structure arranged and how did that impact its behaviour? Then the relationship to the Government is analysed. Finally, the business of DNB is examined in order to establish what objective DNB saw for itself and to see whether there was a development in its functions and behaviour.

The underlying assumption of the analysis of the development of DNB is that there was a development of central banking over time. That is not a wild assumption considering that two schools exist explaining the development of central banking. According to the mainstream 'institutionalist' or evolutionary perspective, central banks emerged as the outcome of a natural development in the financial system; after they had assumed a central place in the banking system, central banks could develop monetary policy. Goodhart (1988) argues that the central bank's role of bankers' bank preceded the possibility to control the money supply or conduct monetary policy.[17] I do not assume that this development was a linear, unidirectional or even an irreversible process. That is why there is a question mark in the title of this thesis: was there an evolution of central banking in the Netherlands? This question (mark) is inspired by the critical approach of central banking by what I call the 'free banking' school that says that central banks developed for political reasons.

My assumption about the development of central banking, does not imply that there is a universal pattern that all central banks follow. Such a claim of universality needs to be supported by a solid body of evidence. Currently, however, historiography and theories on the development of central banking have been based largely on the case of the Bank of England. Applying the three functions to define a central bank to the Bank of England, the following landmark moments can be identified:

[16] North (1991), pp. 3–11.

[17] Goodhart (1988).

the Bank of England was the Government's bank right from the very start in 1694; it became a monopoly note issuer after 1844; and it became the lender of last resort from the 1870s onwards.[18] If the three functions together define a central bank, the Bank of England therefore became a central bank in the 1870s. Does that lay down a pattern that applies to other countries as well? In my view, the theory on the development of central banks could be enriched with in-depth case studies. It is unclear to what extent the development of DNB was really comparable to that of the Bank of England as the political and financial contexts in which they developed were markedly different.

1.3 Focus on DNB and the First Half of the Nineteenth Century

Because of the breadth of the analysis, choices have to be made to keep the project manageable. My choice for studying DNB in the first half of the nineteenth century needs some further explanation. First, the case of DNB was not only chosen for practical reasons of accessibility of its archives and the source material to be found there. Another reason is that the Netherlands may have during the nineteenth century been on its own path of development, different from that of England. The Netherlands had experienced a prosperous Golden Age in the seventeenth century. Due to the wealth accumulated, its important role in world trade, and the particular institutional set-up of the Amsterdam staple market with, for instance, the Amsterdamse Wisselbank (the Amsterdam Bank of Exchange) the Dutch economy was set apart. Although by 1814 the Netherlands had lost its international predominance and had become a relatively small economy, its financial services sector had a long history and was well developed and relatively sophisticated. This placed DNB in a very different setting than comparable institutions in many other countries right from the start.

Although the emphasis in my thesis is on DNB, its development will be treated in international comparative perspective as far as possible. For this purpose, mainly published sources and other comparative studies on the development of central banks have been used. Furthermore, this information has been complemented with information and references received from several experts throughout Europe.[19] The international comparison made here, however, is limited at best. I hope that my research will contribute to broader international comparisons in the future.

[18] Capie et al. (1994), p. 5; Although recently Bignon et al. argued that in the 1870s the theory was formulated by Bagehot, but the practice of last resort lending had already emerged earlier. Bignon et al. (2009).

[19] I am grateful to Klas Fregert, Clemens Jobst, Kim Abildgren, Ivo Maes, Juha Tarkka, the Bank of England, and Jan Tore Klovland and Jutta Bolt, all of whom kindly provided data or references to useful sources that enabled international comparison.

A second delimitation of this study concerns the period of analysis: 1814–1852.[20] This period was chosen for more than just practical reasons of keeping the project manageable. Indeed, I chose this period for theoretical, DNB-specific and other, more general reasons. In the first place, from a theoretical perspective, as will be discussed in Chap. 2, this period bridges the gap between two periods in which two defining elements of central banking emerge. One theory explains the emergence of 'national banks' in the premodern era in relation to their function as government's banker, whereas the other theory explains the emergence of last resort lending in the second half of the nineteenth century. The period from 1814 to 1852 has been analysed in order to see what happened to DNB in the period bridging the periods to which these two theories refer.

In the second place, DNB's development also provided reasons to focus on this period. The starting point of 1814 is obvious: in that year that DNB was established. The choice to limit the period to 1852 was based on the fundamentally different position in the financial system that DNB had attained by that time. Its standing and the acceptance of its banknotes had become firmly established. De Jong recognizes this, but does not really elaborate on it and neither did the subsequent literature.[21]

Of course, it was not yet a central bank in the modern sense, but by 1852 DNB had become the *de facto* monopolist issuer of banknotes, and as such DNB was the key provider of fiduciary money and actively positioned itself as keeper of the national reserves of specie and bullion. DNB also acquired the role of the central bank as was described in the gold standard literature (as referred to above). From then onwards, other financial institutions started counting on DNB for liquidity in case of need and started economising on their own reserves. This way the first signs of a 'credit pyramid' emerged and that unmistakably positioned DNB as the central bank.

Finally, in a broader perspective, after 1860 political modernisation, international integration, modern economic growth, the emergence of commercial banks, and democratisation all dramatically changed the political and economic context within which central banks had to operate. All in all, DNB in the first half of the nineteenth century provides a fruitful and relatively unexplored territory to analyse the development of central banking.

[20] 1852 is, however, not rigidly maintained to cut off the analysis, because with regard to several aspects of my analysis, e.g. governance or credit policy, it turned out useful to apply a longer perspective as will become clear in the later chapters.

[21] De Jong I-1, 415.

1.4 Structure of This Thesis

The next chapter outlines theories on the development of central banking are outlined. These theories focus on different functions of central banks, but they also differ as a result of diverging views on the role of government in the financial system. Chapter 3 sketches the general political and economic context from 1800 to 1860 to provide context. Chapter 4 analyses the reasons for the establishment of DNB, while Chap. 5 discusses how the governance structure of DNB left room for other objectives than profit maximisation. Chapter 6 presents an analysis of the relationship of DNB with the Government. The next two chapters look at the development of the business of DNB. In Chap. 7 discusses the development on the liabilities side of the balance sheet of DNB as an outcome of the development of DNB's role in the payment system. In Chap. 8 analyses the credit policies of DNB to understand how DNB operated. Chapter 9, the concluding chapter, presents my conclusions as to what extent and how DNB developed as a central bank up until 1852.

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Chapter 2
Theories on the Emergence and Development of Central Banking

2.1 Introduction

This chapter provides an overview of different theories on the question of why central banks developed, in order to create a set of hypotheses about the principal issues to be analysed for the Dutch case. The development of central banking took place in the context of monetary history under changing economic and political conditions. This explains why this topic has been analysed by economists, historians as well as political scientists and this chapter eclectically combines insights from all these disciplines.

The chapter starts with an analysis of the 'fiscal theory' put forward by free banking theorists and Goodhart's theory on the evolution of central banking. Both theories are found to be remarkably similar. However, a gap emerges between the period for which the 'fiscal theory' is applicable (roughly until the early nineteenth century) and the period that is covered by the theory that focuses on the role as lender of last resort (the second half of the nineteenth century). This time-gap can be bridged by looking at the actual historical development of institutions that became central banks in the first half of the nineteenth century. The institutionalist approach discussed at the end of this chapter shows how the gap might be bridged by combining the wish to reduce transaction costs with the need to maintain confidence in the means of payment. Existing explanations are largely based on a relatively limited number of cases, particularly the Bank of England. This shows the need for additional case studies. The present chapter outlines the relevant topics for the analysis of the Dutch case.

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2.2 The Free Banking Explanation for the Development of Central Banks

The 'Free Banking School' builds on a long-standing tradition going back to the nineteenth century, which was highly critical of the existence of central banks. Smith[1] and Hayek[2] gave this tradition a voice during the Keynesian era, but it only surfaced again during the 1980s after decades of relative silence. According to free banking theory, government regulation and government-granted privileges to a central bank created the instabilities that characterise modern banking systems.[3] The criticism against central banks focuses on two main destabilising effects. First, central banks have an inherent inflationary bias. Being a privileged monopolist note issuer, a central bank ultimately does not have to limit its note issue. It can over-issue money, because it can rely on government to declare its banknotes legal tender and/or suspend convertibility into specie (coin).[4] Central banks face no necessary limit on the amount of money they issue and, even worse, governments allow them to do so, to create inflation which made it possible to tax without legislation.[5] Where people are forced to use the notes of the bank and the note issue is increased, the money supply grows and the overall price level goes up. In this way the money holdings of the public are depreciated. This can be seen as a tax, because the debt of the state in real terms declines. Such taxation occurs 'automatically' through inflation and does not need the approval of the parliament.

The second destabilising force emanating from a central bank lies in its role as lender of last resort, because it creates moral hazard.[6] Because there is a safety net, commercial banks can pursue riskier policies than they could without the safety net. The availability of a last resort lending facility thus reduces incentives for prudent behaviour. Riskier policies that are successful are likely to result in higher profits to private shareholders, whereas any losses will be (partially) borne by the taxpayer. Together, these two destabilising effects lead free banking theorists to promote a competitive banking system. Given the near-universal presence of central banking in the modern world, empirical research for free banking has to reach back into history, particularly the cases of Scotland and the United States. According to free bankers, the historical evidence shows that free banking was indeed a stable system.[7]

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[1] Smith (1936).

[2] See for example: Hayek (1976).

[3] White (1993), p. 11. White brought free banking back on the historical research agenda. These volumes can be seen as lending a degree of recognition of the free banking idea.

[4] See Goodhart (1988), p. 20.

[5] The quote "Inflation is taxation without legislation." is widely ascribed to Milton Friedman without clear reference.

[6] For further analysis of this see: Solow (1984), pp. 237–250.

[7] As opposed to the system of central banking, in which fiat money circulated for most of the twentieth century, with all the consequences, as pointed out in White (1989), p. 6.

Key functions of a central bank, such as its role as the bankers' bank and even the (self-) regulation of commercial banks, can emerge spontaneously, that is, without government intervention.[8] Even in a system with banks competing in note issue, it is rational for banks to organise 'unified computation and settlement of combined net clearing balances, in order to replace bilateral exchanges. In the end, all reputable banks within the par-acceptance region will be linked through a single clearinghouse.'[9] Instead of settling balances through the transfer of money (historically gold or silver specie), it is more economical to keep the coin as reserve in the clearinghouse and to settle in paper claims or book entries. Further expanding their range of functions, these clearinghouse banks often disclosed information relating to defaults or fraud. On top of this, these clearinghouse banks also proceeded to monitor the soundness of their member banks. This amounted to self-regulation by member banks which accepted these rules, because individual banks found this more efficient.[10] There are historical examples of clearinghouse associations (CHAs) that took on functions in addition to clearing and settling claims between members.[11] A disputed function of the CHA was that when there was a lack of liquidity, the CHA could increase the money supply (i.e. act as lender of last resort). There is some evidence that this worked in the United States, but it has also been argued that by taking on this responsibility the political acceptance of the clearinghouse system was undermined, because such power to increase the money supply met with distrust.

Since the bankers' bank role emerged spontaneously in some countries, that is, without government intervention, the question arises why central banks developed in the first place. According to free banking theory, the market would develop efficient solutions and government intervention was not necessary. Clearly, the defining element of a central bank in free banking theory is government-sponsorship.[12] Government-sponsorship is mainly expressed in the form of privileges, specifically the monopoly on note issue. Smith discusses the nineteenth-century discourse on the question of note issue in several countries, which all led to the same outcome: a monopoly conferred on a government-sponsored bank. She focuses on this point because 'it was out of the monopolies in the note issue that the secondary functions and characteristics of our modern central banks are derived.'[13] These secondary functions include, for instance, the guardianship over the bulk of the banking system's gold reserves and the conduct of monetary policy.

[8] However, there is no *communis opinio* on this: compare, for example: Salin (1984) and Calomiris (1996). The Suffolk bank enjoyed a practical monopoly of issue and remained competitive and abused its position for profit maximising purposes at the expense of other banks.

[9] White (1999), p. 17.

[10] Regulation hostile to private interest of course requires official enforcement.

[11] See, for instance, Timberlake (1984), pp. 1–15.

[12] White (1999), p. 70; White prefers the wider term sponsorship to ownership because the Bank of England became a central bank long before it was officially nationalised in 1946. By contrast, private member banks even today nominally own the regional Federal Reserve banks.

[13] Smith (1936), p. 168.

It was a matter of convenience for the banks to keep their surplus balances at a reserve bank 'but it is safe for them to entrust a major part of their cash reserves to a single outside establishment only if they can be absolutely certain that this authority will be able in all circumstances to pay out such reserves in a medium which will be always acceptable to the public. This can only be guaranteed if the notes of this authority can be given forced currency.'[14] By declaring the monopoly banknotes legal tender (or even *cours forcé*), the public is forced to use banknotes while unable to discipline the issuing bank. Convertibility does not have to be maintained and there is no objective limit to issue any more. This obviously creates the risk of inflation through overissue of notes.

Clearly, the idea of a government-sponsored monopolist bank did not 'naturally' emerge from this market logic of improving efficiency, but rather was pursued for political reasons. Although free banking theory remains unclear on what these political reasons are, the suggestion is that the underlying motivation was the desire for revenue or 'the prince's greed'. Not only inflationary overissue, but other sources of revenue for government as well may spring from the creation of a monopolist note-issuing bank. The monopoly on note issuing itself is valuable and can be sold. This can be done explicitly or implicitly by granting monopoly privileges in exchange for loans at below-market rates. But a statutory monopolist can also maximise profit and keep the seigniorage.[15] Seigniorage was traditionally the income of the sovereign from minting. In the case of bank money, seigniorage consists of the margin between issuing costs (near zero for note issuing banks) and interest income on lending. The emergence of central banking was due to political motives and 'historical accident'.[16] To be precise, according to free banking theory, the reason for creating a monopolist note issuing bank is to generate income for the Government. This I call the 'fiscal theory' of the origin of central banking.

[14] Smith (1936), p. 168.

[15] White (1999), p. 81: adds a third potential source of revenue, namely the conduct of monetary policy which can also yield considerable fiscal benefits to the Government. The benefits are most obvious when under a fiat money regime the central bank expands the stock of money as a direct source of revenue. "The leading government central banks were founded during an era of commodity money regimes, however, and it is unlikely that inflationary finance of this sort was envisioned at the time." Timberlake (1978), p. 10 (on the First Bank) and idem, 47 f. on (the Second Bank) however, argues that the acceptance of the Banks of the United States was in fact undermined when they were perceived as monetary managers, i.e. when they were (perceived as) pursuing monetary policy goals.

[16] Smith (1936), p. 5.

2.3 Goodhart's Emphasis on Systemic Risk and Last Resort Lending

Goodhart's 'Evolution of central banking' (1988) can be seen as a response to the free banking literature. The title of the book suggests that central banks emerged 'naturally' as opposed to the explanation of free banking theory that central banks are the result of government intervention in markets that could perfectly well take care of themselves. Despite Goodhart's explicit opposition to free bankers, however, there is much common ground between both theories.

Goodhart broadly agrees with the fiscal theory regarding the development of government-sponsored banks: 'Governments set up central banks to provide finance on beneficial subsidised terms and in return were often awarded privileges, such as the monopoly over note issue.'[17] The issuing bank earns seigniorage, which is the rent from issuing money. Originally, this was the income out of coinage, but in the case of banks issuing money it is the earnings on liabilities (be they banknotes or deposits) issued.[18] 'This is pure profit and therefore it is logical that governments confiscate this.'[19] Again, the reason for governments to establish a central bank was that the government expected to gain financial advantages, namely: seigniorage and cheap funding. Goodhart also concedes that the function of bankers' bank emerges spontaneously, in line with how free bankers presented it. The bankers' bank emerges as an attractive solution ensuring banks of sufficient liquidity and as a secure location to hold (part of) their reserves. At the 'central bank' banked earned interest over their deposit, which they would have missed by keeping cash reserves themselves. Without outside regulation or interference these incentives would be sufficient to bring about the establishment of a credit pyramid in which the biggest element would become the bankers' bank, even if it were not imposed.[20] Ziegler (1993) calls this a natural division of labour.[21] The idea was that as long as an effective clearinghouse system operated, any single bank which expanded the size of its business more rapidly than the average bank would find its balance at the 'clearinghouse' becoming negative and would be forced to pay out legal tender. That would set a limit on issuing, also according to the free banking view.

[17] Goodhart (1988), pp. 19–20.

[18] It is not completely zero since a certain risk premium should be taken into account. See: Bodenhorn and Haupert (1997) who try to calculate the premium.

[19] Goodhart (1988), p. 21. The terms 'logical' and 'natural' are frequently used in Goodhart's discourse.

[20] Goodhart (1988), p. 35. Giannini (2011) extends the microeconomic argument started by Goodhart. A settlement bank minimises the cost of collecting/keeping adequate reserves, because reserves can be obtained at one known place (for commercial banks), minimising the cost of holding and obtaining reserves.

[21] Ziegler (1993), pp. 475–505. This division of labour contributes to the bankers' bank becoming a reserve bank for the whole banking system.

Where a more aggressively operating bank would seek to prevent clearinghouse losses, it could do so by making liabilities (which constitute the cover for notes issued) relatively more attractive: e.g. by raising its deposit interest rate.[22] The information problem that then arises is whether a bank is paying a high rate because it is more efficient than other banks, or because it pursues a riskier strategy.[23] The need to maintain a good reputation should prevent banks from pursuing strategies that are too risky. But reputation also contains an element of public good. Since this problem is common to all banks (that want to maintain a good reputation), a common response can be expected: formation of a club.[24] The club aims to keep out free riders on the collective good reputation and devises ways to control each other by means of supervisory tools.[25] All this is in line with the free banking perspective.

A first departure from free banking theory is Goodhart's addition that to become the bankers' bank, it is also very helpful to have both a good reputation *and a large size* (due to government-sponsorship). More importantly, Goodhart diverges from the free banking theory in his view on the inherent instability of deposit banking. The combination of short-term liabilities that are means of payment and less liquid credit assets is a crucial feature of modern fractional or deposit banking that leads to the instability of modern banking.[26] Goodhart finds that the combination of these two makes for a situation in which *systemic risk* could affect the banking structure and seriously hamper economic activity in sectors that depend on it for payment facilities. Systemic risk makes banking different from other economic activities. "The danger of one bank failure leading to others failing increases the danger of a major collapse in the stock of money and hence a severe recession in the real economy."[27] It is an essential feature of banking that there is always the risk of insolvency. If a bank had to hold 100 % segregated reserves against checkable deposits, this would reverse the entire evolution of '(fractional reserve) banking'.[28] The problem with deposit banking is that removing the risk from this business removes most of the profitability as well.[29] Even sheer chance may cause failures and the probability of this is multiplied by the essential instability of depositor confidence. If one bank falls, all banks face the possibility of a bank run. Given that

[22] Goodhart (1988), p. 30.

[23] Idem, 48.

[24] All this is further elaborated by Goodhart (1988), pp. 67 and 68: "However, bank deposits can often be diversified efficiently among several banks. One of the main reasons for keeping the bank account is the facility of borrowing money when it is needed. By changing bank often, the creditworthiness built up over several years is lost."

[25] Idem, 69.

[26] Goodhart (1988), pp. 85–102. Contains the argument why banks need a central bank, which later was further elaborated in 'why banks are special.'

[27] Capie et al. (1994), p. 87.

[28] Goodhart (1988), p. 88.

[29] Idem, 91.

there is always a chance of bank failure, this may have contagious effects due to the banks' role in the payment system.

Goodhart elaborates on the special nature of bank loans and only briefly touches on the fact that the combination of banks' lending business and payment services is the transmission channel for wider macroeconomic problems.[30] This link to the payment system is crucial as systemic risk may emerge in the payment system. In order to explain this, a brief digression into the literature on payment systems is helpful.[31] Payment systems are the means by which money is transferred between actors in the financial system. Nowadays this happens mainly between banks, but in the past it could also be between other players in the money market. The payment system is a major channel by which shocks can be transmitted across domestic and international financial systems and markets. Nowadays, robust payment systems are therefore considered to be a key requirement in maintaining and promoting financial stability.[32] A payment system has characteristics of a natural monopoly because of the positive network externality that the value of a network to each participant increases with the number of participants. From that perspective, a single payment system is optimal. At the same time, the interdependence of all participants in a system leads to amplification of the primary reduction of liquidity as a result of the failure of one bank. An individual bank may suffer severely from credit risk, i.e. debtor defaults. This can create serious problems for a single bank but does not by itself generate systemic risk.

Systemic risk arises when the failure of one bank leads to problems for others, because the failing bank stops making payments and other banks receive less money (than expected) and cannot meet all their own payment obligations.[33] The concept of systemic risk leads to the need for a lender of last resort. The classic definition of a lender of last resort is from Bagehot's *Lombard Street* (1873). He defines last resort lending as lending freely on good collateral at penalty rates.[34] Illiquid but solvent parties can benefit from the services of a last resort lender. The solvency is warranted by the fact that they present good collateral. Their illiquidity makes them willing to pay the penalty rate. A lender of last resort has sufficient reserves to lend in times when other players in the market are unable or unwilling to do so. A lender of last resort can provide liquidity in situations where confidence

[30] Goodhart (1988), p. 91.

[31] The BIS, particularly the Committee on Payment and Settlement Systems (CPSS) actively pursue the payment systems' safety and efficiency. See references below.

[32] Committee on Payment and Settlement Systems (2001).

[33] Recently, the concept of systemic risk has drifted toward including macro shocks as well. For our purposes, however, we stick to the more limited payment system definition. The Herstatt crisis started with problems in one specific financial institution that, because of settlement and interbank linkages, threatened wider problems for connected institutions that were otherwise sound. See, for instance Caruana (2010).

[34] Bagehot (1873). The canonical account of how last resort lending should work. Somehow this theory is implicitly regarded as preceding the practice in much literature. Bignon et al. argue that in fact practice preceeded the formulation of the theory. See: Bignon et al. (2009).

has disappeared. In order to do so, other agents in the market have to be convinced that the liquidity provided is safe. Under the nineteenth century convertibility regime, this required the lender of last resort to hold large reserves of gold or silver specie. Otherwise, convertibility might be jeopardised.

In Goodhart's outline the emphasis is on banks, because banks face the risk of a bank run. The risk of a bank run originates from the combination of credit risk on their asset side with a shock to depositors' confidence on their liability side. However, systemic risk as defined above is not only possible in a banking system. Liquidity shortage as a result of a confidence shock can also occur in a financial system that has no deposit banks. The Netherlands in the first half of the nineteenth century is a case in point.

The banking industry itself could create an ad hoc institution to act as a lender of last resort, but Goodhart does not regard this as a structural solution, because ad hoc solutions depend on the number of banks in the system, 'the nature of the relationships between them and the accidents of personality and leadership'.[35] Only with government intervention to ensure a non-competitive stance, the conflict of interest can be overcome. A central bank therefore has to renounce competition and profit maximising in order to be able to hold excess reserves.

2.4 The Fiscal Theory: Glorious Revolution or Monetary Finance?

Free banking theorists and Goodhart understood the early development of central banks as an outcome of political, or rather, fiscal motives. The fiscal theory is based mainly on the case of the Bank of England and we will briefly dwell on that now.

At the end of the seventeenth century, the limit for the English Government to finance war expenditure seemed to be reached.[36] The use of forced loans from the wealthy as an additional form of taxation was strongly opposed by Parliament, since the forced loans were often poorly serviced and sometimes not at all.[37] In retaliation Parliament refused to approve of additional spending by the King. This led to a gridlock situation that was broken in 1688 with the 'Glorious Revolution'. The removal of outdated policies of the Crown that undermined potential creditors' trust in loans put an end to the practice of 'forced loans.' Furthermore, parliamentary control and tax collection were improved, replacing the short-term debt by a long-term debt secured by specific sources of revenue, making it a 'funded debt.' The combination of innovations has been labelled the 'financial revolution.'[38] The outcome was mutually beneficial because it provided the Crown with sufficient

[35] Goodhart (1988), p. 44.

[36] Broz and Grossman (2004), p. 49.

[37] This is a rough sketch of North and Weingast (1989), pp. 803–832.

[38] Dickson (1967).

income while Parliament exercised supervision over expenditure. This generated a basis of trust that made it possible for the Government to borrow at unprecedented levels.

It is in this context that the establishment of the Bank of England must be understood. The Bank of England was created as a joint-stock company that became an important creditor to the Government. It acted as manager of the Government's debt, handling issues, coupon payments and redemptions. The Bank of England received certain privileges in return for buying a sizeable quantity of government debt, which it held against its note issue. The Bank's role in managing the debt helped to facilitate the Government to borrow much more than otherwise would have been possible. In a way, the Bank of England bridged the gap that had kept the Government and the financial elite apart.[39]

Broz and Grossman extend the fiscal theory to explain the development of the Bank of England until about 1800. In their view, the Bank of England after 1800 was "the nation's central bank and charter debates . . . focused far more on monetary policy issues than on bank restrictions and public finance."[40] The starting point of their explanation is the temporary nature of the privileges granted to the Bank of England. Not only was the Bank's Charter limited in time, but Parliament could at virtually any time have passed legislation revising the charter. This meant that periodical negotiations on renewing the charter had to take place, which made it possible to respond to the needs of both the Government and the Bank in the face of unforeseen contingencies.[41] The Bank of England protected its privileges when faced with new competition, such as in 1697 when a 'Land Bank' was proposed that would 'become the sole creditor to an urgently needed loan.'[42] The Government tried to maximise its fiscal benefits. This interaction generated a dynamic in which the owners of the Bank sought excludable benefits to make it worthwhile for them to invest in this bank (for ways to overcome the problem of collective action, see Sect. 2.5). Therefore, barriers to entry were created, yielding rents and uneven distribution of these rents in favour of the owners of the Bank. This led to conflicts between those with privileges and those without. The Government then limited competition, because that helped to maximise its fiscal benefits. This again enhanced the dominance of the national bank, pushing it into a central role, for instance, by amassing reserves or becoming a settlement bank. It is from this central position that the Bank's monetary control role derives.

[39] Dickson (1967), p. 11; Fritschy (1988), p. 216.

[40] Broz and Grossman (2004), p. 59. It is not entirely clear why the political-economy dynamics would be different after 1800. The most important changes in the UK, perhaps, are the Suspension, the fiat money regime and the return to convertibility and then the search for a way to manage note issue ending in the Bank Act of 1844.

[41] Broz and Grossman (2004), p. 53.

[42] Idem, 57. The Land Bank was to create money backed by land, this way 'promising to extract somehow, from the land which they held the ready money they most often lacked' Clapham (1944), pp. 33 ff.

In so far as the fiscal theory is based on the English case, the financial situation of the English Government actually improved; not through inflation tax, but rather through creating a basis for confidence, allowing the Government to borrow more. The fiscal theory of the free banking theorists clearly meant something else. This is eloquently put by Hayek: 'Practically all governments of history have used their exclusive power to issue money in order to defraud and plunder the people.'[43] This view seems to be inspired by experiences with monetary finance, such as the twentieth century German hyperinflation. This fiscal theory on the emergence of central banks seems to be only loosely based on the case of the Bank of England and it remains something of a charicature if it means to imply that the establishment of the Bank of England was intended to make inflationary overissue possible.

To sum up, free banking theory explains the development of central banks as privileged entities mainly through an underdeveloped fiscal theory. Goodhart, on the other hand explains the emergence of a system where modern deposit banks pyramid on a modern central bank. Historically speaking there is quite a gap between the emergence of privileged institutions (for fiscal reasons), until the early nineteenth century, and the late nineteenth century (or even later), when Goodhart's modern central bank emerged. I now turn to theories that may help bridge that gap. All these theories do well in explaining the case of the Bank of England. That case may, however, be exceptional. International comparative research is necessary to assess whether models based on the Bank of England can claim universality.

2.5 Political Economy of Establishment and Development of Central Banks

The case of the Bank of England was outlined above in order to show the importance of fiscal motives in its establishment. Establishment of an institution, however, more in general cannot just be explained by pointing solely at welfare effects or market failures, because there is always the problem of collective action. The mere fact that an institution provides a public good does not explain its establishment. If everybody behaves rationally (and aims to minimise cost and effort), a free rider problem will inevitably arise, because and the benefits of a public good are non-excludable. Why would a rational individual make the effort to establish an institution if the same benefits would accrue to him if others make the effort? To help overcome the free rider problem, there has to be a sufficiently meaningful private interest served by creating the new institution. Establishing an

[43] Hayek (1976), p. 16. This explains why Hayek (and V. Smith) raised the issue. Their, for that time, very liberal approach to society can be understood in the context of the fear of totalitarianism. This led to resistance, or so one can interpret it, every time government intervened in society. Every form of government intervention was seen as a potential start of totalitarianism.

institution that provides a non-excludable public good therefore has to result from a 'joint production' of both non-excludable benefits (of the public good) and excludable private benefits.

Broz developed this kind of 'joint production' argument in his study of the establishment of the Federal Reserve in the United States.[44] Only when there is at the same time a benefit that can be privatised, an institution will be established and a public good provided. Broz illustrated this theory by analyzing the establishment of the Federal Reserve in 1913. The public good to be provided was payment system reform after the crisis of 1907. But the Fed was not established until 1913 because the need for payment system reform coincided with the desire for internationalisation of the dollar. The idea of a central bank became acceptable when a small group of bankers leading the most important New York banks, became convinced of the advantages of centralisation in terms of greater international use of the dollar. By promoting legislation in favour of central banking, those bankers aimed to gain from spreading their business across the Atlantic as the dollar became a currency of international trade. This additional output generated concentrated private benefits that could not be obtained without or independently from the payment system reform.[45] This logic has to be borne in mind in the analysis of the establishment of DNB. I take into account the fact that identifying a public good or market failure is insufficient for explaining the outcome and the timing of establishment, there also has to be a private benefit.

Once an institution is established, its development is influenced by both political and economic circumstances. Verdier explains the development of the proto-central banks in the early nineteenth century by pointing at the importance of state-building and centralisation and the structure of the financial sector. The focus of Verdier's analysis is not primarily on central banks, but rather on their function as a lender of last resort, in explaining differences between financial systems. His argument is that financial systems develop hand in hand with political systems, because of their (re) distributive potential. Distributional effects stem from the fact that banks provide loans, thereby preferring high-yield to low-yield sectors. Depending on the organisation of the financial sector (degree of intermediation, degree of specialisation from universal to specialised banks), some sectors have access to capital through banks while others do not. The re-distributional effect lies in the fact that banks must guard against insolvency (inability to meet obligations). Different banking structures have different ways of bearing the cost of maintaining solvency. A central bank, acting as lender of last resort, is a politically sensitive institution because last resort lending can have redistributive potential.[46] Therefore, the development of government-sponsored banks can be usefully regarded as the outcome of a political process with different interests competing to use the coercive state power to appropriate rents or a desired (re)distribution. "It usually took a

[44] Broz (1998), pp. 231–268.

[45] Broz (1998), p. 263.

[46] Verdier (2002), pp. 11 and 12. Verdier (1996), p. 5.

strong political centre to impose an English-type central bank on an unwilling periphery. The centralisation of note issue diminished short-term capital available for commerce and industry located at the periphery. Having to make its notes good as gold, the central bank typically invested in commercial paper of high quality, mostly originating from the centre. Governments in Britain and France would either refuse to create regional branches or, when they did, would discriminate against them."[47] On the other hand, central banking is late to arrive in countries where because of peripheral (agrarian) pressure; centralising tendencies are successfully opposed for a long time. Where centralising tendencies are strong and state power is sufficient to create a central bank, that bank can also function as lender of last resort. Therefore, the degree of spatial concentration helps to clarify that "although most of the countries had central banks in 1913, not all of them engaged in lending of last resort with the same equanimity."[48]

Countries that had a central bank established early (before circa 1850) were countries where successful state building had created a strong political centre. In other countries state-building was slow to materialise and the state had difficulty in monopolising note issue.[49] The most likely beneficiaries of the liquidity guarantee of the central bank tend to be the largest banks, mostly based in the centre, because they are considered 'too big to fail'. Wherever agrarian peripheries had the power to do so, they blocked the creation of a private central bank. Therefore, the timing of decisions to act as liquidity guarantor was also related to state centralisation. For instance, the Scandinavian countries had early national banks, but the pull of the agrarian periphery was such that it was not until the end of the century that each state could force its national bank to act as lender of last resort. The Netherlands would fit in the group with a strong centre imposing its last resort lending on an unwilling periphery. The only problem with the Dutch case in Verdier's model is that deposit banking was absent. His focus is on banking systems and banking was late to develop in the Netherlands. In my analysis of the development of DNB therefore the market context and political context and their potential interaction both has to be taken into account.

All in all, the two competing theories on the development of central banking outlined above are the free banking theory and the evolutionary theory. These two theories run parallel a to a large extent, as we saw, but diverge on the point where Goodhart considers fractional deposit banking inherently unstable and the credit risk may impact on the payment system. In order to solve the problem of systemic risk, the central bank has to be non-competitive and non-profit maximising. By pointing at the need for these two characteristics Goodhart diverges from free banking theory. Unfortunately, Goodhart does not explain how the institutional set-up of a central bank in fact changes towards this non-competitive stance. Important further analysis on the institutional origins and political background

[47] Verdier (1996), p. 20.
[48] Idem, 12.
[49] Verdier (1996), 3.

was provided by Broz focused on the problem of collective action and Verdier indicated the importance of the degree of centralisation of the state.

The role of the government in the process has been further explored by Giannini. His argument is diametrically opposed to that of the free bankers in that he argues that the state's role is to underpin confidence in the means of payment used. Free bankers regard government's intervention as an undesirable interference in efficient market outcomes and even a source of instability. As the elaboration on the role of government is a key point of debate in the development of central banking, the rest of this section is outlines Giannini's argument.

Giannini provides what he calls a (neo-)institutionalist[50] explanation for the emergence of central banks as part of the wider history of money. Money facilitates transactions by reducing transaction cost, but money is not simply a commodity, as in the neoclassical view. In a monetary economy, there has to be a unit of account and there must be a means of payment. In order to minimise transaction cost the relationship between the unit of account and the means of payment has to be stable (or predictable at least). The set of goods, procedures and conventions to satisfy the three conditions (unit of account, means of payment and a stable relationship between them) is called a 'payment technology'.[51] Payment technology develops over time, becoming more efficient.[52] As the volume of transactions in an economy grows, commodity money (coin) will at some point no longer suffice. In order to be able to conduct a larger number of transactions, innovation generates current accounts to allow book transfers and banknotes or other paper money that is more flexible in supply, because it does not depend on the availability of a commodity (such as gold coin) and the vagaries of commodity markets. In the development of payment technologies, there is a constant trade-off between the efficiency gains of the new technology and the cost of safety. In order to be efficient as a means of payment, an instrument has to offer a minimum degree of safety and reliability. There must be a set of rules, conventions and institutional mechanisms to sustain the confidence of people using it. The purpose of a theory of money as an

[50] Giannini (2011). I cannot do justice within the context of this chapter to the incredibly rich account of institutional development of money, or payment technologies in the first chapters of this book. Giannini calls his approach 'neo-institutionalist', in the tradition of Coase, D.C. North O. Williamson and M. Olson. This approach rests on three important assumptions: (1) economic activity is not co-ordinated solely by market prices, but also by several other institutions whose origins and functions should be the object of theoretical analysis; (2) the adoption of an operational concept of bounded rationality instead of a narrow view of rationality; (3) the principle that economic explanations should be dynamic, or evolutionary, in the sense that the economy should be studied as a process of historical change, rather than in terms of optimal states.

[51] Giannini (2011), p. 8. Nowadays the distinction between these concepts is not very relevant or useful, as for a euro the means of payment and the unit of account are in a relation of 1:1. "But for much of history this was not the case. Until the advent of the fiat standard, unit of account and means of payment were separate and the main objective of monetary policy was to maintain a given exchange rate between the two."

[52] "Monetary history can fruitfully be regarded as the development of ever more efficient means of payment." Hicks (1967), p. 6.

institution[53] is to study the confidence-creating mechanisms that evolved in order to support the acceptance of money.

The emergence of central banks coincides, in this perspective, with the introduction of banknotes as fiduciary money.[54] The introduction of fiduciary money requires that the issuer generates sufficient confidence. Convertibility into an asset with an intrinsic value equal to its nominal value was regarded as essential to generate trust in fiduciary money, but convertibility is just one way of building confidence and is not indispensible.[55]

In the case of banknotes, confidence may be undermined in three ways: lack of experience, size of banks, and overissue of bank notes. All three had, at different times and places and in different degrees, their impact on the success of banknotes. Firstly, lack of experience was, of course, a problem that disappeared over time as the professionalism of the banking business increased. Secondly, the size of banks remained a problem in many places, and in some remained a problem for a long time. Small-scale banks were more vulnerable to shocks, because they had smaller reserves and were not as profitable as possible, because they were unable to reap the benefits of economies of scale. Generally, the solution consisted of consolidation which enabled banks to realise the scale economies that are so important in banking. Thirdly, confidence in banknotes was also undermined by overissue.

The question of how to control the issue of fiduciary money, or how to prevent overissue, has been the most widely debated issue. Convertibility into an asset whose nominal value equals the intrinsic value was seen as a way to prevent overissue. Monetary systems without convertibility have resulted in overissue and inflation. This brings us back to the argument that competition in issuing money does not have to lead to overissue as long as the banking club has a functioning clearinghouse and manages to rein in potential free riders that make their liabilities more attractive by paying a higher interest rate on deposits, not because they are more efficient but because they take more risk. More risk in the system can bring individual failure and shock confidence, bringing the whole system to a standstill with negative real effects. Here, too, the solution was offered by the central bank with its monopoly on banknote issuance.[56]

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[53] Institutions can be defined as 'structures that govern transactions [arising out] of an effort to craft order, thereby mitigate conflict and realize mutual gain.' They arise not because they are efficient, but because they are perceived as the best possible remedy (to a given problem). Giannini (2011), p. 7.

[54] Fiduciary money is defined here as money that has a higher nominal than intrinsic value. Lacking intrinsic value makes it based on fides, trust. Note that this definition includes more than just inconvertible banknotes.

[55] An interesting example was the Amsterdam Bank of Exchange, whose bank guilder was also inconvertible. This was no exception according to Usher (1943), pp. 11 and 12: "Time and time again, banking systems have functioned when specie payment was suspended. The convertibility link is a creation of civil law rather than a spontaneous outcome of economic relations."

[56] Broz (1998), p. 244 concludes that overissuing currency "may be the dominant strategy for all banks except the dominant extra competitive bank whose monopoly position is undermined by it."

Of course, there were also downsides to monopolisation. It made the collection of seigniorage easier for the government, it enabled the commercial banks to minimise the cost of collecting adequate reserves and it created a single point of failure. In order to mitigate the risk of misuse of privilege, the monopolist banknote issuer was in turn severely regulated. The famous Bank Act of 1844 severely constrained the note issue by the Bank of England.[57] While shoring up confidence, it restricted the supply of money to facilitate the growing volume of transactions. The next innovation in payment technology was the introduction of deposit money issued by deposit banks. The gain in this new money was that it freed the banks from the strain of holding their own specie reserves as cover, since cash now included the banknotes of the monopoly issuer. As money held in current account at commercial banks was more efficient, it also became more efficient for banks to keep their own money in book-entry form at the central bank. This then led to the emergence of the central bank as the banks' settlement bank. The payment system profited greatly from economies of scale due to positive network externalities. The usefulness of a network increases with the number of users, but that does not mean the outcome should be a monopoly. "It is an open question whether the economies of scale are large enough to create a natural monopoly", but the coexistence of multiple forms of payment suggests this is not the case.[58]

All in all, the neo-institutionalist approach has two major implications.[59] Firstly, there is a continuous and irresolvable tension between the need for flexibility and the need for safety. Safety is easiest to guarantee by choosing commodity money with very rigid supply regulation or by imposing legal restrictions on the creation of money. Friedman noted that "the vices of strict commodity standards are the other sides of their virtues. Being automatic, they may not provide sufficient flexibility or adaptability to prevent substantial swings in prices or in income."[60] If the money supply is rigid it cannot accommodate economic growth and an increasing volume of transactions. Or, the other way around, sudden increases in the supply of the commodity on which the money is based, inflate the price level. This comes at substantial social cost. Secondly, the institutional context affects the development of central banks. The institutional approach incorporates both the market and the government dynamics. Market dynamics are driven by the incentives to reduce cost and increase efficiency. Government dynamics are driven by the objective to strengthen confidence. The institutionalist theory takes the view that government is best placed to underpin confidence in fiduciary money.

[57] Giannini (2011), p. 65.
[58] Idem, p. 22.
[59] Giannini (2011), 16.
[60] Friedman (1951), p. 206.

Conclusion and Structure of the Rest of the Study

The starting point for outlining theories on the development of central banking was the debate between Goodhart and the free banking theorists. With the publication of *The Evolution of Central Banking* Goodhart replied to the free banking literature that had emerged since the 1980s. The free banking school argued that the presence of central banks was a problem rather than a solution and that market forces would eventually lead to better outcomes. Goodhart argued that the central bank was necessary because of inherent instabilities in fractional reserve banking. It was shown that both views have much in common. Both agree regarding the spontaneous, or 'natural' development of the bankers' bank and clearinghouse/settlement bank functions and also in their adherence to a rather loosely formulated fiscal theory of the emergence of national banks. Beyond this common ground, the views on the defining functions of a central bank and on the development of central banking diverge. For free banking theorists the key element defining central banking is the monopoly on note issue. The emergence of this privilege is explained by political factors. For Goodhart the key element of central banking is the role as lender of last resort intended to mitigate systemic risk. A central bank has to become a non-profit maximising and non-competitive bank, which is loosely explained by pointing to the need to avoid conflicts of interest.

Following this outline of the two theories, four main points of criticism were developed by looking at further research into the development of central banks. Firstly, the fiscal theory on the development of central banking is not universal (based mainly on the Bank of England). Secondly, the theory is ahistorical in that it seems to leave an unexplained gap between the premodern national bank with its fiscal objective and the modern central bank with its payment system objective. Thirdly, the problem of collective action is not addressed. Establishment of an institution cannot be explained satisfactorily by pointing at the public good that it is supposed to provide. Also, it is important to distinguish between the establishment of the institution and its development. Fourthly, once an institution exists, its development has to be understood in terms of the market and political context in which it operates.

Underlying the controversy in economic theory are two opposing views on the nature of money. The neoclassical view regards money as a commodity like any other and banking as a business like any other. The institutionalist view differs, regarding money as an institution[61] that develops historically in

(continued)

[61] Giannini (2011), pp. 8 and 9 elaborates on the key "difference between money and other durable goods resides in the fact that the quality of money, that is, the real services it can render, depend on

response to changing conditions driven by market forces seeking to improve flexibility on the one hand, and by government intervention aiming to improve confidence on the other. This controversy underlies much of the rest of our analysis will become particularly clear when we attempt to determine which objective DNB was supposed to achieve. The official objective of DNB as laid down in the 1814 Charter was to promote trade. Grossman, in an international comparison, mentioned this as 'a third category of objectives' in establishing national banks, but it remains unclear what exactly DNB was supposed to do.[62]

This overview of the theories on the development of central banking illustrates the need for careful historical case studies in addition to the English and American examples. The overview also makes clear that a distinction has to be made between establishment and development. Our case study first explains the establishment of DNB and then focuses on the development of DNB until about 1852. Finally, the theoretical framework provides the elements to be included in our study of the development of central banking in the Netherlands.

The following chapters of this thesis address the identified issues to see what explanation fits the Dutch case best. Firstly, the establishment of DNB is explained. Why was it established and why was it established in 1814? Was it a 'joint production' and if so, what did this joint production look like in the Dutch context? Secondly, we turn to the governance structure of DNB. Since it was established as a private corporation, the question is whether this gave rise to conflicts between the private and the public interest. The Goodhartian element of profit maximisation will also be addressed. Thirdly, the relationship to the Government is discussed. Whether DNB was independent has to be analysed by looking at the instruments the Government had to influence or control DNB. Next, we turn to what the Government expected from DNB and whether DNB met the Government's expectations. We look at whether the fiscal theory or other objectives can explain the way DNB developed. Fourthly, we turn to the market context in which DNB was established and operated. DNB started with an exclusive charter, but it did not have a monopoly on note issue and its banknotes were never declared 'legal tender' and never had 'cours forcé'. Thus the demand for banknotes depended on acceptance and we will look into how that developed. Did DNB logically emerge as the 'bankers' bank'? In the final chapter, we look at DNB's credit

(continued)

the future supply of money, as well as on the demand for it by other consumers. The quality of one nominal unit of money depends on its price at the moment it is spent." Because of this uncertainty, confidence in its quality must be permanently sustained, or the payment technology based on it will deteriorate.

[62] Grossman (2010), p. 44.

policy to identify what objectives informed it. What objectives did DNB pursue? Was it acting as a lender of last resort or did it pursue other objectives? How, and if so why, did this change between 1814 and 1852? To begin with, however, the next chapter sketches the relevant political and economic context of the Netherlands during that period.

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Chapter 3
Dutch Economy and State 1800–1860

3.1 Introduction

To set the stage for understanding the evolution of Dutch central banking, this chapter outlines the main economic and political institutions and developments in the Netherlands from 1800 to 1860. Political and economic developments interact continuously and need to be understood in their mutual coherence. It is therefore somewhat arbitrary to treat the political and the economic dimension separately. Still, since both dimensions had their own dynamics, the periodisation of political developments does not logically match that of economic developments.

In the 1800–1860 period, the Netherlands underwent important political and economic transitions. Political unification and democratisation began and the foundations were laid for modern economic growth. During the first 60 years of the nineteenth century, the unitary state and constitutional monarchy became firmly established. Economic development did not show such clear modernisation. The devastations due to the Napoleonic era were in many ways overcome in the 1820s and economic growth picked up. However, instead of accelerating, the Dutch economy slowed down severely in the 1840s and the transition that laid the basis for the take-off of modern economic growth arrived only in the 1850s.

3.2 The Political Dimension

The political history of the Netherlands from 1795 to 1860 can be usefully divided in three sub-periods: before, during and after King Willem I. For our purposes, the first period might be called a 'pre-history', as it ends in 1814 when the Nederlandsche Bank (DNB) was established. The reign of Willem I lasted from 1814 to 1840. In 1840, two liberal decades started. Below these three periods will be sketched and the main institutional changes will be highlighted.

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3.2.1 Political Unification (1795–1813)

The revolution years in the Netherlands from 1795 to 1813 brought three fundamental changes: (1) the unitary state was established, (2) a constitutional monarchy was introduced and (3) government debt became unsustainable. The Dutch Republic that had known its Golden Age as a superpower in the seventeenth century had since declined in importance. This decline in the eighteenth century was perhaps not so much a decline in absolute terms, but the Netherlands underperformed compared to England and France. The military and naval superiority of England and France had become clear by 1780 when the Fourth War with England not only led to defeat and a blockade of Amsterdam, but also impacted heavily on the East Indies Company. After 1780 the French also started to meddle in Dutch politics.

Internally, the Republic had become deeply divided in the last decades of the eighteenth century. Politically, Orangist conservatives opposed Patriots, the federal structure of the Republic kept sovereignty at the provincial level, religious groups lived isolated from each other, and there was a stark difference between cities and rural areas.[1] The *Bataafse* Revolution, overthrowing the rule of Stadholder Willem V of Orange, took place in 1795 and succeeded when the French supported it by military means. The Stadholder fled to England and the Patriots started working on a constitution for a unitary state to replace the federalist Republican political structure. The French kept a close watch over developments, because they wanted to prevent radical changes that might undermine the Dutch creditworthiness, which the French regarded as an asset they could use.[2] The Revolution proceeded without much violence, but Orangists were excluded from political participation. After elections in 1796 a Constitutional Assembly was brought together in which moderate Patriots were the largest faction. The Assembly was not very successful in drafting a constitution, as divisions among federalists, moderates, radicals and *unitarissen* could not be overcome. Also a second Constitutional Assembly was unsuccessful. In January 1798, radicals organised a *coup d'état* supported by the French. A radical unitarist constitution that excluded opponents from the political decision-making process was drafted and pushed through. The unitarist constitution appeared to enjoy broad support among the population.[3] In June 1798 moderates took over power from the radicals by another *coup d'état*, but they maintained the new constitution. In the same year the government debt that had been accumulated by the different Provinces (Holland being the richest, but also carrying by far the largest debt) was consolidated into a national debt (*Amalgama*). A unitary state had emerged.

The French intervened again in 1801, by then under Napoleon's rule, because the Dutch moderate Government was 'too Jacobin', that is, too democratic (because of

[1] Kossmann (1986), pp. 43ff. For a more detailed account of the developments during this era see: Schama (1989).

[2] Kossmann (1986), p. 79.

[3] Idem, 85.

the powerful representative legislative body) and perhaps too ineffective. Napoleon imposed a more autocratic structure in the Netherlands, culminating in the dictatorship of R.J. Schimmelpenninck in 1805. This autocratic structure was slightly more effective in building up central government. Important steps in this process were made by the Minister of Finance, I.J.A. Gogel, who introduced a nationally harmonised tax system.[4] In 1806 Napoleon decided the Netherlands should be a Kingdom with his brother Louis Napoleon as King. While this in part reflected Napoleon's Europe-wide empire-building ambition, it also aimed to make the Netherlands more effectively subservient to French interests. In 1809 the *Wetboek Napoleon, ingerigt voor het Koningrijk Holland* came in force. This Code replaced the diversity of local *'costumen'* and Roman Law. In 1810 the Netherlands ceased to exist and became part of the French Empire, and the French civil code came into force. The change brought some benefits including the building up of a central administration and a relatively independent and more predictable judiciary. But first and foremost, the incorporation into the French empire was geared to serving the French war machine through providing as much money and soldiers as possible. This exploitative strategy ruined the Dutch economy. At the same time, the Dutch economy was cut off from its main source of growth, international trade, because of the Continental System. The Continental System imposed by Napoleon prohibited trade with England. The Debt became unsustainable by 1809 as 33 million guilders of tax revenue were collected while the interest to be paid had risen to 39 million guilders. No interest had been paid in 1808 and 1809 and Napoléon decided to cut the debt in three (*tiërcering*) and continued only to pay interest on one-third in July 1810.[5]

After the defeat of Napoleon in the battle of Leipzig in October 1813 the French were pushed back, pursued by Allied troops.[6] The latter invaded the Netherlands in early November 1813. When the French withdrew, a vacuum emerged in which aristocratic elements led by G. K. van Hogendorp invited prince Willem Frederik of Orange, son of the last Stadholder, to return to the Netherlands and assume sovereignty.[7] The Prince landed at Scheveningen beach on November 30, 1813. Van Hogendorp played an important role in setting up arrangements for a new national government. During the next months a constitution was drafted on the basis of a proposal which G.K. van Hogendorp had developed over several years, and which made the Netherlands a constitutional monarchy.[8] The constitution was accepted by an 'Assembly of Notables' with representatives from all provinces. In

[4] The new system was welcomed by the capitalists in Holland, as it reduced the traditional reliance on (more or less voluntary) wealth levies. At the same time, Gogel tried to introduce more direct taxes on income and reduce indirect taxes the burden of which was mainly born by the poor.

[5] This sketch is in very broad strokes. For a much more comprehensive account see: Pfeil (1998). Fritschy and van der Voort (1996), p. 65.

[6] The Allies were Russia, Prussia, Austria and Sweden.

[7] Aerts (1999), p. 63.

[8] Aerts (1999), p. 64.

late March 1814 the new constitution was adopted and the Orange monarchy in the Netherlands was established. The Vienna Congress in 1815 imposed a revision of the Constitution: the Kingdom of the Netherlands would be expanded to include the Southern Netherlands (Belgium and Luxemburg, see Map 1). King Willem I reigned from 1815 onward as sovereign of the United Kingdom of the Netherlands.

All in all, from our perspective, three major changes in the political structure stand out. Firstly, the unitary state was established. Its effectiveness was as yet limited, however, as a fledgling central bureaucracy had to contend with local and regional powers that managed to retain financial autonomy until the mid-nineteenth century.[9] As part of the formation of the central state, legal harmonisation was achieved through the introduction of a national Civil Code and the uniform organisation of the law courts. Secondly, the newly introduced constitutional monarchy conferred Napoleonic autocratic powers on the King. Thirdly, the public finances got into a deplorable state. The indebtedness in the Republic had long been high, but had been paid for by high taxes on a wealthy elite willing to pay taxes *and* hold the debt, as long as they were in control of the State.[10] After this balance had been disrupted, government debt had become unsustainable.

King Willem I had to find a way to reconcile his ambitions and good intentions with the complex situation of the Netherlands. The unity of North and South would be problematic as the characteristics and interests of the two parts of the Kingdom diverged in important respects. The population of the Northern provinces was about two million while that of the South was three and a half million. The autocratic constitution did not provide checks and balances to the executive power of the King, while the financial constraints were severe from the start.

Several institutional innovations of the previous period were maintained, such as the consolidation ('*Amalgama*') of the national debt, the fiscal unification, legal reforms and expansion of the state apparatus. The constitution establishing the Kingdom was not a restauration. The way the new constitution concentrated power in the hands of one person was unprecedented in Dutch history. The Government was dominated by the King, who could fire ministers at will. Ministers were accountable to the King. The King could issue royal decrees. The Parliament had very limited powers. It consisted of two Chambers, and half of the Second Chamber's 110 members were from the North, despite the much larger population in the Southern provinces. The First Chamber represented the nobility.

3.2.2 The Rule of King Willem I 1814–1840

King Willem I was highly ambitious and had the best intentions for the Netherlands. His was nicknamed '*Koning Koopman*', Merchant King, because of his keen

[9] Horlings (1995), p. 319.

[10] Fritschy and van der Voort (1996), pp. 80ff and Hart (1993).

interest in promoting economic welfare.[11] He developed infrastructural projects, including several shipping canals in different parts of the country. While these canals did not lead to integration of a national shipping infrastructure, they did improve local shipping conditions and many primarily served the interests of international trade.[12] The King also initiated enterprises. DNB was the first, followed by the Amortisatie-Syndikaat, the Nederlandsche Handel-Maatschappij (NHM) and the Société Générale (SG). All these enterprises originally had their own objectives: DNB to stimulate trade, the Amortisatie-Syndikaat to buy up debt, the NHM to organise trade with the East Indies and the SG entered banking business in the Southern provinces.

But even a benevolent autocratic ruler sooner or later faces constraints that cannot be solved by political power. Willem I faced two main constraints. The first was that it was not easy to define the 'general' or public interest of the entire Kingdom. The King had to find a way to reconcile different private interests and sometimes he had to resort to compromises. A good example was the diverging interests of the North and the South with regard to trade policy: the Holland mercantile interests supported free trade which it saw as a part of restoring the old staple market role in order to regain profitable trade opportunities. But the Southern industrial interest wanted protection by imposing tariffs. In 1819 excise taxes were imposed on coffee and sugar to balance the budget, much to the dislike of the commercial interests in Holland. After 1821 the commercial interests seemed to have prevailed, as the King increasingly became aware of his dependence on the Amsterdam capital market.[13]

The second constraint was financial. The '*tiërcering*' under Napoleon led to a temporary relief, while at the same time it became more expensive to borrow. One of Willem's first decisions after he became King was to restructure the national debt. The debt was split in two parts, only Nederlands Werkelijke Schuld ('real' national debt) would be serviced normally, at a uniform interest rate of 2.5 %. The other part would be 'deferred' (*uitgesteld*). Every year a small portion of the postponed debt would be turned into 'real' debt. That way the interest burden was predictable. It was projected to increase over time, as real (serviceable) debt would grow. This put an important constraint on the King's ambitions to invest in the country.[14]

Finding the needed funds and channelling them to the intended purposes required considerable ingenuity. The King resorted to creative bookkeeping and helped by the Dutch tradition of secrecy and non-transparency in financial matters,

[11] Van Zanden and Van Riel (2000), pp. 206 and 207 point at the different interpretations of Willem I's achievements over time. More recently, the judgement has been relatively favourable. The authors do not question the intentions and ambitions.

[12] Horlings (1995), p. 318.

[13] van Zanden and van Riel (2000), pp. 205 ff. The King failed to effectively break through traditional structures in important sectors.

[14] Fritschy and Van der Voort (1996), p. 76.

minimised accountability.[15] Most enterprises established by the King for some public good reason were sooner or later turned partly or completely into vehicles for raising funds and channelling them to the state. The Amortisatie-Syndikaat (AS) was the best example of this. Originally intended to contribute to the 'amortisation' of the national debt, the Syndikaat soon found that it was difficult to buy up the national debt as it drove up prices. The capital raised for the AS activity was then used to finance initiatives which the King could not fund otherwise.[16] The same applied to DNB and NHM: eventually, despite their original intent and purpose, they also ended up lending to government.[17]

Another way to reduce public finance accountability was the introduction of a 10-year budget cycle, starting in 1819. Effective parliamentary control after the budget was approved in 1819 was not possible until 10 years later, in 1829. It is probably no coincidence that the two main political shocks took place at the end of these cycles: in August 1830 the Belgian Secession and in 1839 the start of the process that resulted in the King's abdication. Because public finances after 1822 had not improved, despite economic recovery, the budget that had to pass Parliament in 1829 was severely criticised.[18] The fiscal structure and government spending had led to sizeable transfers from the Southern provinces to the North. This probably helped to set off the Belgian Revolt.[19] The King refused to accept the Secession and went to war. He maintained a standing army throughout the 1830s. This was so costly that by 1839 when the budget was once more put before Parliament the problems became acute and the bankruptcy of the AS was announced. This forced the Government to disclose the budgetary state of affairs. But this proved very difficult because of the many different and opaque ways the King had financed Government expenditure. Recent reconstructions indicate that the real debt had risen to more than 200 % of GDP. The national debt had become unsustainable again.[20] Just before King Willem I abdicated he had approved a new constitution acknowledging Belgian independence and somewhat reducing the power of the King by conferring a degree of political responsibility on ministers. King Willem II succeeded his father.

[15] Van Zanden and Van Riel (2000), pp. 121 and 122.

[16] Idem, 126.

[17] See chapter on the establishment of DNB below.

[18] Van Zanden and Van Riel (2000), pp. 127 and 128.

[19] Idem., 128.; see also Horlings and van Zanden (1996).

[20] Van Zanden and Van Riel (2000), p. 130. In the Parliamentary debate in 1844 on the measures to restore sustainability Van Hall said in Parliament that 'state bankruptcy' was nearly a fact and added that his mentioning of that could not make matters worse.

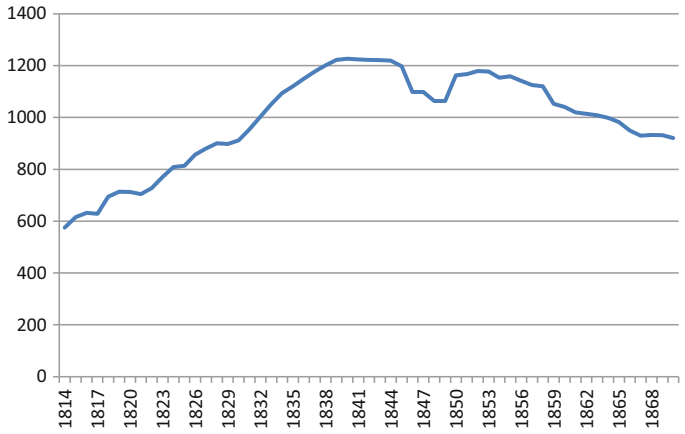

Fig. 3.1 Government debt (hfl mln) 1814–1870. Data kindly provided by F. Bos (CBS)

3.2.3 1840–1860 The Liberal Decades

The new constitution was, however, by no means a finished product. Working out the details was the main part of the liberal programme that was pursued in the following years. At the same time, however, this programme also envisioned increased transparency of government, a shift towards more liberal fiscal and trade policies, and increases in public spending on national infrastructure. These issues are briefly discussed below. The most urgent problem, however, was that of public finance. The development of the national debt in guilders is shown in Fig. 3.1.

The national debt had already become unsustainable by 1810. Despite the *tiërcering* the debt doubled again in absolute terms during the reign of King Willem I. In Fig. 3.2 the government debt is shown as a percentage of GDP. The volatility of this ratio is mainly due to fluctuations in GDP. The economic recession in the late 1810s and early 1820s eroded tax revenues, thereby increasing the deficit. The two main hikes in government debt resulted from strong increases in expenditure. The hike in the early 1830s, for instance, reflected the cost of maintaining a standing army after the Belgian secession in 1830. During the first half of the 1840s, after the abdication of the King, the problems became public and acute. In 1842 Minister of Finance Rochussen published the size of the deficit, the magnitude of which had remained unknown until then.[21] In 1843 Rochussen attempted to avert state bankruptcy through a conversion of the debt (aiming to reduce the burden of interest rate payments) but failed. Then the introduction of an income tax was attempted by his successor. This also failed. The real turnaround was achieved by Minister of

[21] Van Zanden and Van Riel (2000), pp. 121–130 Because of the various sources of funds and the different ways of administrating, it is virtually impossible to reconstruct the whole picture, but van Zanden (1996), provides the basic facts needed for such a reconstruction.

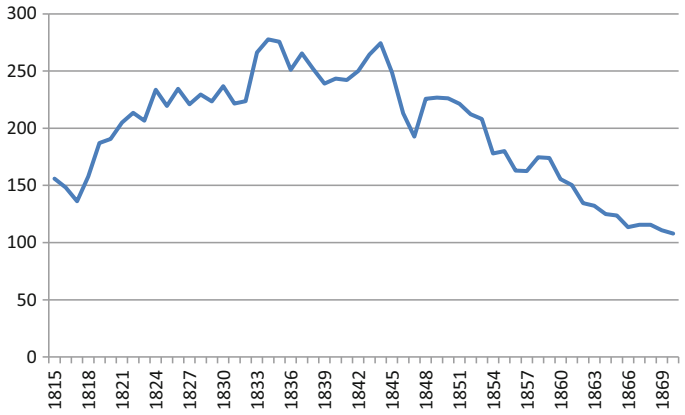

Fig. 3.2 Government debt to GDP(%), annual 1815–1870. Source: Database of clio-infra.eu; available at http://www.clio-infra.eu/datasets/countries (Netherlands, total gross central government debt)

Finance F.A. van Hall. He managed to avert a 'state bankruptcy' in 1844. By cutting expenditure and imposing a large low-interest rate voluntary loan (under the threat of an 'obligatory loan') he raised cash to meet immediate payment problems and cut the deficit. He also succeeded in converting the outstanding debt so that interest payments declined.[22] After that, gradually public finances returned to sustainable levels and the debt was reduced in absolute value, a process which was greatly helped by the increasing revenues from the colonies. As GDP growth picked up in the 1860s and the revenues from the colonies ('*Batig Slot*') grew, the deficit disappeared and the debt/GDP ratio improved dramatically (see Fig. 3.2).

The decline of the debt-to-GDP ratio after the 1840s was only briefly interrupted by the tumultuous developments of 1848 and 1857, but the take-off of GDP growth then helped to improve matters after 1860. The nominal amount of debt declined much less rapidly over the 1850–1870 period, but in a growing economy that was no problem. However, the liberal reform programme in the 1840–1860 period consisted of more than just fiscal adjustments. The drastic revision of the constitution, a shift towards more liberal fiscal and trade policies and higher public spending on national infrastructure were especially meaningful elements. These are briefly discussed below.

After the independence of Belgium had been laid down in a treaty, the constitution had to be amended accordingly. Apart from the geographical adjustment this new constitution introduced limits to the power of the King but it was not fully worked out, so that in practice, the King's influence remained extensive. In 1844, a first liberal proposal for a new constitution was rejected by Parliament. Only when social unrest across Europe climaxed in 1848 did Thorbecke see fit to propose another liberal constitution. King Willem II accepted, apparently out of fear for

[22] Buijs (1864), pp. 148–150.

revolution. Key elements in the new constitution were a directly elected parliament, and 'ministerial responsibility' making ministers accountable to parliament rather than to the King. Politics should no longer be based on tradition and authority, but on open and rational debate. Underlying this was also the idealist notion that the aim of politics should be the pursuit of the public interest or the common good, and that private interests should not prevail in decision making. For this reason, but perhaps also having learned the hard way what damage opacity could do, liberals also tried to improve the transparency of government in order to increase accountability. As Thorbecke said: "public affairs should be treated in public." ("*De publieke zaak wil publiek behandeld worden*.")[23]

From the constitution, other legislation ('*organieke wetten*') sprouted. The '*Gemeentewet'* (Municipal Government Act) was an example. Thorbecke regulated that local government throughout the Netherlands should be uniformly organised. This further undermined the tradition of oligarchical rule by a few families at the local level.[24] At the same time, the possibilities for central government to intervene in conflicts of interest between local communities, for instance, in conflicts on infrastructural development, were strengthened. This in turn contributed to the integration of the national market. Improvement of the public infrastructure to integrate the national market and connect it internationally was another important element of the liberal agenda. Interregional connections were greatly improved. The State actively invested in telegraph connections and railways from the 1850s onward. Transport had been a major bottleneck which could be overcome in the second half of the century as central government obtained the means to do so.[25]

The last important element of the liberal agenda was to liberalise international trade. In the 1840s this was an international trend, promoted by the United Kingdom. Rhine shipping had already been liberalised in the late 1820s, although Willem I had resisted, fearing competition to the Dutch staple market cities. By the 1840s it was embraced by the Dutch port cities (i.e. Rotterdam and Dordrecht) when Rhine shipping became profitable due to its role in transit to Prussia. Liberalisation no longer being opposed, a liberal Tariff Act was adopted in 1845. In 1850 the Shipping Acts liberalised international shipping as well.

Paradoxically, the wind of change of liberalism did not blow in the colonies, which were exploited maximally in these decades, under a compulsory tillage system (*Cultuurstelsel*).[26] The revenues from the colonies were large even though the system of exploitation was not efficient. Attempts to improve efficiency failed, mainly because of the influence of the NHM and the vested interests in sheltered

[23] Te Velde (1999), pp. 100–104.

[24] This was not Thorbecke's achievement, but rather the part of a process of reducing the autonomy of cities that had started already in the revolutionary years before 1814. See Prak (1999), pp. 253–259.

[25] Horlings (1995), p. 319.

[26] Van Zanden and Van Riel (2000), p. 219 quote a contemporary expression: 'liberal in the Netherlands, conservative in the Colonies.'

sectors linked to the colonial business.[27] The *Cultuurstelsel* was not abandoned until after 1860.

After 1860, politics in the Netherlands gradually turned into a different game. The increasing dominance of the central government, ongoing national integration and democratisation, and the rise of political parties combined to bring dramatic changes to the political arena and game. New issues, such as the social question (labour conditions) and the relationship between State and church dominated the agenda.

3.3 Economic Growth from 1800 to 1860: Transitional Growth

Before we discuss the main economic developments in the Netherlands in the period from 1814 to 1860, we look at long-term developments. From 1780 onward, a relative decline of the Dutch economy set in. Around the turn of the century and from 1809 to 1813, decline was even absolute. After 1814 the economy recovered, but grew at relatively high rates compared to those in the eighteenth century. Figure 3.3 shows the development of per capita national expenditure, output and income over the period relevant for our purposes. Considering the fact that the years after 1810 must have seen absolute decline across all sectors, output levels must have been much higher around 1800. When economic conditions improved after 1813 therefore, this must to some extent have been a recovery to 'normal' levels of output. A steady rise of per capita output followed.

At first sight, the trend is upward throughout this period. In a more long-term perspective, the growth rate is modest compared to what it became after 1860, while the sources of growth were the same as in the premodern era, with important roles for agriculture and international trade. Growth in the first half of the nineteenth century, however, was not yet modern, self-sustaining growth. Such modern growth was not observed until after 1860. Sketched in very broad strokes, modern growth means sustained growth that feeds back: increasing productivity leads to higher wages and hence increased consumption. As expenditure picks up, output growth is sustained.[28]

This modern pattern is not just an acceleration but also a structural change: an increasing role of industry, as interregional trade and transport grow domestically and international trade expands. None of this happened before 1860 in the Netherlands: economic growth, if any, was still generated almost entirely within the traditional mercantile economic structure. The Netherlands industrialised at a relatively late date, even though economic growth had already picked up in the first half of the century.

[27] Van Zanden and Van Riel (2000), p. 221.

[28] Modern economic growth as defined by Kuznets (1966).

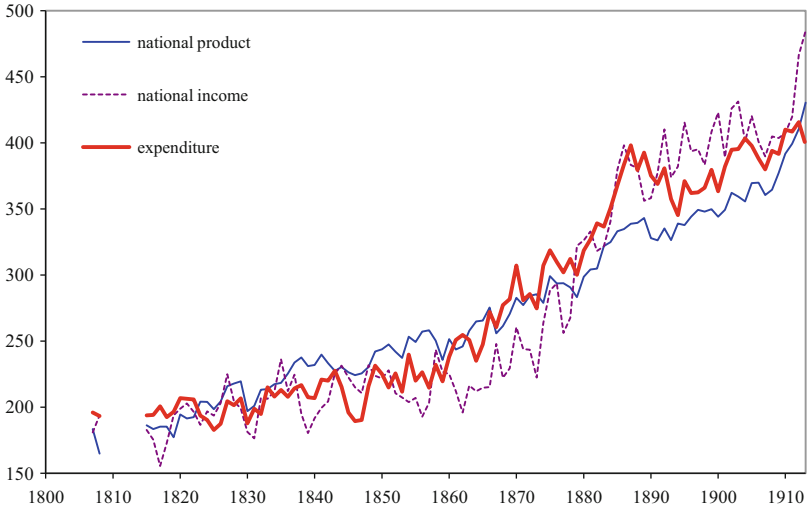

Fig. 3.3 Dutch per capita output, expenditure and income (constant prices, guilders), 1800–1913. Smits et al. (2000)

3.3.1 Heritage from the Eighteenth Century

Agriculture in the Dutch Republic was highly productive and specialised in producing for the urban and export markets. Lower margin agricultural products were imported (e.g. grain from the Baltics) and an international division of labour allowed the Republic to focus on high margin agricultural products. This focus, however, proved vulnerable to impediments to international trade. In the last decades of the eighteenth century such impediments multiplied and the Dutch Republic was no longer able to retaliate effectively against English, French or German protectionist measures. In the late eighteenth century rising grain prices first led to visibly higher mortality rates, because higher food prices meant hunger for the poor. Before then, the Dutch economy, being a staple market, had profited from high prices without visible negative demographic effects. It was a sad sign of the decline of Amsterdam's entrepôt function.[29]

Production and income from traditional services and industry showed a continuous relative decline after 1780. Industry produced to a large extent for the domestic market, and thus suffered from the steady decline of real income (due to rising food prices). After 1807, this relative decline was replaced by a total economic breakdown and absolute decline. The international services sector had always been based on the staple market, mainly in Amsterdam. This made the economy of Holland (which accounted for most of the overall Dutch economy) highly dependent on the international services sector (and on demand from abroad).

[29] Van Zanden and Van Riel (2000), p. 87.

The domestic services sector played a much more modest role in growth and was characterised by relatively low productivity and a predominantly local orientation.[30]

The staple market had in its heyday been facilitated by the military power of the Republic. But gradually the financial strain of maintaining a large mainly naval force became unbearable. The high indebtedness of the Republic had been made possible by the willingness of the wealthy elite to pay high taxes and hold the debt. However, a combination of high expenditure (on war, interest payments and transfers to France) and the economic collapse after 1807 made it impossible to service the debt. Therefore Napoleon decided to cut the Dutch debt in three and only service one third. This strongly reduced interest payments as a source of income for the wealthy and undermined confidence severely. By 1813, interest rates in Holland had become higher than in France and England.[31]

In sum, the economy inherited by the newborn Kingdom was characterised by a decline in the entrepôt function of cities, particularly Amsterdam. Insufficient military power to retaliate or to enforce contracts abroad meant a reduced role in international trade. The national market was insufficiently integrated and domestic expenditure was largely determined by food prices. The breakdown of the economy after 1807 and high taxes completed a bleak outlook. On the positive side, the enormous wealth that had been accumulated in the past still allowed the financial sector to operate internationally.

3.3.2 The Nature of Transitional Growth 1814–1860

The period of transitional growth from 1814 to 1860 was one of strong ups and downs. Table 3.1 summarises the cyclical development discussed below. It begins in 1814 with a general picture of economic recovery leading in 1817 to a real boom that was driven by international trade in general and agricultural exports to the UK in particular. This was very profitable, because prices in the UK were relatively very high.[32] When British prices declined in 1818 and 1819, the Dutch economy was hit hard[33] and in 1818 a recession set in that lasted until 1823. The recovery brought a new dynamic, which led to a prolonged period of growth until about 1840. In the 1820s a rise of real wages due to a drop in food prices stimulated population growth and output increased. A change arrived in the 1830s when growth became more and more dependent on 'the colonial complex'. Contrary to what happened in neighbouring countries, Dutch economic growth stagnated during the 1840s. Only the agricultural export sector profited from the incipient

[30] Horlings (1995), pp. 110–112.

[31] Van Zanden and Van Riel (2000), p. 197 and Homer and Sylla (2005).

[32] Van Zanden and Van Riel (2000), p. 149.

[33] Idem, 155.

Table 3.1 Overview of business cycle phases, 1814–1860

Start	End	Cyclical phase
1814	1818	Recovery (agriculture and international trade)
1818	1822	Recession
1822	1825	Recovery (industry and services)
1825	1840	Growth (industry and services gradually replaced by agriculture and international services)
1840	1850	Stagnation to deep crisis
After 1854		Gradual recovery
1860s		Take-off of modern growth

Van Zanden and Van Riel (2000), passim

liberalisation of international trade. After 1840 a fall in the prices of colonial products led to a shock in the export revenues of the colonial complex. At the same time, local demand stagnated due to deteriorating standards of living as crop failures pushed food prices up and real wages down. The bottom was reached in 1848 and recovery after that lasted until 1851–1852. Nevertheless, by 1854 standards of living deteriorated so much that poverty drove people out of Amsterdam.[34] The picture changed only gradually during the 1850s. Relatively low wages and the falling price of coal improved the competitiveness of Dutch industries. The reduction of transaction costs caused by the liberalisation of international trade facilitated a process of international specialisation that benefited Dutch industry. At the same time, the national market continued to integrate and domestic demand grew as real wages picked up, which in turn supported industrial growth. The decade after 1855 marked a turning point as modern growth took hold. In addition to the decline of the colonial entrepôt and traditional industries, old merchant houses disappeared as a shift took place from merchant to industrial capitalism and toward industries targeting the home market. These structural changes laid the basis for modern self-sustaining growth after 1860.

3.3.3 Sectoral Developments

Part of the legacy from the previous period was a highly specialised and productive agricultural sector that was strongly export-oriented. This also made the sector vulnerable to disruptions in international trade, such as occurred in 1809–1813 and again in 1818–1823. In the 1830s production expanded and in 1835 culminated in record harvests. Economic growth abroad during the 1840s boosted exports and

[34] Jonker (1996), p. 60. At the same time poverty became an important issue in contemporary academic economic discourse in the late 1840s and 1850s. See: Hasenberg Butter (1969), pp. 70–77.

agricultural prices rose, which made the development in agriculture relatively exceptional.[35] The export boom did not slow down until the 1860s, facilitating a shift in employment from agriculture to industry.

Industry was not in good shape after the Napoleonic era. Only after 1825 did industrial production begin to grow again. As real wages increased, domestic demand picked up as well. Utilities, the textile industry and machine manufacturing performed well. The pattern of industrial growth changed dramatically in the 1830s as its main driver, domestic demand, flagged (real wages no longer increased as agricultural prices and excise taxes rose). Instead, industrial growth was dominated by industries related to trade with Java ('the colonial complex').[36] The textile industry managed to adapt to the difficulties in the 1840s and shifted from producing for the domestic market to exporting to the East Indies. Shipbuilding revived under the wings of the NHM in the course of the 1830s, but efficiency was not improved in this sheltered sector. This made itself felt in the course of the 1840s, as colonial demand dropped. Under the more liberal rule, protectionism was reduced and international competition hit the colonial complex. This resulted in stagnation in the 1840s and 1850s. Industry in general developed as the mirror image of agriculture. The fundamental problem underlying this was that industries operating for the domestic market faced depressed demand due to a decline in real wages because of rising agricultural prices. Only in the 1860s did wages rise faster than inflation again.

From 1807 to 1850 the services sector showed average annual growth of 1.6 %, mainly because of international trade and transport after 1830. Domestic trade and transport grew as well, but more slowly. The growth of other services (e.g. retail services) did not keep pace with population growth. The value added of a worker in the services sector can therefore be attributed almost entirely to the expansion of capital-intensive, labour-extensive, highly productive international services.[37] This long-term growth was all the more remarkable as foreign trade stagnated from 1815 to 1830 resulting in a trade deficit. This was due to a lack of competitive export products and the protectionist climate (UK, France and the Zollverein raised high barriers). The growth resurge after 1830 had quite distinct causes.

The introduction of an exploitative agricultural system (*Cultuurstelsel*) in the East Indies in 1830 increased local production dramatically. For the best part of three decades, this system generated a large income for the State, merchants, ship owners, insurers and the textile industry and, last but not least, for the Nederlandsche Handel-Maatschappij (NHM). The NHM in 1824 received the monopoly on the trade of government-products from the Dutch East Indies to the Netherlands and of textile exports to the East Indies. But the NHM met fierce competition from British trade which proved too strong until 1830.[38] Only after

[35] Idem, 152–157.

[36] Idem, 177.

[37] Horlings (1995), p. 313.

[38] Idem, 314 and 315.

1830 did exports grow rapidly while the trade deficit shrunk. By 1840, however, growth had reached a limit. Exploitation could not be increased any further without causing a decline in production due to inefficiencies and starvation. A structural backlash was that the sheltered sectors profiting from the system became less competitive. Yet no one had any incentive to change the system. Only in the 1860s the *Cultuurstelsel* was abandoned and protectionism given up.

In summary, until 1850 the Dutch economy was a traditional economy in transition that relied heavily on agriculture and international trade and transport. Standards of living did not improve. Growth was accompanied by a more uneven distribution of income. Infrastructural constraints were severe. International trade was the main source of growth. Under such structural conditions the business cycle (if it makes sense to speak of *one* cycle) naturally had premodern drivers as well.[39] Firstly, the agricultural cycle was determined by harvests. Secondly, there was the premodern cycle determined by real wages that largely depended on food prices. Price rises led to a drop in demand which brought about a downturn. Price falls led to recovery but due to a declining trend in standards of living, every peak was lower than the previous one. Finally, colonial trade was tightly linked to the international trade cycle. If all three cycles went down at the same time, the effect was dramatic, as in 1809–1813 and from 1818 to 1824. All in all, the Dutch economy in the first half of the nineteenth century retained some of the characteristics of Holland in its Golden Age. Then, productivity growth had also been mainly concentrated in international trade and related industries.

A transition away from the traditional staple market orientation as set in during the first half of the nineteenth century could, perhaps, have been possible in the 1820s as industrialisation picked up. Yet somehow by 1830 this modernisation was halted and the colonial complex began to dominate growth. This may also have been related to the power of the Amsterdam commercial elite that for a long time was able to hold on to the traditional staple market practices and organisation. The introduction of the NHM in 1823 could be seen in that light. Characteristics of policies promoting the staple markets of Amsterdam and Rotterdam had been a reliance on military power, the blockade of Antwerp, preventing the liberalisation of shipping on the Rhine and a lack of interest in improving the domestic infrastructure. Yet all these characteristics had become things of the past by the 1840s. And so, even though these interests had been firmly entrenched for centuries, they became obsolete and did little to prop up economic welfare for the country as a whole.

Conclusion

The 1800–1860 period can be regarded as a transitional period from premodern to modern both from a political as well as from an economic perspective. Political modernisation to some extent preceded economic

(continued)

[39] Jonker (1996), p. 57 focuses on Amsterdam.

modernisation (in terms of structural change and growth). Two key political institutions emerged that would remain in place for a long time: the constitutional monarchy and the unitary state. The content of the constitution changed dramatically over this period. Economic modernisation hardly took place during this period, but the foundations for later modern growth were laid, particularly during the liberal decades. From an economic institutional perspective, however, some important steps were set during this era. The establishment of De Nederlandsche Bank was one of them.

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Chapter 4
Establishment of De Nederlandsche Bank in 1814

4.1 Introduction

On 25 March 1814 De Nederlandsche Bank was established by Royal Decree. This chapter answers the question of why De Nederlandsche Bank (DNB) was established and why in 1814. Dutch historiography on the emergence of DNB in 1814 generally regards this as a more or less inevitable and logical event, given the 'obvious' shortcomings of the financial system in the late eighteenth century. The fiscal theory points at the utter financial distress of government after the Napoleonic era. DNB is implicitly assumed to provide the logical solution for both. However, institutions do not simply emerge when needed. In order to understand the establishment of DNB, we also need to understand why it was established in 1814 and not earlier or later. This can only be explained by looking at the political context and the interplay of the different interest groups involved. By looking at that context this chapter answers the question of whether DNB was established in order to address market failure, i.e. with an economic rationale, or for political or fiscal purposes.

This chapter first analyses the proposal for a national bank and the ensuing debate. The proposal makes clear what characteristics a Dutch national bank was supposed to have. The debate is instructive when it comes to establishing the interplay of different interests and identifying the forces at work. It reveals what reasons there were for establishing a national bank and why this happened in 1814. Next, the outcome of this process, the 1814 Charter of DNB, is considered. Dutch historiography has always treated DNB and its establishment in isolation. As a result, it has remained unclear whether the Dutch case was unique or not. The uniqueness of Dutch economic history can be understood in the light of the extraordinary position and development of the Dutch Republic during its Golden Age, but how unique was the establishment of DNB? In order to find that out, the main characteristics of (the establishment of) DNB are compared with those of other national banks established in roughly the same period.

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4.2 Dutch Historiography on the Establishment of DNB

This chapter contributes to historiography in two ways. Firstly, by answering the question of why DNB was established a question on which an implicit debate has continued to date. Secondly, by examining the uniqueness of the Dutch case through a comparison with the establishment of other public banks. Dutch financial history has so far been treated in isolation. To some extent this is probably due to the exceptional pre-modern economic development in the Netherlands. But how exceptional the Dutch case was in the nineteenth century remains to be seen.

In Dutch historiography there is an implicit debate going on about whether DNB was established for fiscal reasons or to restore a failing market. The official reason for establishing DNB, 'to stimulate economic activity', provides no answer. A.M. De Jong, in his history of the Bank, proposed an economic logic that a central credit institution was needed to mitigate systemic risk.[1] Recurrent crises in the second half of the eighteenth century necessitated the creation of a lender of last resort. Loan Banks emerged in the Dutch Republic in the last quarter of the eighteenth century as an outcome of earlier ad-hoc solutions to liquidity crises. These Loan Banks had a limited, temporary objective: providing liquidity on the basis of collateral during crises, preventing the potentially deflationary sale of assets in order to obtain money. De Vries and Van der Woude (1994), in discussing the financial system, suggested that in the late eighteenth century the financial system lacked a 'central credit institution.'[2] The predecessors of DNB will be discussed when discussing the first proposal for a national bank (see next section).

There are two issues with this explanation. Firstly, it does not explain why DNB was established in 1814 and not much earlier. Secondly, it conflicts with more recent insights in the functioning of the Amsterdam money market. Jonker, in his analysis of the Amsterdam money market in the first half of the nineteenth century, adjusted the picture of a dysfunctional and unstable money market. He describes this market as relatively stable and sophisticated, distinguished by a low degree of financial intermediation and in that sense different from markets in other countries, but not in need of a national bank to fill a gap.[3] Fritschy (1988) considered the proposals for a national bank in the context of an analysis of government finances. She concluded that conservatism and an understanding that imitation of the English example would not have been easy, stood in the way of its realisation. Imitation of the Bank of England was considered impossible, because of the fundamentally

[1] De Jong I-1, Chapter 1. With more details on the financial market context see: De Jong (1934), pp. 319–334; echoed by de Vries and Van der Woude (1994) and later: Vanthoor (2004) and Wytzes (2002).

[2] De Vries and Van der Woude (1994), p. 192. Most other historiography on the establishment of DNB does not analyse this process, but only touches on the subject and builds on existing historiography. In 't Hart, Van Zanden and Jonker, 'Financial history of the Netherlands' and in Van Zanden and Van Riel, who generally take a closer look at institutional development, the establishment of DNB is left unexplored.

[3] Jonker (1996), passim.

different economic structure in England. English industry exports could help restore the trade balance, whereas the Dutch economy had few possibilities to restore the trade balance and compensate for a loss of commodity money.[4] Apart from these observations by Fritschy, Dutch historiography on the establishment of DNB has left this issue unresolved.

4.3 The Proposal of and Debate on a National Bank in the Netherlands

According to the founding documents, the reason for establishing De Nederlandsche Bank is 'to stimulate economic activity.'[5] Yet such a broad objective may include widely different pursuits. In a Keynesian perspective it can easily be interpreted as if the Bank was established to create the possibility of expansionary monetary policies. Another, more modest, interpretation could be that simply providing banking services was considered as a means to stimulate economic activity simply by lending to facilitate trade and industry. A *raison d'être* leaving room for such different interpretations does little to explain what motives and interests played a role in the process of DNB's establishment. Nor does it help to answer questions about what private interests promoted (or, for that matter, opposed) the establishment of DNB. In order to identify these interests and motives we need to gain more insight into the contemporary debate.

Unfortunately, there is not much known about what precisely was discussed in March 1814 when the King prepared his Decree. It is clear that in a very short span of time, within half a year after the French had withdrawn from the Netherlands and almost simultaneously with the adoption of the new constitution that created the Kingdom of the Netherlands, DNB was established. The King later referred to the Bank as 'our eldest daughter', his first accomplishment.[6] The reason the Bank could be established so quickly[7] was that the drafting and debating had taken place well before. Already in 1798 Gogel, then Agent of Finance for the national government, had developed a first proposal for a national bank. This proposal was to form the basis for the Charter of DNB.

[4] Fritschy (1988), pp. 226–228.

[5] Royal Decree no. 5, d.d. 25 maart 1814. In: Staatsblad no. 40 (1814).

[6] Letter King Willem I to DNB, 3-3-1824, De Jong I-2 in which the King refers to the Bank as 'eldest daughter' (see Chap. 6).

[7] It took the King just about three conferences with several experts (including the ministers of Finance and Goldberg, Hogguer and Bondt), to discuss the details of the proposal. These took place from 10 to 14 March, the Decree was published on March 25. NA, NL-HaNA, Goldberg, 2.21.006.51, inv.nr. *223c;* unfortunately the notes made by Goldberg are illegible. Zappey (1967), pp. 61 and 62.

4.3.1 Gogel's Plan for a General Batavian Lending, Discount and Deposit Bank

The Patriot revolutions of 1798 aimed at creating a unitary and centralised state under one constitution. Gogel, a convinced unitarist, became Agent of Finance, a position where he could combine his financial expertise with his idealism.[8] Ideally, his program envisaged financial centralisation and unification of the Netherlands. His constitutional task was to restructure and redesign the government's financial system and its governance on a national scale.[9] Gogel's greatest political achievement in this respect was harmonisation of the national tax system. However, he was deflected from the Patriot program by the acute need to deal with ever worsening financial conditions. Despite great effort and expertise, he worked under severe financial constraints due to circumstances of war and endless French claims.[10]

In this context, Gogel developed his ideas on a national bank and in 1798 drafted a plan for an *Algemeene Bataafsche Beleen, Discompto en Deposito Bank* or General Batavian Lending, Discount and Deposit Bank (ABB).[11] He first discussed the process and content of the proposal extensively with his Patriot colleague, Agent of Economic Affairs J. Goldberg. Both knew their way on the Amsterdam money market and were aware of the acute (financial) needs of the Government. They broadly agreed on the nature of the Bank that should be established, but they differed on what government should propose to parliament and how.[12] Gogel preferred not to enter into any complex detail to avoid discussion about particulars in parliament: presuming lack of judgment or even ignorance in the members of parliament, he did not expect a useful outcome. Goldberg, on the other hand, aiming to rally support wherever possible and to prevent or even accommodate potential opposition suggested amendments to the proposal. This is interesting for our purposes, because it sheds light on the forces at play. For instance, Gogel wanted to allow the ABB to engage in specie and bullion trade, but Goldberg advised against this, given the fact that this had always been the domain of the Amsterdam Bank of Exchange and that its restoration would require no infractions on its privilege in that trade.

In 1798 Gogel's plan for a national bank was considered to be a complement to a tax plan (a forced loan on wealthy citizens called *Anticipatie Heffing*). The idea of combining these two was not new. Since 1795 the Provincial Loan Bank (*Hollandse Beleenbank*, to be nationalised in 1798 when the unitary state was realised) was

[8] Vles (2009).

[9] Pfeil (1996), p. 243.

[10] Fritschy (1988), p. 218.

[11] The documents from which the debate was reconstructed are listed in Annex 1.

[12] Here the generic terms (1) Government and (2) Parliament are used for different bodies bearing changing names and shapes during this rather hectic time in Dutch political history, but that constitute, respectively, (1) the Governing power (e.g. Staatsbewind, Uitvoerend Bewind) and (2) the representative bodies of the legislative power (e.g. Wetgeevend Lichaam).

established to allow the wealthy to obtain the money to pay taxes without having to sell their assets, using them as collateral instead. Thus the Loan Bank prevented the fire sale of assets to obtain liquidity to pay taxes (which could trigger a deflationary spiral). Both Gogel and Goldberg considered an institution of this kind as inadequate, principally because the banknotes issued by the loan banks were not redeemable and could only be used to pay taxes or forced loans. The notes were hardly ever accepted at face value.[13] Loan Banks were not very successful because they were used only by the very wealthy and then only to a very limited extent.

The problem of 'shortage of money' was relatively new to Holland in the second half of the eighteenth century.[14] That this vulnerability emerged is made clear by a number of crises.[15] In 1763 a prominent house defaulted as a result of its heavy involvement in financing the Seven Years' War for a number of German sovereigns. An accumulation of credit (through '*wisselruiterij*', which was the name for endless renewal of bills of exchange), finally led to default.[16] This triggered a collapse of confidence which resulted in a financial deadlock where no one was willing to pay out cash if it could be avoided. The market became illiquid. A plan was developed for a fund to support credit but nothing came of it. In 1772–1773 a similar shock hit the Amsterdam money market. Contemporary reports state that 'some people drowned in money', but refused to lend.[17] Clearly, a shock of confidence made 'wealth holders sit on their vaults'.[18] The solution offered was the introduction of a lender of last resort in the form of a temporary fund 'for the maintenance of public credit.' De Vries pointed at a coordination problem that made matters worse. "During difficult situations it was expected of large houses to prolong credit, but in Amsterdam that was difficult, because of the small scale of much of its financial service providers, such as cashiers."[19] Nevertheless, despite the small scale of the market, a 'Fund to maintain public credit' of fl. 3,000,000 was

[13] Fritschy (1988), pp. 203 ff.

[14] Braudel (1987), pp. 449 ff., argued that shortage of money was a permanent problem from the Middle Ages, not only leading to innovations but also to increasing velocity of money. Innovations like improvements in coinage, and the introduction of the bill of exchange and later fiduciary money were meant to ensure a sufficient supply of money to prevent deflationary pressure. The Amsterdam money market had from the early seventeenth century developed into the centre of world trade in bullion and specie and scarcity of money had for a long time not been a problem.

[15] De Jong I-1, Chapter 1 extensively discusses these crises, but the link to the establishment of DNB remains somewhat unclear.

[16] Schnabel and Shin (2004), MIT Press, pp. 929–968 describe the crisis mechanism of fire sales of assets when there is a scramble for liquidity. Earlier studies of this first documented liquidity crisis in Amsterdam are: Sautijn Kluit (1865) and van Dillen (1922), pp. 400–408.

[17] Nieuwe Nederlandsche Jaarboeken (NNJb) 1773.

[18] NNJb (1773): "Wealth owners sat on their vaults." ["*Renteniers bleven op hun geldkisten zitten.*"].

[19] de Vries (1968), p. 76.

raised in 1773, by approximately 120 merchants who contributed between fl 10,000 and fl. 20,000.'[20] In 1780, when another confidence shock (in the aftermath of the Fourth Anglo-Dutch War) caused illiquidity, the Fund was reestablished and in 1782 was given a permanent status under the name of *Stadsbeleenkamer* (City Loan Chamber).

According to Fritschy (1988), who focused on the final decade of the eighteenth century, there were three main causes for the 'shortage of money'. Hoarding of silver and gold and defaults as a consequence of the cost of warfare were the immediate problems, as we saw above. This caused a temporary shock in the money market, while at the same time the value of collateral declined and the demand for money (to maintain sufficient margins) increased. More structurally, however, particularly after 1795, was the combination of capital export and a negative trade balance. After 1795, the scarcity of money gradually became a structural problem and turned into a permanent deflationary threat. With the collapse of the Bank of Exchange and the steady decline of Amsterdam's position in world trade, the lack of liquidity on the Amsterdam market, which was traditionally based on ample availability of bullion and specie, seems to have become a structural problem. Underlying the 'shortage of money' was a combination of a trade balance that turned negative, the cost of warfare and a net export of capital combined with an increasing tendency to hoard cash. These problems became increasingly acute in the course of the 1790s.[21]

The scarcity of money in the last quarter of the eighteenth century and the need to use available money more efficiently probably triggered innovation, such as cashiers' paper and the increasing use of bills of exchange as (near) money. Apparently, at the local level, it was also possible to organise a lender of last resort overnight (at least in 1773) and the City Council gave this function a more structural institutional form in the City Loan Chamber.

Returning to Gogel's proposal, the charter of the ABB specified all operations the Bank was allowed to perform. It was to have power to discount good bills and to lend on collateral of securities, commodities and specie.[22] The Bank would also be permitted to take deposits and perform a role as securities depositary and, finally, it would be permitted to issue banknotes. As mentioned above, Gogel and Goldberg did not agree on whether the ABB should be allowed to trade specie and bullion. In sum, it could perform virtually all commercial banking operations as by then known in the Amsterdam market.

Lending at a modest rate of interest was considered an important improvement, particularly by Goldberg. He repeatedly suggested the introduction of a maximum interest rate, as he believed this to be possible, as confidence in the banknotes would allow a degree of fiduciary issue (making money supply less dependent on coin

[20] City Archive Amsterdam (GAA), Stadsbeleeningskamer Archives (inv. nr. 5043) contains 'Administration and minutes' of the Fund.

[21] Fritschy (1988), p. 192.

[22] The activities are listed in the draft charter.

supply). Gogel and Goldberg repeatedly referred to the Bank of England and its power to issue notes exceeding the value of the bullion and specie in reserve, because of the continuous cash flow into and out of the bank, and on the strength of its credit and public spirit.[23] Gogel was well aware of the need to balance convertibility against the volume of lending. The ABB's banknotes would be better than those of the Loan Banks because the notes ('*representatief*') would be convertible at all times into specie ('*comptant*' or '*numérair*'). In order to maintain convertibility the ABB should be required to hold a minimum level of reserves, but this was not further specified.[24]

The proposal explicitly prohibited the bank from lending to any public authority. Gogel himself thought that this stipulation was unnecessary, because other requirements including a maximum term for loans (3 months) in combination with wise and prudent private management would be the best guarantee against abuse and mistakes. Nevertheless, he conceded to Goldberg's suggestion to insert a prohibition, in order to avoid potential governmental abuse and thus to prevent suspicion and distrust.

The sheer size of the proposed bank with a capital base of 5 million guilders (which could be doubled) set it apart from any existing financial institution or enterprise. Gogel argued that this was essential in order to realise economies of scale. He dismissed the argument that the same money raised as capital for the bank could also be 'mobilised' through the traditional market structure. In his view, money holders in the contemporary money market considered discounting and lending as purely an investment opportunity and would be guided by their own individual motives, which did not necessarily coincide with the public interest. But more importantly, the available money if scattered over many holders could not be invested as efficiently as it could be if managed 'centrally by a wisely directed bank'.[25] Reliance on many different agents made the money market dependent on a multitude of micro-considerations that determined the overall outcome in terms of money supply. According to Gogel, due to the diversity of motives such a system even in normal times lacked central direction and would fail to profit from economies of scale in issuing money, and lacked options for the diversification of risk. A large issuing bank would therefore benefit the entire system.[26]

[23] Goldberg: "In this *époque* the Bank of England notes have no basis, they rest on credit and public spirit." NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22*, doc. 3: Contraremarques op de reflectien van J.G. en wederbeantwoording van dezelven; ["In deze epoque circuleren de engelse bankbiljetten eigenlijk op niets, dan op dezelven krediet en de publieke geest in Engeland."].

[24] He did this on purpose: to avoid discussion on details in parliament.

[25] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22*, Doc 5: Voorstel Staatsbewind.

[26] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22;* Reflectiën van drie bijzondere personen: "the Bank is also necessary in normal times, because lending by the wealthy will never be systematic and are incomparable to the services a well-directed bank can render."

Economies of scale, opportunities to spread risk and the possibility of coordinated action through central management would make a bank of this size yield larger benefits than the existing fragmented system. The exclusiveness of the proposed Bank's charter should be understood in this light. Attracting this amount of capital would require pleasing shareholders with high dividends. According to Gogel, this would imply generating profits either through high lending rates (which ran contrary to the institution's primary objective), or from more risky business. Either option would reduce the public benefit.[27]

Furthermore, the ABB should be a privately owned and controlled corporation so as to ensure, through well understood self-interest, wise and prudent management. Gogel's draft charter and statutes provided extensive details regarding its establishment and the rights and supervisory powers of the shareholders, including detailed stipulations on the voting rights and appointment of members of the supervisory board. All this shows the clear intention to put control over the Bank in the hands of its shareholders. Moreover, the charter also provided for limited supervision by the Government which, according to Gogel, should have some assurance against abuse of the exclusive rights it granted.

Gogel and Goldberg reckoned that given the current acute financial difficulties, the public might not be able or willing to buy shares in the Bank. They clearly felt some sense of urgency, because they included a provision that allowed the Government to kick-start the initiative, by providing the capital immediately. After that, however, the Bank should be privatised without undue delay. The fact that when his proposal was rejected in late 1803, Gogel proceeded to devise a private initiative for a similar bank, may suggest that he considered his bank to be able to carve out a niche for itself without government support.[28] Nothing came of this private initiative, perhaps because Gogel moved to Paris not much later.

To be sure, the proposed bank was evidently *not* intended to serve a fiscal need. Repeated references by Gogel and Goldberg to the Bank of England as an example make that clear. They did not consider lending to the Government wise, because, in

[27] NL-HaNA, Gogel, 2.21.005.39, inv. nr. *22*, Doc 11 Rapport van den TG en Raden van Financien over de gronden van weigering van het WL. "more than one institution of this kind in competition would be disastrous for each of them. Competition would induce them to try to increase dividends, by expanding business, raising the rate of interest and taking more risk. If the idea of monopoly to be relinquished, the whole construct would have to be revised: the maximum interest rate would have to be left out and riskier lending would have to be allowed, etc."

[28] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22* (doc. 12) 'Ontwerp eener bank door particulieren op te rigten: Algemeene Beleen Discompto en Deposito faciliteit te Amsterdam.'

Goldberg's words, this would permit the Government to 'squander money'.[29] Interestingly, both Gogel and Goldberg also expressed their admiration of the Bank of England for its fiduciary notes issue. They were impressed by the fact that the Suspension of convertibility in 1797 had not hampered the circulation of banknotes, but they felt this would not be possible in the Amsterdam money market.

It is not entirely clear why nothing came of the plan in 1798, but there were many plans during these revolutionary years that did not come to fruition. The national bank proposal is just one of the issues that the regime of 1798 intended but failed to tackle.[30] This probably had to do with the dramatic financial circumstances that frustrated most of the regime's initiatives. When in September 1801 the revolutionary Government in which Gogel served, was overthrown and a more reactionary regime took its place, Gogel withdrew from politics and moved back to Amsterdam, where he took up his business again.[31] When the proposal resurfaced again, it first circulated for months in the Ministry of Finance and in wider government circles until it generated sufficient support to be officially (and in full detail) proposed to Parliament in May 1802.[32] Within weeks after its publication, opposition came in from Rotterdam. The Parliamentary committee to which the proposal had been submitted, commented on it in July of the following year.[33]

4.3.2 Opposition to the National Bank

The forces opposing the establishment of the Bank prevailed in 1802–1803. In order to explain the opposition to the Bank, this section outlines the arguments raised against Gogel's plan. These arguments broadly fall into five categories: (1) opposition to centralisation and monopolisation, (2) opposition from vested interests of incumbents, (3) opposition to government involvement, (4) concerns stemming from recent experience and (5) minor technical objections.

The most articulate and immediate resistance to the proposal came from Rotterdam, and targeted the bank's monopoly and centralisation in Amsterdam. The general usefulness of the proposed bank was not disputed, but in their petitions, the Chamber of Commerce of Rotterdam and the City of Rotterdam argued that it would be undesirable to establish such a national institution in Amsterdam alone and proposed to NOT call it *Algemeene Bataafsche Bank* ('General Batavian

[29] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22*, doc. 2 reflectiën en remarques van Jan Goldberg.

[30] Pfeil (1996), pp. 240ff.

[31] van Leeuwen-Canneman (2009), p. xxxvi.

[32] van Leeuwen-Canneman (2009), Proposal ABB, d.d. 21-5-1802 met missive op 25 mei 1802 van Staatsbewind aan Wetgevend Lichaam.

[33] Letter from Communality of Rotterdam, 14-6-1802; 'Memorie van bezwaren van comité van koophandel Rotterdam' (d.d. 10-6-1802) and 'Rapport van de Commissie van het Wetgevend Lichaam' d.d. 29-7-1803; leading up to the decision to decline: [Declinatoir besluit d.d. 2-8-1803]; Decision 44, Staatsbewind (d.d. 15-8-1803).

Bank'). The objectors had a point: a Bank that was so far away and difficult to communicate with would be unable to facilitate trade in Rotterdam effectively and efficiently. Furthermore, Rotterdam also feared that all residents might suffer should the Bank's reputation go down—loss of credit by the General Bataafsche Bank would affect the reputation of the whole nation.

These local objections were precisely the sort of federalist arguments that Gogel opposed. He insisted that the ABB should be established in Amsterdam, where it would strengthen Amsterdam's competitive position internationally, to 'the benefit of the whole country'. He regarded Amsterdam from a national perspective, as the international competitor rather than a competitor to other Dutch cities. But Gogel did appreciate the practical concern that the Bank's services would not be immediately available outside Amsterdam and suggested that once the Bank was established a committee would study ways to resolve this issue.

Political objections against the monopoly of the ABB or its exclusive rights should also be understood in this perspective. All critics of the proposal agreed that a national bank would benefit the welfare of the country. Gogel's arguments for a monopoly as regards economies of scale or negative effects of competition were never rebutted. The monopoly and exclusive rights were rejected only by federalists opposed to centralisation of this potentially influential institution in Amsterdam.

Secondly, incumbents and their proponents, specifically the Bank of Exchange and the cashiers, resisted the entry of a new competitor with far-reaching privileges. Naturally, Gogel was well aware of this. His proposal to establish a large issuing bank was a deliberate attempt at restructuring the money market and to curb the power of incumbents. However, with regard to the Bank of Exchange Gogel, on the suggestion of Goldberg, avoided a head-on attack for at least two reasons. Firstly, because he was well aware that the Bank of Exchange made for approximately 8 million guilders in circulation (estimated at fl 80–100 million),[34] which because of already pressing 'shortage' of money could not be missed. Secondly, the coalition in support of the Bank of Exchange in Amsterdam was considered to be so powerful that he even considered leaving the possibility of trade in bullion and specie out of the charter.[35] For many contemporaries the desirability of the restoration of the Amsterdam Bank of Exchange was not a matter of discussion. With hindsight it is hard to imagine that contemporaries believed it would be possible to restore Amsterdam as the centre of world bullion trade by reviving the Bank of Exchange. But the desirability of this, combined with the fact that building on the existing structure and practices would entail the lowest level of transition costs, made its case compelling. Who could know beforehand that these attempts were in vain?

[34] Fritschy (1988), p. 192.

[35] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22*, doc. 2 reflectiën en remarques van Jan Goldberg: "there are people that want the Bank of Exchange to do this, and those people may be able to rally a lot of opposition."

Other incumbents that would be hit directly by the establishment of the ABB were the cashiers who provided payment services and issued receipts that were used as means of payment. Although these notes were used only in Amsterdam, Gogel estimated their circulation to be millions of guilders structurally.[36] The cashiers' resistance concerned not so much the introduction of paper money in itself, but the introduction of a large government-sponsored competitor. There had been government-sponsored banks in the Republic. The Amsterdam Bank of Exchange had never issued paper money. However, since it had become clear in 1795 that its reserves were inadequate, it had lost public confidence. Notes issued by the Loan Banks had depreciated and circulated at a discount.[37] Interestingly enough, the opposition seldom referred to foreign experiments with issuing banks. Gogel, however, cited the examples of Denmark, France and the United States to show that his proposal avoided their mistakes. Mandatory convertibility at all times and prudent and wise management guided by private interest, Gogel thought, would tackle the problem of overissue and the feared instability of the currency issued. He also rejected the fear for the Bank's credit abroad on the basis of these two main precautions. But the opposition remained unconvinced.

Added to the opposition from vested interests, there were concerns about lending to the Government, particularly in view of its influence on the Bank. Gogel held the view that in principle, the Government could borrow from the Bank like any other, on the same terms and conditions. Wise management would put constraints on its operations, whether with government or with other parties. The trauma of the Bank of Exchange's collapse was fresh in memory, and Goldberg therefore suggested including an explicit prohibition on lending to the Government in the Bank's charter. But would that be sufficient? Even in normal times the Government has a hard time to guarantee time consistency of policies, let alone in these revolutionary years. Apart from this insoluble problem, the charter itself gave the Government the right to appoint the Bank's President, in order to kick-start the bank. Furthermore, the Government could also lend money to the Bank to get it started. Finally, the Government could audit the books of the Bank. All of this did not create confidence in its independence.

Finally, there were objections and concerns relating to various technical issues: there was some debate on the level of reserves that the Bank should hold, the denomination of the banknotes, whether there should be an obligation for government to accept the banknotes in the payment of taxes, whether the introduction of a possibility to expand the capital of the bank would not deter investors, and whether the voting rights were distributed adequately. But these issues of course were of little importance compared to the matters of principle and powerful vested interests at stake.

[36] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22*, doc 11. Report on the grounds for refusal by the parliament. [Rapport van den TG en Raden van Financien over de gronden van weigering van het WL.]

[37] Fritschy (1986), p. 131.

All in all, the resistance to the Gogel plan stemmed from federalism, incumbent resistance and distrust of government. The combination of these elements was powerful enough in the face of a weak government distracted by matters of sheer survival. And after the more anti-revolutionary turn of events in September 1801, these tendencies became impossible to overcome.

After the rejection by Parliament in 1803, Gogel still elaborately commented on the reasons for rejection.[38] But it was to no avail, because the proposal was withdrawn by government. Gogel then redrafted his plan for a private bank without government involvement.[39] Although a first draft for statutes was made, this initiative led to nothing.

4.4 The DNB Charter

The Gogel proposal resurfaced in 1814. It is very likely the King wanted to establish a national bank, but it is unclear how and when. De Jong refers to a letter by J. Bondt[40] during the winter of 1813–1814[41] in which he expressed his concern about the monetary situation. He feared that in spring, when trade picked up, there would be 'shortage of money'. Without going into much detail, he suggested establishing a loan bank to provide money for that situation. The letter was probably sent to the Ministry of Finance, as it was found in the archive of Canneman, the Agent of Finance at the time. Canneman was in close contact with Gogel, who returned from France to the Netherlands only in May 1814,[42] and perhaps Canneman suggested establishing a bank to the King. All this, however, is speculative. What we do know is that in March 1814 several meetings took place in which a redraft by Goldberg of Gogel's original project was discussed.[43] The King held a long meeting with Goldberg and, 2 days later, he had a meeting with Hogguer and Bondt. We do not know what was discussed, but we do know the outcome.

[38] At the request of the Ministry of Finance in the autumn of 1803. Gogel resented the opponents' lack of good judgment and of understanding. He particularly resented the anti-centralist, federalist tendencies.

[39] NL-HaNA, Gogel, 2.21.005.39, inv.nr. *22* (document 12) 'Ontwerp eener bank door particulieren op te rigten: Algemeene Beleen Discompto en Deposito faciliteit te Amsterdam.'

[40] Jan Bondt was partner in the Associatie-Cassa and active lawyer in the Amsterdam money market. After its establishment, he became legal counsel of DNB.

[41] De Jong I-2, doc. 2 'Brief Jan Bondt, winter 1813.'

[42] van Leeuwen-Canneman (2009), p. xl.

[43] Nationaal Archief, Den Haag, Collectie Goldberg, 1578–1830, nr. 2.21.006.51, inventarisnummer 223c Notes of the conference with the H.M the King, Canneman and Six.

Goldberg made some minor changes to the original plan. More important changes were made by the King before the Charter was published in the *Staatsblad*, with several remarkable differences.[44] Generally speaking, the main elements of Gogel's proposals can be found in DNB's Charter, although *mutatis mutandis*: 'Staatsbewind' (Government), for instance, was replaced by 'We' (*pluralis majestatis*). The structure of the Charter was cleared up through a division into four parts: (1) Entry into effect and renewal of the Charter, (2) Operations, (3) Governance and (4) Other privileges and advantages. In Gogel's draft, several elements from these different parts had been mixed. Some technical details of the original project on how to conduct business were absent from the Charter. These were left for the Rules of Procedure to be drafted later by the Governing Board of DNB. The Rules of Procedure would still require the Government's approval.

Several important changes between Gogel's draft and the final Charter must be noted. Firstly, Gogel's proposal had limited the number of shares that one shareholder could hold to 200. This reflected a fear for concentration of control over the institution, which was particularly important considering the size of the Bank. This limit was removed.[45] More importantly, the Charter stated that the Government participated in the Bank for fl 500,000 (10 % of the total capital) and that this share could be doubled. This participation aimed to 'instill confidence' in the Bank.[46] Secondly, in Gogel's plan the Board of the Bank could ask the Government for permission to double its capital. This was maintained but the Charter also permitted the capital base of the Bank to be expanded on the initiative of the King.[47] Thirdly, Gogel's plan had allowed the Bank to offer current account facilities, without limit. The DNB Charter limited the current account business to public authorities.[48] Fourthly, the Charter maintained the prohibition for the Bank to engage in trading activities (apart from the specie and bullion trade and the sale of collateral of non-performing loans), but it explicitly mentioned that this was because of the size of the Bank that entailed the risk of monopolisation and the cornering of markets. It was feared that an institution with such a large capital base, might be able to influence prices.[49] Fifthly, the monopoly on the issue of banknotes was dropped in the Charter. Issuing banknotes was not even mentioned as one of the Bank's operations. Banknotes were mentioned in the way the Bank would be allowed to make payments: in specie or in banknotes. The Charter also defined denominations for the banknotes (fl 1,000, 500, 300, 200, 100, 50 and 20).[50] In

[44] The Gogel draft and Goldberg's revision are published in De Jong I-2, documents 1 and 3. The Royal Decree with the Charter was published in Staatsblad no. 40, 1814. Below we refer to the three documents respectively as 'Gogel' or 'Charter'.

[45] Compare Gogel art. 3 with Charter art. 8.

[46] Charter art. 8.

[47] Compare Gogel art. 7 with Charter art. 12 and 13.

[48] Compare Gogel art. 11 with Charter art. 20.

[49] Charter art. 21.

[50] Compare Gogel art. 6 and 22 with Charter artt. 29 and 30.

practice, however, a monopoly could result from the privilege of exemption from the stamp tax on DNB banknotes which could give these banknotes an important competitive advantage.[51] Sixthly, the ban on lending to public authorities was dropped in the Charter.[52] Seventhly, the King appointed the President and the Secretary directly. The other members of the Governing Board (the directors) were appointed by the King as well, but he had to choose one from a pair of candidates. These pairs had been determined beforehand by the main shareholders.[53] Finally, shareholder control was reduced in the Charter through the introduction of a tiered system of main shareholders and a Supervisory Board of six members. Under the Gogel proposal, shareholders had much more direct influence through an annual meeting (of all shareholders), while the Supervisory Board (elected by all) would meet four times a year.[54]

These eight differences between the Gogel proposal and the Charter show three important changes. The Charter:

(a) addressed resistance against a large bank,
(b) gave more influence to the King and
(c) afforded DNB wider permission to service the Government.

King Willem I was able to establish the Bank because of his autocratic powers, he did not require legislation, but could decree it, by means of a 'Royal Decree' (*Koninklijk Besluit*). The unitary state prevailed over particularist and federalist tendencies. Yet earlier opponents to the Gogel project were not entirely ignored. Resistance had also focused on the monopoly and competitive power of the new large Bank. Some of these concerns had been explicitly addressed in the Charter. The cashiers' fear of competition had been addressed by restricting current accounts to public authorities. The explicit ban on trading activities with specific reference to the risk of monopolisation and market cornering, and the fact that no mention was made of a monopoly on banknote issuance can also be seen in this light.

The Charter clearly gave more influence over the Bank to the King. Firstly, as a shareholder, secondly in the King's power to initiate an expansion of the Bank's capital base, and thirdly, and perhaps most importantly, by giving the King the right to appoint the Governing Board. Finally, the reduced influence of shareholders shifted power towards the Governing Board.

The Charter also allowed the Bank to provide a wider range of services to the Government. Most importantly, the ban on lending to public authorities had gone. The Bank also became the government's cashier through the current account business for the State and public authorities.

[51] Charter art. 60.

[52] Gogel art. 21.

[53] Compare Gogel art. 47 and 48 with Charter art. 51.

[54] Compare Gogel artt. 33–35, 38, 40 and 41 with Charter artt. 53–56.

Apparently, the King was in a hurry to establish DNB. He did not take time to draft a bank that fit his fiscal intentions well. That would have required inventing a new institution from scratch, but he did not take time needed for that. Instead, he took the Gogel plan and made some adjustments, so as to minimise resistance. The more important changes lead to the conclusion that the King most likely had fiscal reasons for establishing DNB. As we saw in Chap. 3, one of the main constraints under which the King had to operate was financial. In that light, it is hardly surprising that the King wanted control over the institution and wanted it to be able to finance government spending. The Bank's possibilities for doing so should not be exaggerated, however. It was not even close to the fiscal potential of the Bank of England in managing government debt. Moreover, DNB's activities were confined to short-term lending.

4.5 International Comparative Perspective

In order assess whether the establishment of DNB was unique, we look at its timing (1814) and motivation. Table 4.1 provides an overview of contemporary government-sponsored or chartered national banks around the time DNB was established. Two remarks have to be made. In the first place, there was no accepted concept of a central bank in the nineteenth century. According to Grossman (2010) 'in most cases, the government banks that would evolve into central banks were merely the first government-chartered banking institutions in the country.'[55] In the second place, the table does not claim to be complete and contains a somewhat arbitrary selection. For example, Spain and Scotland are left out, although there had been public issuing banks there since the eighteenth century.[56] Still, the comparison on the basis of Table 4.1 (inserted at the end of this chapter) gives rise to some interesting observations, because it allows us to compare the peers of DNB, the central banks that were established or existed at roughly the same time as DNB.

DNB clearly was not the first government-sponsored bank. The Swedish and English public banks had been established long before, making them relatively exceptional in the sense that they still exist as modern central banks.[57] DNB was established amid a 'wave' of other new public banks (that later became central banks) during the first two decades of the nineteenth century: France (1800),

[55] Grossman (2010), p. 43.

[56] Historiography of central banking has a bias towards institutions that survived into the twentieth century, if only because surviving institutions ordered their own history to be written. Therefore, it is hard to collect sufficient information to include institutions that did not become modern central banks. Data collection to make the overview comprehensive in order to make useful comparison requires careful case study work in a common conceptual framework. Ideally, this would be a collaborative effort.

[57] 'It is important to note that 'the Bank of England of 1694 ... is a far cry from the Bank of England in 1913." Giannini (2011), p. xxv.

Table 4.1 Comparison of contemporary national banks in Europe, 1800–1818

Country	Bank	Estab.	Predecessor?	Official motive for establishment	Private or public	Competition in note issue	Convertibility problems?	Monopoly debate?	Last resort lending?
Sweden	Riksens Ständers Bank/ Sveriges Riksbank	1668	Stockholms Banco/ Palmstruch's Bank (1656)	Overissue of notes by predecessor led to closure and replacement by government bank. Not a fiscal agent; after 1834 to maintain domestic currency and exchange rate, Capie et al. (1994), p. 123.	Public	Yes	Eighteenth century	1897	1857
UK	Bank of England	1694	–	Fund the national debt, Capie et al. (1994), p. 126	Private	Until 1844	1797–1821	1844	1870
Prussia	Königliche Preussische Bank	1846	Royal Giro and Loan Bank (1765)	Meet increasing demand for bank notes. Maximum rate, Capie et al. (1994), p. 155.	Public	Regional banks			1857
France	Banque de France	1800	Caisse	Manage public debt; ease discounting of government paper, Capie et al. (1994), p. 132; Grossman (2010), p. 44.	Private	1803: Paris; Until 1848	1805 and 1813; 1848–1850; 1870-	1848	1880
Finland	Suomen Pankki	1811	–	Clear up monetary disarray Grossman (2010): 1. Facilitate payments to settle debts in Sweden (forced by separation). 2. Remove Swedish paper from circulation and substitute it by the rouble. Capie et al. (1994), p. 136.	Public			1886	1890

Netherlands	DNB	1814	–	'Stimulate trade' (Charter)	Private	Until 1840 by cashiers	No	1863	1857 (no max rate)
Norway	Norges Bank	1816	–	Independence from Denmark and monetary confusion issue convertible money Capie et al. (1994), p. 146. Grossman (2010), p. 44.	Private			1818	1890
Austria	Österreichische Nationalbank	1818	–	Government bank had overissued, independent bank needed. Capie et al. (1994), p. 143; Grossman (2010), p. 44.	Private		1848–1858; 1859–1866	1816	1870
Denmark	Danish National Bank	1818	Kurantbank; Speciesbank	Following state default/ clean-up of monetary disarray Grossman (2010), p. 44; Capie et al. (1994), p. 149.	Private	No; bank only	1757; 1791; Convertibility restored in 1845	1818	1880

Sources: Capie et al. (1994); Grossman (2010); Lindgren and Sjögren, (undated); Ziegler (1993); Timberlake (1978)

Finland (1811), the Netherlands (1814), Norway (1816), Austria (1816), and Denmark (1818). Evidently, this is usually related to the emergence of unitary centralised nation-states. Not that the establishment of a public bank should be seen as part of the build-up of a state apparatus, because they often were private organisations.[58] But it certainly was a sign that the governing power at the national level had become powerful enough to make such a move (despite possible opposition).[59] Most of the countries mentioned had suffered the consequences of the Napoleonic wars. Indebtedness of states due to wartime expenditure had risen to unprecedented levels and in several countries had become unsustainable. (The case of the United States was a possible exception considering that the Charter of the First Bank of the United States was *not* renewed in 1811.) Governments faced with high debts looked for ways to finance expenditure and public banks, following the English example, were regarded as at least a partial solution.

A second reason is also mentioned: 'Clearing up monetary disarray' in Grossman's (2010) words, was the reason for establishing a public bank at least in Denmark and Norway.[60] It is not immediately clear what it means to 'clear up the monetary disarray'. In Denmark and Norway, after previous experiences with overissue of paper money, the new banks were established to underpin confidence.[61] In Finland the bank was intended to reorganise circulation following the transition from Swedish to Russian rule.[62] Clearing up monetary disarray thus could mean two things: restoring confidence by introducing a new institution or improving the quality of the money in circulation by launching certain operations. The national bank, if managed well, could therefore serve a fiscal purpose or improve the efficiency or stability of the payment system, or both.[63] It depended on the relationship to the government and on the market conditions in which the national bank had to operate how things worked out in practice.

[58] Notable exceptions are the United States, which had a federal character, and France and Denmark, which had long been unitary states. The French and Danish banks established in the nineteenth century had eighteenth century predecessors, which in this light is perhaps not surprising.

[59] Clearly with the Amsterdam Bank of Exchange the phenomenon of the public bank to manage money (payment system motivation) had been accepted in the Netherlands and had occurred, but not at the national level.

[60] Grossman (2010), p. 44 distinguishes a third: facilitating trade by extending banking services, referring to the Netherlands. Indeed, the Charter of DNB mentioned 'facilitating trade' as an objective. But as shown above, the King's primary objective with DNB was fiscal.

[61] The Danish National Bank was founded in order to restore monetary stability after the 'state bankruptcy' and inflation which ensued from excessive government spending during the Napoleonic Wars. Stabilisation of the monetary system was the main priority of the National Bank, whose task it was to bring the value of banknotes up to par so as to restore redeemability into silver. This took until 1845 (Capie et al. 1994, p. 149).

[62] Suomen Pankki (the Bank of Finland) has as its major initial aim to drive Swedish money out of circulation replacing it with rouble notes. This was achieved in the 1840s (Capie et al. 1994, p. 136).

[63] Grossman (2010), p. 41.

If we place the establishment of DNB in this perspective, both elements are visible. On the one hand, the King's amendments show that most likely there were fiscal motives at play. On the other hand, DNB was mainly intended to provide a public good, in the payment system. Combining these two objectives, the DNB Charter might be interpreted as a joint product of the King's powerful private interest in creating possibilities to finance his ambitious program, and the wish to further the public good. This is why the basic structure of the Bank followed the design of Gogel's 'lender of last resort' bank. At the same time, this can also be seen as directed at correcting shortcomings of the payment system. These were different short-comings, however, than those that the newly established banks in Denmark and Finland were supposed to address. In Denmark the new institution had to restore confidence after overissue. In Finland problems with currency in circulation were the main reason. The fiscal motive does not make DNB unique in an international comparative perspective. The payment system function, namely to prevent deflation, was comparatively unique.

Conclusion

This chapter addresses the question of why DNB was established in 1814 in an international comparative perspective. This question had two dimensions. On the one hand we want to understand what motivated the Bank's establishment and on the other, we want to explain the timing of the establishment. Based on theory and international comparison we identified two different reasons for establishing a national bank. The fiscal theory regards the introduction of a national bank as a means to help government obtain cheap finance. The Bank of England and the Banque de France are examples of this. The Bank of England was originally established to fund the government's debt. But by the end of the eighteenth century the bank had also developed a willingness to discount Exchequer Bills at a moderate rate of discount.[64]

The other reason, relating to the payment system, concerns the way a national bank aimed to solve problems in the payment system by introducing banknotes as a means of payment to facilitate trade. In Finland this was clearly the objective, with the aim to replace Swedish currency. In Denmark and Austria inflated currency (overissued paper money) was replaced by banknotes issued by a new bank. The Charter of DNB states that DNB was established to 'facilitate and stimulate trade,' but that does not answer our question. Not just because the officially stated reason may not be the real reason, but also because it is not clear what it really meant.

(continued)

[64] Fritschy (1988), p. 197; Dickson (1967) argued that the Bank of England was established to overcome the difficult relationship between 'financial cliques' and the Government. In the Dutch Republic this relationship had been much less problematic.

In order to identify the motives for DNB's establishment we looked into the background of the proposals for a national bank. Gogel's proposal for a bank targeted the payment system. He noticed the problem of money shortage in the Amsterdam money market and wanted to establish an issuing bank that could provide liquidity as a last resort. For such an institution to be successful, it had to be sufficiently capitalised, independent from government and well managed. This plan was never realised due to effective opposition against centralisation (in Amsterdam), against monopolisation (of a large issuing bank) and against competition to incumbents.

In 1814 the Bank could be established because the unitary state and its governing power were sufficiently established. The King used Gogel's design but made some crucial changes to it. The changes reveal his intention to use the new bank for fiscal purposes, which given the financial situation of the country is not surprising. At the same time, changes to the original Gogel plan helped to accommodate some of the opposition as well, in line with Broz's joint production theory (see Chap. 2).

All in all, the large private issuing bank that was established for fiscal purposes in the second decade of the nineteenth century was not unique in an international comparative perspective. However, the fiscal facility that the Bank would be able to provide was limited, certainly compared to that of the Bank of England. DNB would be able to lend to the Government against good collateral, but it did not manage the national debt. The core functionality of DNB was that it could act as a 'lender of last resort', issuing money to solve the problem of money shortage. This made DNB relatively unique internationally. This uniqueness is explained by the relative speed with which the Bank was established; within weeks the Gogel draft was transformed into a Royal Decree. Perhaps the King thought he needed the institution first and could later make it work for his purposes. But due to the hasty adoption of the plan, the structure of Gogel's original design of a private issuing bank that could act as lender of last resort remained largely intact. In practice, the governance of the Bank, the relationship with the Government and the market conditions would determine in what direction the new Bank would develop.

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Chapter 5
Corporate Governance of DNB

5.1 Introduction

In the previous chapter it was shown that Gogel proposed a private note-issuing bank with a large capital base, which King Willem I established in 1814. From the perspective of the evolution of central banking, it is now relevant to consider how this private institution could pursue a public good objective and assume responsibilities that could go beyond what would be in the best interest of its owners, the shareholders.[1] This chapter's main questions are therefore: who controlled the Bank and how did that affect the development of its central banking functions.

Below, the formal arrangements between shareholders and management[2] are analysed first by looking at the official documents (Charter, Bank Act and Statutes) until 1864.[3] Next, the relationship between the Bank's management and shareholders is assessed during the first 50 years of its existence in order to see how the formal arrangements worked out in practice. This analysis results in the conclusion

[1] Interestingly, De Jong does not address this, neither in 'De Geschiedenis' nor in his legal analysis de Jong (1967). This work covers more than a century, and analyses the legal context of DNB until the Bank Act of 1948. By that Act DNB was nationalised, received its macroeconomic mission and became officially a modern central bank. The history of legislation by De Jong is largely teleological in that it sketches the development of DNB as a nearly linear progress towards the Bank Act of 1948. Needless to say, this picture is distorted by De Jong's implicit assumption of inevitability of this outcome. This colours his discussion of the early Charters which he regards as 'remarkably well-developed', apparently regarding them as surprisingly early expressions of modern (twentieth century) conceptions of how the Bank should be regulated.

[2] In the rest of this chapter the English terms 'Governing Board' and 'Supervisory Board' are used for what at DNB were respectively, the directie (consisting of directeuren and President) and the raad van commissarissen (consisting of commissarissen).

[3] The Bank Act of 1889, more than that of 1864, marked a new era in which the modernisation of the Bank took shape. Although, obviously, this is a highly interesting development in itself, it is beyond the scope of this project that aims to identify the emergence of central banking before the modernisation of that role.

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that the management was largely autonomous from shareholder influence well until 1864. DNB's management[4] was from the start recruited from among the Amsterdam elite. This may explain its traditional and conservative attitude.

5.2 Formal Arrangements 1814–1864

The original design of the bank laid down in the Charter of 1814 was that of a joint-stock company. To be precise, according to the Code de Commerce of 1811, the Bank is a '*compagnieschap zonder firma*.'[5,6] The Bank was owned by shareholders, who could relatively easily transfer their shares, and the liability of shareholders was limited.[7] This legal structure was the vehicle to allow the enterprise to generate a large capital base.[8] Establishment of this kind of enterprise was subject to approval of the Government. In this structure, ownership was separated from management, which introduced a classical principal-agent problem. Thus the Bank was established at the Government's initiative and the constitution of its Board was largely determined by the Government. Given this construct, it is clear that there are three main groups of stakeholders: (1) shareholders, (2) management of the Bank and (3) the Government.[9] How these stakeholders influenced the development of DNB's public responsibility is analysed first by looking at the governance of the Bank: did shareholders control management of the Bank?

The first Charter provided the basis for the internal arrangements between shareholders and management. Firstly, we discuss the provisions concerning shareholders and management in the 1814 Charter. Later Charters and Bank Acts took shape mainly as alterations to this Charter. The Charter determined that the initial capital base of the Bank should be fl 5 million.[10] As soon as 2000 shares had been placed, the largest 18 shareholders were to appoint by lot 6 persons from their midst to form the Supervisory Board during the first book year.[11] In meetings with the management the shareholders would be represented by those 50 of them holding the

[4] The term management is used below synonymously with the Governing Board.

[5] Charter 1814, art. 4.

[6] This was the legal construct that later was codified as the organisation of the Naamloze Vennootschap, the construct under Dutch law of a joint-stock company. Van der Heijden (1908).

[7] Charter 1814, art. 5.

[8] Jonker (1996), pp. 61 and 62.

[9] Of course, there are other stakeholders, such as clients and employees, which are disregarded here because in terms of formal and official power structures they are hard to identify as an agent in the context of this chapter. This does not mean that they are irrelevant: clients obviously impact the business of the Bank tremendously as their behaviour largely determines the institution's creditworthiness and reputation while, for instance, fraudulent behaviour of employees may ruin any bank.

[10] Charter 1814, art. 7.

[11] Id. art. 50.

most shares,[12] referred to as the principal shareholders (‘*hoofdparticipanten*.’) At the end of the first year, the principal shareholders elected from their midst by majority vote six officers to sit on the Supervisory Board. Only principal shareholders could elect the members of the Supervisory Board. The instruments of control for this Board were limited. Because the Bank was obliged to maintain total secrecy,[13] other shareholders than the 50 principal shareholders and members of the Supervisory Board had only one source of information, namely the amount of the yearly dividend as an indication of profitability. This only changed in 1852, when the Bank started to publish a monthly balance sheet.

In order to be eligible for the Supervisory Board a candidate had to hold at least six shares for at least 6 months. Every year, two members of the Supervisory Board had to step down, but they could be re-elected immediately.[14] The supervision by the ‘*commissarissen*’ required them at least formally to examine the books at the end of the book year, to acknowledge the oath from the cashier and bookkeepers on the correctness and completeness of the books, to discharge the Board by approving the books and, finally, to determine the dividend based on the recommendation of the Governing Board. Supervisory Board meetings could be organised by the President on his own initiative or in response to a request to do so by at least five members of the Supervisory Board.[15] The Supervisory Board was obliged to meet when incidents of discontinuation of business or enlargement of the capital base occurred.[16]

The Governing Board consisted of five directors and the President.[17] In order to be eligible for Governing Board membership a candidate had to hold at least ten shares.[18] The King appointed the President and the Secretary of the Bank. Initially, the King also appointed two Governing Board members (directors).[19] Once established, the Supervisory Board met with the President and two sitting directors in order to nominate six eligible shareholders, in three pairs, for Governing Board membership. The King appointed the three directors, one from each pair of nominees.[20] The President was appointed for an indefinite term in office. Every 6 months, a director had to step down (selected first by lot and later by seniority). Board members could be re-elected immediately.[21] Meetings of the Governing Board

[12] In order to be able to establish who held the most shares, registration of shares and transfer of ownership was possible, but regulated and administrated carefully. (Art. 10–11). Every year prior to the shareholders’ meeting, a list was made up of all shareholders holding more than six shares.

[13] Charter 1814, Art. 58.

[14] Id. Art. 53. For the first 2 years of the Bank this was decided by lot, but after that by seniority.

[15] Id. Art. 45.

[16] Id. Art. 12.

[17] Id. Art. 37.

[18] Id. Art. 47.

[19] Id. Art. 49.

[20] Id. Art. 51.

[21] Id. Art. 48.

were called by the President, on his own initiative, or following the request of at least three directors.[22] Voting in the Governing Board was based on one-man-one-vote and majority voting. In the case of a tie, the President held the casting vote.[23]

From the very start there was some degree of alignment of incentives between the Bank's management and its shareholders in terms of remuneration. This was left open in the Charter, but according to Article 40 had to be arranged separately by the Government. The Management was entitled to 10 % of annual gross profits. In 1817 the Board proposed to reduce this to 7 % according to the following division[24]: President 1.5 %, each director 0.75 %, the Legal Counsel 0.25 % and the Secretary to the Board 1.5 % (with a guaranteed minimum of fl 4,000).[25] Clearly this gave the Board an incentive to maximise profits because their income was a share of gross profits. In 1844 the total remuneration of the Governing Board was maximised at an absolute level of fl 1,000,000. The minimum guaranteed salary for the Secretary was raised to fl 6,000. From 1864 onwards the Governing Board received a fixed annual salary.[26]

The Bank itself developed rules of procedure ('*huishoudelijk reglement*') stipulating that the President and directors met every day at the Bank to conduct its daily management.[27] The directors took turns in a weekly schedule to ensure that one of them would be present at the Bank to join the President every day (mornings from 10 o'clock until noon). Apart from this, the Governing Board only met when the President called a meeting. In practice, this meant that the President and one director were at the Bank every working day. The Governing Board had to examine the Secretary's administration at least six times a year. This meant checking the records of the banknote circulation and checking whether the actual reserves in depot matched with what was recorded. The Secretary, as the head of staff, was permanently present at the Bank, indeed he was required to live on the Bank's premises. His responsibilities ranged from acting as Secretary to the Governing and Supervisory Boards and at shareholder meetings, to keeping record of all correspondence, transactions and deposits. He supervised all buildings and staff and kept

[22] Art. 44 and 45.

[23] Art. 46. In the rules of procedure (RoP) a further specification was made that in cases of decisions on lending, the failure to reach a majority decision meant rejection of the request, showing that the Bank itself went further than the Government to safeguard prudent credit policy.

[24] Nationaal Archief, Den Haag, Ministerie van Financiën: Dossierarchief, 1831–1940, nummer toegang 2.08.41, inventarisnummer 830: Beloning directie/28-3-1817. The Board mentioned it was not obliged to propose this amendment, but it did so in order to introduce a remuneration for the Legal Counsel, and because business had increased they considered their remuneration despite this reduction still 'considerable' (waarmee 'het honorarium . . .nog aanzienlijk blijft').

[25] In 1844 the total remuneration of the Governing Board was maximised to fl 1,000,000 and its division between Board members was confirmed. The minimum guaranteed remuneration for the Secretary was raised to fl 6,000. Only in 1864 was this changed to a fixed pay (President fl 12,000, the Secretary fl 10,000 and each Board member fl 7,000).

[26] President fl 12,000, the Secretary fl 10,000 and each Board member fl 7,000.

[27] NL-HaNA, Financiën, archive nr. 2.08.41, inv. nr. 828: Rules of Procedure [Huishoudelijk reglement voor de directie der Nederlandsche Bank].

the registers of bank notes. The Secretary was to safeguard full and correct compliance with the Charter and Rules of Procedure. Finally, the Secretary also kept one of the three keys to the vaults. The other two were held by the acting director and the cashier general.

The initial arrangements between shareholders and management were left unaltered when the Charter was prolonged in 1839. An important change for the management in 1839 was that the term for directors was doubled from two-and-a-half to five years. At the same time, the President was no longer appointed for an indefinite period of time. Further changes in the formal relationship between management and shareholders were made under the Bank Act and Statutes of 1864. The joint stock status was then modernised to that of a *naamloze vennootschap*.[28] Detailed rules (e.g. regarding capital base, term in office for Supervisory Board members, voting rights etc.) that had been in the Charter were moved not to the Act but to the Statute (*Statuten*) which the Bank itself could adopt and change.[29] This was done in order to ensure the private nature of the Bank, and in order to avoid discussion about technical details in Parliament. Nevertheless, the Statute had to be approved by the Minister of Finance and was published together with the Bank Act.

The Statute contained the concept of 'voting shareholder'. This was not a novel concept as the VOC and WIC had also known 'voting shareholders.' Every Dutch citizen holding at least five shares for at least half a year was given a vote in the Bank.[30] Supervisory Board members were appointed by shareholders for a 5 year term.[31] The Supervisory Board was expanded to 'at least' 15 members. This was done in order to guarantee the shareholders from outside Amsterdam a fair chance of being represented in this council.[32] The voting shareholders were to meet annually.[33] The general meeting of shareholders was informed by the annual report and it decided on dividend, elected new directors and members of the Supervisory Board and discussed all proposals at hand.[34] Extraordinary meetings were called by the President or by written request from 20 voting shareholders representing at least 50 votes.[35]

[28] Bank Act 1864: art. 3.

[29] Idem, Art 22.

[30] RoP, art. 6: 5 shares give 1 vote, 10 shares give 2 votes, 20 shares 3, 30 shares 4, 40 shares 5 and 50 or more shares give 6 votes in the meeting of shareholders.

[31] RoP, art. 25.

[32] Handelingen/Parliamentary record (see also: De Jong 1967, p. 46).

[33] RoP, art. 35.

[34] RoP, art. 37.

[35] RoP, art. 38.

A final interesting novelty in the Statute was the procedure in case the Supervisory Board members, upon examining the books, decided not to approve them. For our purposes the precise details of this procedure matter less than the fact that this possibility was introduced at all.[36] For management the 1864 Act also brought a number of changes. The Secretary became a Governing Board member, to be appointed by the King, like the President, based on a recommendation of the joint meeting of Governing and Supervisory Boards.[37] The other Board members, the five directors, under the Bank Act, were appointed for 5 years by voting shareholders, after pre-selection of three candidates by the joint meeting of Governing and Supervisory Boards. Although the Treasury Minister and the Bank wanted to continue the system of appointment by the Government, this was not allowed by the Council of State, an official national legal body, that objected to what it considered excessive government influence.[38]

In summary, during the 1814–1864 period, formal arrangements afforded shareholders tiered and limited control. Only the 50 principal shareholders could vote for *Commissarissen*, which were appointed by the King. The Government decided on the appointment of directors and members of the Supervisory Board. In 1864 the position of shareholders improved slightly in the sense that they could appoint the Governing directors from that time on while far more shareholders obtained the right to vote.

5.3 Shareholders' Interest in Practice

Until 1852 shareholders had no information on the state of the Bank apart from the fact that they received annual dividend payments. Their influence was therefore negligible and they had to trust that the principal shareholders, later the voting shareholders, would guard their interests. Clearly, the introduction of 'voting shareholders' significantly enlarged the group of shareholders that had a say in the Bank. By the year 1865 there were 1,770 voting shareholders, and in 1887 there were 1,574.[39] More than half of the shares were in the hands of voting shareholders. Voting shareholders met no more than twice a year and were generally only concerned with filling vacancies in the Supervisory Board and (after 1864) vacant directorships. Generally, the minutes of their meetings mainly consisted of several pages with names identifying who was eligible, and not much else.[40]

In the period from 1814 to 1864, the Supervisory Board met with the Governing Board (the 'Joint Meeting') twice a year. Once a year, this meeting was required

[36] Idem 55.

[37] Art. 18.

[38] De Jong (1967), p. 45.

[39] Gerritsen (1888), pp. 163 and 164.

[40] NL-HaNA, DNB—Secretariearchief, 2.25.68, inv.nr. *5448–5451 (covering 1814–1853)*.

under the Charter to (re-)elect Governing and Supervisory Board members. The minutes of the meetings do not reveal much internal discussion. Only a few times did a third joint meeting take place in 1 year.[41] This was not frequent enough to impact on strategic developments or decisions throughout the year, let alone to be able to influence daily business.

On average, members of the Supervisory Board served for roughly 12 years, which meant that they were re-elected after their term expired. A critical observer noted that the limited expertise[42] and the friendly atmosphere further reduced shareholders' influence. Whether this derived from friendliness or not, the quasi ritual phrasing in every Annual Report about the merits and great services to society of the Governing Board does not give the impression of a very critical stance. But more tellingly, only once was there a recorded conflict between the management and the Supervisory Board. This happened in 1852. The Governing Board then proposed a number of changes in the behaviour of the Bank along the lines of plans that Mees (then Secretary to the Board) had drafted.[43] The Supervisory Board fiercely resisted the proposal to publish the balance sheet on a regular basis. The Supervisory Board argued that this implied changes to the Charter that required approval by shareholders. The Governing Board claimed that it could publish the balance sheet if the Supervisory Board and the Government agreed to change the Charter accordingly. One *commissaris* stepped down when the Governing Board held on to the proposed publication. This was the only instance where a member of the Supervisory Board resigned for other reasons than death or old age.

It is hard to establish whether shareholders had reason to complain about this lack of influence, but few appear to have voted with their feet. The initial capital was not easily placed in 1814. For more than 2 years, a large part remained unsold. The remaining shares were eventually bought by the stock-broking firm Wed. Borski in 1817 and then sold on the market. When the capital base was enlarged in 1819, however, this additional issue was quickly placed without financial support from the Government. Every new issue of shares after that met with keen demand. When the Charter was renewed in 1839 and shareholders had the chance to return their shares nobody did (Table 5.1).

The net profits of the Bank and the total value of the dividend payments are shown in Fig. 5.1. The figure also shows the development of the stock price (adk) (right axis in guilders).

Virtually all net profits were paid out to shareholders. Only a modest part was kept in reserves. Hence, the reserves grew slowly, but steadily. A modest growth of profits until 1848 was interrupted by the slump of the early 1850s. After that there was a steep upswing towards 1857 but profits continued to rise in the 1860s,

[41] NL-HaNa, DNB—Secretariearchief, 2.25.08 inv. nr. 3.342–3.346 contains the minutes of the joint meetings. These minutes mention the absentees, the eligible shareholders and the outcomes of the voting about new Board members.

[42] Gerritsen (1888), pp. 170 ff.

[43] De Jong I-1, 384.

Table 5.1 Number of shares of DNB, 1815–1865

Year	Number of shares
1815	2,445
1816	4,114
1817	5,000
1820	10,000
1841	15,000
1865	16,000

Source: database historical data DNB, 1814–1870

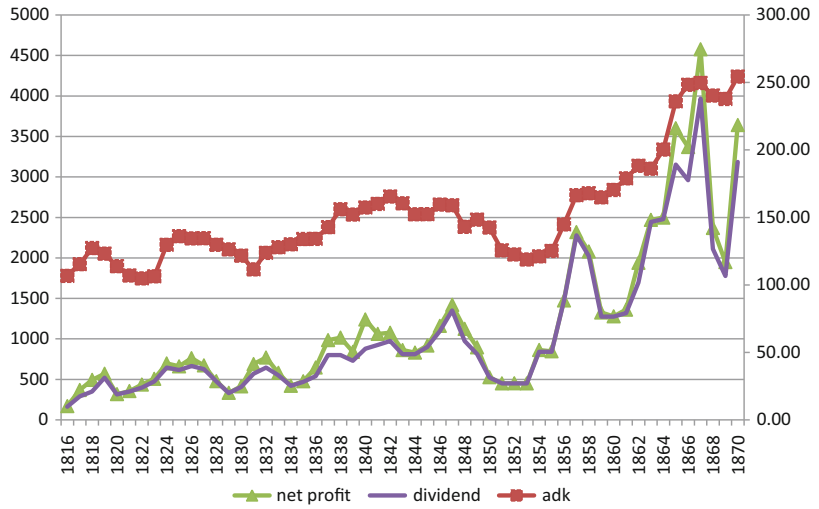

Fig. 5.1 Net profits and total dividend payments of DNB (in hfl 1,000) and stock price of DNB (*adk*) right axis (in hfl.), 1816–1870. Source: database historical data DNB, 1814–1870

attaining unprecedented levels. Although the Bank generated profits, it is not clear whether the shareholders were satisfied with these profits. Still, the development of the share price indicated a rising willingness to hold these shares from the 1830s onwards. From then, on the share price ran largely in parallel with profit.

To put this into perspective: in Fig. 5.2 the yield of DNB is compared to the yield on government debt, the so-called *Nederlandsche Werkelijke Schuld* (NWS). The yield shows the returns on a guilder invested in either a DNB share or the NWS. The yield is calculated as the ratio between the dividend (or interest) paid and the average price of the security in a given year. The interest on the national debt was set at 2.5 %, but since the government debt traded below parity (hfl 100 bonds could be bought at a lower price), the return per guilder invested increased. DNB shares did not sell for less than their nominal value. DNB shares had a lower yield (except for a few small exceptions) than NWS until the second half of the 1850s.

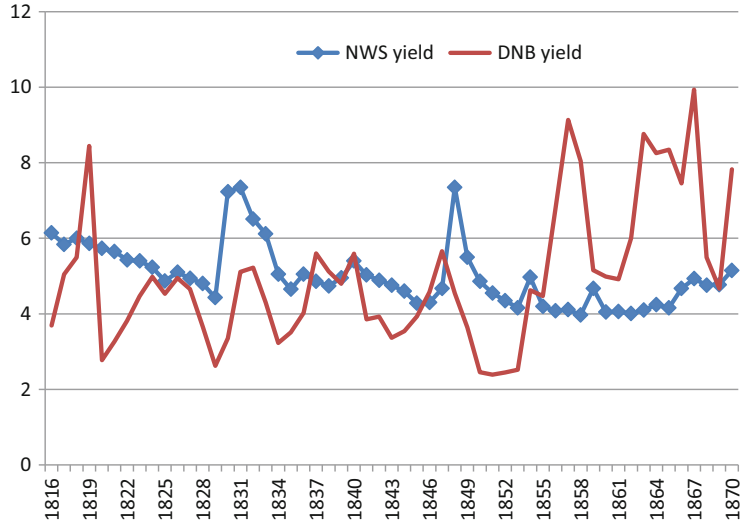

Fig. 5.2 Government debt yield and DNB yield, 1815–1870. Source: database historical data DNB, 1814–1870; and Homer and Sylla (2005)

The only advantage of holding DNB shares seems to have been their steady absolute value, so that they provided a safe investment.

Therefore, the lack of influence made it impossible for shareholders to pressure DNB into assuming more risk or a more actively competitive stance. They had to accept modest returns. In 1821, the dividend was so meagre that it required intervention. The bank bought its own shares, paid for out of the reserves, in order to improve dividend payments.[44] When in the 1860s profits soared,[45] the Bank discontinued the practice of topping up dividends with returns on invested reserves that had not yet been received.[46] The share price then also took off to unprecedented levels.[47]

Apart from the relatively modest dividends, shareholders may have profited from privileges granted under the first Charter: Shareholders enjoyed the privilege of being treated as preferential borrowers.[48] This was particularly useful when the

[44] De Jong I-1, 130.

[45] From 1858 to 1863 average annual dividends were 12.3 %.

[46] Annual Report 1862–1863: "niet langer worden inkomsten uit beleggingen geboekt als ze nog niet binnen zijn. Deze procedure was wel te verdedigen, maar vond destijds vooral plaats omdat het dividend ternauwernood fl 30,- bedroeg."

[47] Between 1864 and 1875 annual profits averaged fl 3.4 million and average annual dividends rose to an incredible 19.5 %. This boosted share prices which soared to unprecedented levels. These averages do not reveal the increasing volatility of returns. After 1875 the dividends remained very high on average, at 17.1 %, but average annual profits over the period 1875–1889 were lower at 2.9 million. And perhaps, as a consequence, the share price started dropping.

[48] Charter 1814: art. 16.

market became illiquid and the Bank rationed credit, but that did not happen very often (see Chap. 8). More important was the fact that DNB shareholders paid no wealth tax over the shares or paid-out dividends.[49] On the whole, these advantages were middling at best but may have compensated the modest profit somewhat. All in all, therefore, shareholder influence was severely limited so that the Bank could afford to pay out comparatively moderate dividends.

5.4 Management

Internally, management was predominant and able to operate largely independently from shareholder influence. For several reasons it maintained a strong position. The President and the Secretary wielded great influence, because their full-time presence in the Bank gave them superior information and insight in the course of business at the bank. Attendance by directors had already ebbed. Although they showed at the bank every working day,[50] that was probably just for a few hours at most. They took turns in being present full-time only once every few weeks.[51]

Governing Board members were shareholders themselves and had the right to vote in the shareholders meeting as well.[52] In theory, the Governing Board had access to the register of shareholders and could find out which shareholders had the right to vote. This information could have been used to form coalitions of shareholders before meetings. Other shareholders had no way of organising themselves before a meeting. Finally, it seems that at shareholders' meetings the turnout was generally low, which constituted another advantage for the Board.[53]

Furthermore, continuity in the management may have contributed to this dominant position. The average time served by a President was 7 years (calculated for the first 7 Presidents until Mees). All Presidents had been a Director before they became president. Mees became President in 1863 after serving 14 years as Secretary.

[49] Charter 1814: art. 19.

[50] In 1848 there were certainly daily meetings of the Governing Board. In the report of the Governing Board to the Supervisory Board of 1848–1849 we find a remark that when Crommelin gave up his position, the Board expresses its sorrow 'to not be able to meet him at their daily meetings.' These meeting took place every day and were probably mainly for deciding on the loan requests that could not be decided by the Secretary or Cashier on the basis of their instructions. These meetings took place between 10 and 12 in the morning and decisions to change the bank rate were announced in the afternoon. See de Jager (1989), p. 22.

[51] Only in 1916 the statutes were changed in order to allow a new director a full time position at the Bank. Idem 137.

[52] Gerritsen (1888), p. 267.

[53] Idem, 268.

In that capacity he was later referred to as the most influential person in the Bank from 1850 until 1864.[54] The Secretary, while officially a Board member only from 1864 onward, held his position, on average, for more than 10 years. Directors in the whole period up to 1864 served 13 years on average. While these averages point at the fact that virtually all Board members were reelected after their term ended, the continuity was even higher. All Presidents until 1844 had sat on the Board since the Bank was established. For the first 30 years, the Presidency was in the hands of members of the first Governing Board. A remarkable stability must have characterised the Board. Mees' term was the longest at 36 years in total of which the first 14 years as Secretary to the Board and the rest as President.

This continuity and stability was furthered by the fact that the same people moved between positions within the Governing Board and between the Governing and Supervisory Boards. The move from Secretary to President or director was not uncommon. This suggests that the circle of people that held influential positions in De Nederlandsche Bank was relatively small. Across the entire period from 1814 to 1860, just 23 men filled the Governing Board positions (Directors, President and Secretary). Table 5.2 provides an overview of the Governing Board members appointed until 1864.

The expertise of the management in banking and monetary affairs also contributed to the independence of the Governing Board. Shareholders would have a hard time rebutting arguments of the management, not only because they lacked opportunity to do so, but also for lack of expertise. The first two Presidents were partners in banking firms in the Amsterdam market. Croockewit participated in the national monetary committee in the 1840s and Mees in his time was considered as possibly the greatest expert on monetary matters and banking in the Netherlands.[55] The management's expertise put shareholders at a disadvantage, and, to some extent, it made the Government also dependent on the Bank. Over time, the Government repeatedly asked the Bank for advice, certainly in matters in which the bank had an operational part, such as currency issues.

The management's remuneration was a share in the Bank's profits. This formally aligned the incentives for the Governing Board with those of the shareholders. In practice, however, the remuneration may not have been all that important. For most directors their Board membership was a side line that required no more than a couple of hours on a couple of days a week.[56] The first President of the Bank, Paul Iwan Hogguer, waived his right to remuneration. When he left in 1817, the Board proposed to reduce the share in profits. Apparently only the very wealthy were recruited for the Governing Board.

[54] Pierson (1884), pp. 98–125.

[55] Hasenberg Butter (1969) and Pierson (1884).

[56] De Jager (1989), pp. 22 and 23.

If the management could act relatively independently from shareholders' influence, what motives guided the behaviour of the Bank's management? This is of course difficult to determine with certainty, but a few observations about the background of some Governing Board members are interesting in this respect.[57] The Governing Board as it was constituted in 1814 seems not have been recruited from the traditional Republican Amsterdam ruling elite. Apart from Van de Poll, all initial Board members had a background in financial services. All of them were from Amsterdam. Hogguer, Mogge Muilman and Van de Poll were known Orangists and had been outsiders in Republican Amsterdam.[58] By 1814, however, Hodshon, Hogguer and Mogge Muilman all took part in the *Vergadering of Notabelen* (see Chap. 2) that voted for the Constitution in 1814. King Willem I bestowed noble titles on them. Hodshon, Fock and Teysset had been protestant dissenters (Mennonite and Walloon) and as such their families had been excluded from public service or political careers.[59] DNB may have been managed by relative outsiders.[60]

Board members that were appointed until 1860 (see Table 5.2) were often from the nobility and religious dissenting backgrounds. They did not come from the ruling elite, but their personal interests coincided with the general Amsterdam commercial interest and they often were active in trade or finance. Mees was the first Board member who did not originate from Amsterdam. He also did not come from the business community, but had an academic background when he entered the Bank as Secretary. All in all, this background suggests a keen awareness of the Amsterdam commercial interest if not an inclination towards it.

This short sketch of the background hints at how the management of the Bank would define its objectives, namely in terms of the Amsterdam commercial interests. However, the motives guiding management might also have been influenced by the Government. DNB was established by the King, and its management was appointed by the King. As we have seen, the removal of the proposal to delete the permanent appointment of the President in 1839 was regarded by the Governing Board as a threat: creating a potential vulnerability of becoming dependent on the benevolence of the Government.[61] This did not happen and in practice, however, this change did not reduce the average tenure of the President.

[57] It is beyond our scope to pursue a prosopographical account of the Board members. On the basis of the literature and the available online biographical data, http://www.historici.nl, repertorium ambtsdragers en ambtenaren and the Nederlands biografisch woordenboek, this general picture is sketched.

[58] De Jager (1989), p. 24.

[59] Idem, 25.

[60] Perhaps this relative outsider position of the management of the Bank also helps to explain the boycott of the Bank that took the first 3 years.

[61] Annual Report 1838–1839.

Table 5.2 Presidents, directors and Secretaries of DNB, in office between 1814 and 1860

Name	President	Director	Secretary	Supervisory board
Hogguer, P.I.	1814–1817			No
Hodshon, J.	1817–1827	1814–1817		No
Teysset, J.	1827–1828	1814–1827		No
Fock, J.	1828–1835	1814–1828		No
Mogge Muilman, W.F.	1835–1844	1814–1835		No
Poll, van der, J.		1814–1822		No
Lennep, Van, S.C.			1814–1821	No
Huydecooper van Maarsseveen, J.		1817–1836		No
Röell, W.		1827–1829	1821–1827	No
Carp, J.		1822–1838		No
Croockewit, H.	1858–1864	1849–1858	1827–1849	No
Valckenier van der Poll, J.J.		1828–1837		No
Eeghen, Van, J.		1828–1838		No
Willink, A.		1835–1845		1845–1852
Luden, J.		1836–1864		1864–
Fock, A.	1844–1858	1837–1844		No
Crommelin, C.D.		1838–1849		1849–1859
Melvil, J.		1838–1851		1851–
Mees, W.C.,	1864–1884		1849–1864	No
Insinger, J.H.		1844–1871		No
Rendorp, F.		1845–1865		1865–
Heukelom, Van, J.		1851–1879		No
Wolterbeek, R.D.		1858–1868		1868–

Source: database historical data DNB, 1814–1870

Conclusion

The key question in this chapter is, how a private corporation could embrace public objectives and give up profit maximisation. In order to answer that question this chapter first analysed the distribution of power over different stakeholders in De Nederlandsche Bank: shareholders and management. It was found that for the first 50 years shareholder influence was very limited. The shareholders lacked the necessary structural influence to force DNB to maximise profits. That could have been done by forcing it to take more risk. The picture that emerges is one of management operating largely autonomously, at least from shareholders.

What then determined the policies pursued by such an independent Governing Board? Whether it had its primary focus on public policy objectives rather than private objectives, or how these objectives were defined has yet to become clear. To some extent the Amsterdam background of the Board

(continued)

members may point to an inclination towards the commercial and financial interests of Amsterdam. The next chapters will analyse this picture by looking into the relationship between DNB and the Government. The analysis will show whether and how government influenced the Bank in defining and pursuing public policy objectives.

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Chapter 6
Relationship to the Government

6.1 Introduction

As we have seen, DNB was established for payment system reasons but the fiscal option was clearly left open. From the analysis of the governance of DNB we concluded that while legally a private company, DNB was not structured to maximise profit for its shareholders. This leaves unanswered the question of what objectives DNB did have. This chapter centres on the question of how independent DNB was from the Government. This is relevant for at least two reasons. Firstly, from a fiscal theory point of view, we would expect the Government to have strong influence over DNB in order to make it serve its purposes. From the perspective of the payment system, the role of the Government would be to support confidence in the new payment technology, i.e. banknotes. Historiography on DNB is not very explicit about the relationship between DNB and the Government. De Jong points at the wisdom of securing DNB's independence through the structure of its Charter, but he did not elaborate on the underlying incentives. Nor does De Jong devote much room to lending to the Government, which began in 1834. This 'incident' does not fit well in his linear history towards modern central banking.

This chapter begins with an overview of the instruments the Government had at its disposal to influence DNB. Then we look at four areas where the Government 'wanted something' from DNB: lending, cashiership, branching and currency issues, and establish how independently DNB could operate. The overall picture that emerges is that in most respects DNB remained independent from the Government. Lending was long postponed and kept within acceptable limits. Cashier services were reduced to a minimum despite pressure from the Government to make DNB offer cheap facilities. DNB refused to branch outside Amsterdam throughout its first four decades. Only on currency issues did DNB take a more cooperative stance, because there was a shared interest and the market accepted a role for DNB in this.

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6.2 Instruments for Government

The Government had several instruments to influence DNB. It held shares in DNB and appointed the Governing Board. DNB was for a short time financially dependent on the Government and, last but not least, the Government could have adopted legislation. These four main instruments will be looked at below.

6.2.1 Government as Shareholder

When DNB was established in 1814 the Government participated for fl 500,000. According to the Charter, this was done 'in order to instill confidence'.[1] This was a remarkable motivation, considering that Gogel expected government interference in any form to undermine the Bank's reputation and effectiveness. Gogel's expectations of how the market would react to the introduction of a government-sponsored bank proved correct. The slow placement of the shares (which took more than 2 years) indicated strong resistance if not an outright boycott. According to the Charter, 2,000 shares needed to be sold so that the principal shareholders could elect a Supervisory Board and compose panels for the appointment of the other members of the Governing Board. When in July 1814 2,000 shares remained unsold, the Governing Board consulted the Government on what to do. Government bought another 500 shares and the King personally bought the final 200 shares to make up the required 2,000.[2] After this, the Governing Board could be completed with three additional members. At this point, the Government and the King together held 1,200 shares. By March 1816 only some 3,000 shares had been placed. In order to ensure full capitalisation, the King accepted an offer made by the stock-broking firm of Wed. Borski to buy all remaining unsold shares on the condition that the capital base would not be expanded until 1819. This offered some assurance against the risk that the share price would drop. The King drafted a Royal Decree (KB) to that effect.[3] He apparently regarded this in line with his competence.

In 1819 and 1839 the share capital of DNB was expanded. The Government did not buy any of the new shares because it could not afford them. In 1839 the Government sold part of its shares at a profit.[4] In 1847 the State proposed to finance part of the currency overhaul by selling the shares it held in DNB. Objections were raised against this in Parliament because by selling its shares, the State would supposedly 'relinquish all influence over DNB.'[5] The liberal Minister Van Hall argued that the State should not participate in a commercial enterprise as a matter of

[1] Charter 1814 art. 7. "ter meerdere geruststelling van 's lands ingezetenen."

[2] De Jong I-1, 85 and 86.

[3] Idem, 100.

[4] Idem, 269.

[5] Idem, 298 and 299.

principle. Besides, shares did not confer any substantial benefits or influence anyway. Our analysis of the corporate governance of DNB in the last chapter confirms the Minister's observation. The King's membership of the Supervisory Board did not afford him much influence either. That is why he tried to reserve a seat for the Government on the Supervisory Board during the preparations for the Charter renewal in 1838 (see Sect. 6.2.4). In 1847, the shares were sold at a profit, after which DNB remained in private hands for more than a century.[6]

6.2.2 *Appointment of Board Members*

The appointment DNB's Governing Board was entirely a government affair. The King appointed the President and the Secretary personally and for indefinite periods of time. The King also appointed directors, but the joint meeting of the Supervisory and Governing Boards selected pairs of candidates for the King to choose from. Every half year a director had to step down, making the effective term of a director two-and-a-half years. Formally, this created a strong personal dependence of the directors on the Government. The King could replace a majority of the Board in 2 years. In 1839, the term of directors was doubled under the renewed charter to 5 years. A proposal to limit the term for the President was criticised by DNB, because it regarded it as a threat to its independence from Government and nothing came of it.

In practice, the right to appoint Governing Board members does not seem to have been used very actively by the Government. As we saw in the previous chapter, Board members were almost invariably re-elected and remained in office for as long as they wished. According to the official sources, the reasons for stepping down were ill-health or old age. It is certainly remarkable that all surviving initial Board members became president during the first 30 years. This might be interpreted as a sign that the Government was satisfied with DNB's performance and this may indicate awareness on the part of the Government that active interference in DNB's management by means of appointments could harm DNB's reputation and effectiveness.

6.2.3 *Financial Dependence*

The Government could have exercised influence over DNB because it provided funding. Apart from the shares the Government bought, the current account balances of the Government and public authorities were substantial, especially in the early years. In fact, the Government's current account balances in the first few years

[6] The Bank remained a joint stock company, all shares were nationalised in 1948.

constituted the main source of funding of DNB (attaining 90 % of all short liabilities in 1815). As long as shares were not sold and banknotes did not circulate widely, DNB depended heavily on the Government's current account balances. This situation changed when the capital of DNB was doubled in 1819.

Contrary to what the fiscal theory on the establishment of national banks would predict, DNB depended on the Government for funding rather than the other way around. Within DNB, concerns were expressed repeatedly over the risk that Government would withdraw too much money from DNB, because that would effectively force DNB to suspend lending. However, the Government had no incentive to withdraw its funds from DNB as it would have probably have meant the end for DNB in those first lean years. Besides, Government would probably not have had a viable alternative place to deposit its funds.

6.2.4 Legislation

Legislation is of course a Government's most powerful instrument, but it was not used very much in relation to DNB. In 1814 DNB was chartered for 25 years, which shows the Government's intention to grant a degree of independence to DNB. The Charter stated that the Government could change the Charter only by statute law.[7] Yet when in 1839, the Charter was renewed, no major adjustments to the objective, the operations and the privileges of DNB had been made. Apart from the revision of the term for the members of the Governing Board, which, as we have seen above, had little effect in practice, the governance arrangements remained largely intact. Changes made in the renewed Charter on the one hand related mainly to operations and privileges, broadening the scope for business and, on the other, defining more precisely the exclusivity of DNB's business.[8]

During the preparations for the Charter renewal the King expressed the wish to be better informed about the business of DNB, preferably through publication of an annual report.[9] From the start, the King had been chosen (by lot) as a member of the Supervisory Board. Perhaps his representative attending the annual meetings reported insufficient information. Anticipating unwillingness on the part of DNB to publish anything like an annual report, the Minister of Finance instead suggested appointment of a government representative to the Supervisory Board (*Koninklijk Commissaris, KC*). "Such an appointment would be useful to ensure appropriate supervision of DNB, without resorting to direct representation in the Governing Board." Such supervision was necessary in order to safeguard the public interest and to ensure compliance with the requirements of the Charter, the Minister

[7] Art. 62 first Charter.

[8] This was mainly a legal issue April 1838: doc 67 undated advice.

[9] 'Minutes of a meeting between the Board and the Minister of Finance on the renewal of the Charter, d.d. 26-6-1838', in: De Jong I-2, doc. 76.

argued.[10] DNB strongly resisted these proposals as a direct threat to its independence. It considered the fact that the King had been chosen by lot as a member of the Supervisory Board as sheer chance. There was no need for formal arrangements.[11] Apart from being offended by the suggestion, DNB thought that 'such a novelty would destroy the public confidence' in DNB that had been so painstakingly nourished over the years. DNB had always felt supported by the Government in building up public confidence by maintaining its independence. Loss of confidence would render DNB ineffectual. This feeling had been expressed more than once in the press. The Minister of Finance did not deny the importance of DNB's independence from Government for the confidence it enjoyed and proposed to appoint the KC tacitly.[12] The Minister tried once more, but DNB again replied that "its independence was the main pillar supporting its credit."[13] This proved to be the decisive argument, as in later exchanges on the renewal of the Charter the KC was no longer discussed.

During the reign of King Willem I no requirement was ever imposed on DNB by means of legislation. All pressure was exerted informally, usually in bilateral meetings or letters. The King was aware of the importance of upholding DNB's reputation. This probably explains why he avoided legislation, because normally that would require a public legislative process. Royal Decrees were much easier to adopt and if necessary could be kept secret.

In the years following the abdication of King Willem I in 1840, liberals attempted to impose certain regulatory reforms on DNB. For instance, Van Hall pushed on note issue regulation and cover rules and for the establishment of a Rotterdam branch (see Sect. 6.4 below). The rules on banknote issue and cover were laid down in secret Royal Decrees. In 1852 the Government also legislated rules on transparency for DNB, ending the policy of secrecy and obliging DNB to publish information about its state of affairs. These changes were not intended to increase Government's control over DNB but can be regarded as elements of the liberal agenda aimed at improving legality and accountability.

Now that we have reviewed the instruments at the Government's disposal, we will proceed to look into several dimensions of the relationship between DNB and the Government. Firstly, we look at the Government as a client of DNB, then at branching and finally at currency issues.

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[10] "Memorie van den minister van financiën, den Minister van buitenlandsche zaken en den minister van Staat, van Gennep, d.d.16-18 juni 1838 betreffende de verlenging van het bankoctrooi." In: De Jong I-2, doc. 71.

[11] Minutes of an extraordinary meeting of the Governing Board 25-6-1838 concerning the renewal of the Charter. In: De Jong I-2: doc. 75: This was considered a novelty that, apart from the little respect for the management of the bank expressed by it, 'would jeopardise the finally attained credibility.' This credibility was based on the independence from government of the bank.' Public opinion had 'already several times clearly expressed itself against government interference in the bank.'

[12] De Jong I-2: doc. 78.

[13] De Jong I-2, doc. 76 and 79.

6.3 Government as a Client to DNB

The Government patronised DNB as a provider of payment services and loans. Both types of business provide interesting insights in how Government considered DNB.

6.3.1 Cashier to Government

DNB acted as cashier to the Government for its business in Amsterdam. Before DNB was established, the Government's payments and receipts in Amsterdam had been administered by the Centrale Kas (CK). The CK was established in 1810 for the operational management of the Treasury. Located in Amsterdam, it operated largely independently from the Minister. When DNB was established, the CK was closed down. DNB not only took over the CK's function, it also inherited nearly all of its assets. DNB's initial funds came from the cash left in the CK.[14] Some of the funds were put on deposit, part of the money was used to pay for the Government's shares in DNB. DNB moved into the offices of the CK and employed also some of its staff: the cashier-general of the Centrale Kas, for instance, continued as the cashier-general of DNB. With this in mind, one can easily understand that the newly established DNB was regarded as a government institution. Even the fact that it was a bank may not have been immediately clear to everyone.

DNB thus took over from the CK as the operational linking pin between the money market and the Treasury. Management of the current account included booking all payments into and out of that account. This meant that DNB received money for bonds issued and paid interest to bondholders. Recording all incoming and outgoing payments gave DNB a lot of work with high seasonal peaks, for instance, due to interest payments. Logically, a conflict of interest existed between DNB and the Government over the cashier function. The Government wanted to have good services provided at the lowest possible price. When the Charter was renewed in 1839, the Government pressed hard on having cashier services performed free of charge. Yet it was reluctant to use its legislative powers to enforce free payment services. DNB grudgingly gave in, but at the same time abolished the preferential interest rate on lending to the State. The probable explanation for the Government's reluctance is that legislative action would have caused public attention. Such an alteration to the Charter might easily create the impression that the Government had control over DNB. Again, the Government was aware of the possible impact such a change might have on the reputation of DNB.

[14] 'Introduction to the Archive of the CK.' Nationaal Archief, Den Haag, De Nederlandsche Bank N.V., Archief van de Centrale Kas, *entry* 2.25.77.01, *inv. nr. 16246*; verkort: NL-HaNA, DNB—Centrale Kas, 2.25.77.01, inv.nr. *16246*.

6.3.2 DNB's Lending to the Government

According to the fiscal theory of central banking, national banks were created for the purpose of lending to Government. In analysing the establishment of DNB we concluded that the changes King Willem I made to Gogel's draft suggest an intention on the King's part to use DNB for fiscal purposes. We look at the development of direct lending to the Government first. Then we turn to the more limited fiscal role the King may have had in mind for DNB.

Direct lending requests from the Government were received several times. In 1815 the Government asked DNB to discount Treasury Bills in order to obtain money to pay for immediate war expenditures (caused by Napoleon's return until Waterloo). DNB refused, because it was short of funds. Its shares had not yet been placed and banknotes were not yet accepted by the public. Pressure was exerted by the King, but the Bank resisted. Formally, DNB could not be forced to lend and also informally it showed itself independent enough to refuse. The reason DNB gave for its refusal was that lending to the Government might crowd out lending to the private sector.[15] The King was disappointed again in 1830 when warfare following the Belgian Secession increased government expenditures dramatically. Repeated lending requests were all refused by DNB.[16] As government finances deteriorated dramatically during the 1830s, largely due to continued military action, pressure on DNB increased. In 1831 the Board discussed another request from the King; The President proposed that DNB should contribute to the 'voluntary loan of 42 million guilders' in the sense that DNB agreed to accept subscriptions to the loan as collateral for advances.[17] This only made the loan more attractive and easier to sell. DNB did not help the Government directly.

In 1834, for the first time DNB agreed to lend directly to the Government on collateral of Treasury Bills. The Governing Board "regarded itself duty-bound to contribute to the public interest."[18] There was some discussion over terms, but the Minister accepted that he could lend fl 2.8 million against collateral of fl 3 million in Treasury bills (TBs). This was not done by the Government or a representative and was not registered in the books of DNB as a loan to Government. The operation went through a middleman, J. van Iddekinge, who worked for the Amortisatie-Syndikaat, in order to avoid drawing attention to it and conceal this transaction.[19] Figure 6.1 shows the total stock of outstanding loans to the Government. The graph shows that the loan of nearly fl 3 million was continued until 1843. Then, as a state bankruptcy was imminent, an additional loan was granted until the value peaked at roughly 6.5 million guilders. It was not fully paid back until 1844. After that until

[15] 'Letter DNB to Minister of Finance, d.d. 21-4-1815, concerning discounting government paper.' In: De Jong I-2, doc. 13.

[16] Idem, 171.

[17] MB 15-4-1831.

[18] MB 9-6-1834: "... onze pligt gaarne tot gemeen nut zal bijdragen."

[19] De Jong I-1, 176.

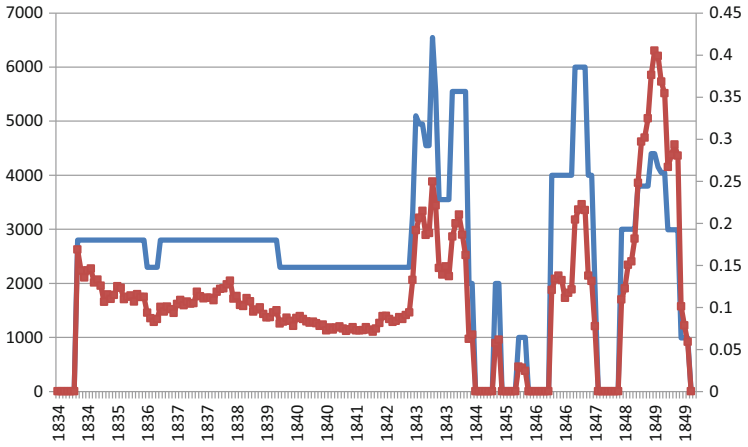

Fig. 6.1 Stock of DNB loans to Government left axis (in fl 1,000) and share of lending to Government in total lending by DNB right axis, 1834–1849. Source: historical database DNB, 1814–1870 (from: De Jong I-2, table 8)

1849 several further facilities were created. Put together these loans amounted to approximately fl 23.7 million over a span of 15 years. Until 1839, the Government borrowed at a rate 1 % point below the official lombard rate.[20] This favourable condition was abolished in a trade-off against the obligation upon DNB to perform payments for the Ministry of Finance and the *Amortisatie-Syndikaat* free of charge. After 1849 Government no longer needed to borrow from DNB.

De Jong discussed this topic only in passing.[21] This may have to do with the fact that the total volume of these loans is relatively small, especially when compared to total government debt. The Dutch government debt touched fl 1 billion in 1832 and stayed on that level until 1849.[22] The associated interest payments increased from about fl 20 million to about fl 35 million per annum. That means that, at the peak of lending, DNB's loan volume covered at most about one-sixth of the government's annual interest payment. This may have been important, but it would by no means have been sufficient, particularly in the years until 1845 when debt servicing became more and more problematic and a State bankruptcy was imminent. Clearly, DNB was not the Government's saviour.

In relation to DNB's total credit volume, however, these loans were at points important. The share of government loans in DNB's total lending declined from 15 % to about 10 %, until 1843. During the peaks in 1843 and 1847 the share was

[20] With the Charter renewal this discount was cancelled, as the Bank had to start servicing the Amortisatie-Syndikaat without charge.

[21] De Jong I-1, 176 and 177 deals with all lending to the Government at once and never refers to it elsewhere.

[22] Data kindly provided by F. Bos (see Chap. 2).

slightly over 20 % and only in 1849 did the share cross the 40 % mark, but that was mainly owing to the collapse in other lending business due to the economic slump. In the late 1840s lending to the Government at least yielded some revenue for the Bank. All in all, DNB's lending to the Government remained limited. It falls far short of the expectations of the fiscal theory of the development of central banking. Particularly compared to the Bank of England (see Chap. 2), DNB's lending to Government was neither structural nor institutionalised. It was incidental and fairly limited.

After repeated attempts in the first decade, the King apparently accepted that DNB was not the ideal vehicle for lending and the King devised new institutions for that purpose, such as the Amortisatie-Syndikaat, the Société Générale (1823) and the Nederlandsche Handel-Maatschappij. In 1822, the King established the Amortisatie-Syndikaat (AS) by merging the Amortisatiekas (1814) with the 'Syndikaat der Nederlanden' (1815). Both institutions had been established for the purpose of extinguishing the Government debt. The AS, however, also financed expenditures, e.g. infrastructural investments and subsidies. It did so by issuing debt certificates backed by royal domains that it could sell if need be. The AS created the possibility for unauthorised and unchecked spending for the King and continued to do so until 1839.[23] Interestingly, the establishment of the Société Générale in 1823 shows some of the lessons learned, as safeguards against dependence on Government were notably absent. This new bank was to help finance government expenditures (also mortgage credit) and was obliged to open branches which it needed for its cashier function throughout the Kingdom. Management of the Government's current account was an important source of funding.[24] Compared to the Nederlandsche Handel-Maatschappij, DNB's lending to the Government was also limited. The Government borrowed quite extensively form the NHM (established in 1824). In 1838 the credit facility had reached a peak of fl 40 mln. But interest on lending until 1849 constituted about 25 % of all income. It was an important sideline.[25]

DNB's reluctance can be partly attributed to the conservative attitude of its management. At the same time, this conservatism was probably quite rational: DNB had to overcome initial distrust in the money market of Amsterdam because it had been established by the King. The distrust of the King and politics in general can be understood considering the rift that had opened up between the Amsterdam financial world and political life centred in The Hague around the King. Dutch wealth-holders, particularly in Amsterdam financial circles, had been willing to finance government debt in the past, as they were also largely in control of the

[23] Pfeil (2009), pp. 86 and 87 and Riemens (1935).

[24] Buyst et al. (2005), p. 14; It is interesting that the legislation to make this possible did not pass parliament. The SG developed into a general cashier for the Government, a broader role than DNB had in relation to the Centrale Kas. This role as cashier to the Government generates a large cash base for the SG that the Bank used for lending. This way money in the treasury could be mobilised. Pfeil (1996), p. 276.

[25] de Graaf (2012), pp. 50 and 51.

Government. Two important things, however, had changed since then. Government debt had already grown to unsustainable levels once before, and the King had further upset the institutional balance by his autocratic governing style and opaque finances.[26]

DNB had resisted lending to the Government for 20 years and after that lending remained relatively limited. This does not mean we can reject the fiscal theory completely. In a more subtle way, the King used DNB in the context of his financial operations. In order to facilitate the placement of loans in the market, the King expected DNB to provide money at a moderate rate of interest. The Loan Banks in the late eighteenth century had been set up for this purpose, and Gogel's proposal was clearly inspired by that as well. At the end of 1823, when the Amortisatie-Syndikaat (AS) issued bonds for an amount of fl 80 million, subscribers had to pay up 50 % before 1 January 1824. This put a serious strain on the market. In order to facilitate subscription, DNB offered advances at 4 % and maintained that rate all through December. It was feared that subscribers would have to sell their subscription. If they did so on a large scale, it would put the price of the bond under pressure, threatening the success of the issue. DNB was aware of the King's expectation: "Given the intentions of the King when he established DNB, we must be prepared to help the AS."[27] In late November 1823, although the growth of the lending volume warranted raising the rate (and the discount rate was indeed raised), the President refused to lend his consent, because he had promised the Minister at the King's urgent request to keep the rate at 4 %.[28] The Minister repeated this request in bilateral meeting, stressing that 'the Bank was of course at liberty to decide on the rate as it thought best'. Yet the Minister also asked to be informed in advance, should DNB decide to increase the rate.[29] Afterwards the King expressed his satisfaction with DNB's contribution to the successful start of the AS.[30] The King was so pleased that during an official visit he expressed his gratitude, referring to DNB as his 'eldest daughter'.[31] DNB had played an indispensable role in issuing the loan that started the business of the AS.[32]

From this episode two things become clear. Firstly, the support that the King expected from DNB was perhaps not so much in direct lending, but rather in

[26] This argument is also made by Van Zanden and Van Riel (2000), p. 268.

[27] MB 21-11-2013.

[28] Ibidem.

[29] MB 28-11-1823.

[30] De Jong I-1, 120–122 describes the operation, but does not mention that DNB kept its lombard rate in December at 4 % as requested by the King. This was recorded in the Minutes, not in the Annual Report.

[31] AR 1823–1824 (Inv. nr. 768) the Board mentioned that the King had said (during an official visit in April 1824) that he regarded the Bank as 'his eldest daughter.' Apparently, the King referred back to a previous statement, in a meeting before establishing the AS, when he told the President (MB 12/2/1822) that 'he would not sacrifice the (good health of the) elder sister to the success of the younger.'

[32] Riemens (1935), p. 105.

keeping the market liquid when the state issued a (large) loan. (In Chap. 8 we discuss this episode in some more detail when we look at the factors determining DNB's bank rate policy.) Secondly, the money market in the 1820s was not considered insolvent, but merely illiquid at times. Access to the wider Amsterdam capital market was more important than the facilities DNB could provide. For this purpose DNB's role in keeping the market liquid (at difficult times) was crucial, and in order to be able to play that role its banknotes had to be accepted and acceptance of the banknotes crucially required DNB's independence.

6.4 DNB's Refusal to Branch Out

Amsterdam's financial infrastructure, developed over more than two centuries, had become quite advanced and was still an international financial centre. In terms of both access to resources (capital and labour) and usefulness as an institution, Amsterdam was a logical location for DNB. DNB was, however, intended to be a *national* bank and from the start the Government had pushed for the establishment of branches outside Amsterdam. In the Charter of 1814 this was still formulated as an option that DNB could use at its discretion.[33]

In 1815, the King asked DNB to open a branch in Antwerp or Brussels. He probably wanted to stimulate the integration of the two parts of his Kingdom by facilitating payments. DNB declined to oblige, citing lack of financial means as the reason. In 1819, however, with all shares placed and its capital doubled, this argument no longer applied. In the early 1820s the King developed a new proposal for a bank in the Southern provinces, a Domain Bank.[34] DNB objected that this would constitute a breach of the exclusivity of its charter. The proposed institution would also be a joint stock bank with a comparable operational scope. The King argued that because DNB refused to set up business in Antwerp or Brussels, despite several requests to do so, it had forfeited its exclusive right.[35] As we saw above, the Société Générale (SG) was established in 1823. Formally, this was against the Charter of DNB and required the introduction of a law, but the King ignored this. After its establishment, SG opened branches throughout the Kingdom and acted as cashier to the Government, facilitating payment throughout the Kingdom. SG stayed out of the Amsterdam market and established a correspondent relationship with DNB for making and receiving payments in Amsterdam.

[33] Charter art. 43.

[34] Discussed in Chap. 3: as an indication of the intentions of Willem I with DNB, which did not work out. The Domainbank and the establishment of the Société Générale show that the King had learned from the experience with DNB and had removed safeguards for independent governance.

[35] 'Letter of C.S. van Lennep to C.C. Six van Oterleek (Minister of Finance), about extending the business of DNB to the Southern provinces.' Doc. 14 and 'Advice of J.H. Appelius to the King about extending the business of DNB to the Southern provinces.' d.d. 7-5-1815. In: De Jong I-2, doc. 15.

In 1839, the renewed Charter (Art. 34) put DNB under an explicit obligation to open a branch in Rotterdam. The local Chamber of Commerce celebrated this repeatedly as 'an entitlement bestowed upon Rotterdam.'[36] The Governing Board then reluctantly started preparations to comply with the new requirement. It drafted a management protocol which did not intend to leave any room for discretion to the Rotterdam branch, because it feared that otherwise control over loans might not be safeguarded.[37] DNB designed special banknotes that required two additional signatures for issue. That would have made acceptance of the new Rotterdam notes difficult. DNB argued it still lacked the means to open a branch, and while at the same time it was in trouble with the cashiers in Amsterdam (see Chap. 7 below), it requested the Minister of Finance to postpone the plan.[38] The Minister agreed.

Van Hall tabled the issue again in 1847, perhaps triggered by public opinion.[39] Again, the Board resisted. It feared high expenses, small profits and insufficient control. DNB did not see how it could guarantee convertibility of notes and maintain creditworthiness unless the Amsterdam Board had the final say in lending. DNB feared that if it had to check requests for loans by Rotterdam clients directly, this would take longer than the current practice. The largest Rotterdam cashiers already relied on DNB for liquidity. Under DNB's threat of entering the Rotterdam market, they had lowered their fees and offered to discount at the same rates as DNB.[40] This had improved conditions for lending in Rotterdam and banknotes were now used there in payments as well. DNB argued that its actual entry would not improve conditions further. The Chamber of Commerce pushed its luck by insisting that the Rotterdam branch should be independent from Amsterdam[41] and have discretionary powers, but this was unacceptable to DNB. The Minister let it rest, because he saw no compromise solution.[42]

When trade in Rotterdam expanded after 1850 the Chamber of Commerce again pleaded for an independent branch to provide easy access to liquidity, that is,

[36] 'Letter of the Chamber of Commerce of Rotterdam to the Minister of Finance about opening a DNB branche in Rotterdam.' d.d. 7-8-1847. In: De Jong I-2, doc. 109.

[37] 'Comments of Van Gennep to draft rules of procedure for DNB branche in Rotterdam.', (no date) Summer 1839, In: De Jong I-2, doc. 87; the Minister of Finance asked for comments to this draft from Van Gennep who spoke of 'a control inspired by narrow-minded fearfulness, totally making the branch subservient to the Amsterdam Bank'.

[38] 'Letter of DNB to the Minister of Finance asking for a postponement of the obligation to open a branch in Rotterdam.' d.d. 13-8-1839. In: De Jong I-2, doc. 88.

[39] In a Rotterdam newspaper the delay had been criticised. In: NRC, 16-6-1847: "Are there private interests that have the power to prevent a measure that for the entire Exchange is important? If so, can this be allowed?"

[40] 'Letter of DNB to Minister of Finance on establishing a branch in Rotterdam.' d.d. 12-2-1852. In: De Jong I-2, doc. 140. 'since 1847' conditions had improved.

[41] 'Letter of the Chamber of Commerce Rotterdam to Minister of Finance on establishing a DNB branch in Rotterdam.', d.d. 2-10-1847. In: De Jong I-2, doc. 113.

[42] 'Letter of the Minister of Finance to DNB on establishing a Rotterdam branch.' d.d. 23-11-1847. In: De Jong I-2, doc. 116.

banknotes.[43] Particularly in international trade, Rotterdam suffered from the fact that bills on Rotterdam were not readily accepted abroad, which created a dependence on the Amsterdam money market. DNB argued that it was possible for any Rotterdam merchant to borrow directly from DNB or indirectly through a cashier and that this was happening already. DNB stressed the value added of the cashiers, because they knew their customers better than DNB ever could. DNB would always rediscount good paper from the Rotterdam cashiers. DNB aimed to settle the dispute by keeping the cashiers in place. The cashiers would act as DNB's correspondents in Rotterdam and DNB appointed the cashiers as its correspondents; it would discount their bills without additional cost and would pay the postage for sending specie and securities to and from Rotterdam. This special arrangement between the Rotterdam cashiers and DNB took effect on 1 September 1852. DNB did not risk losing control and incurred no costs. The Rotterdam cashiers managed to keep the large competitor out of their market. DNB remained focused on Amsterdam.

It is not entirely clear how much demand for DNB's services there was from other parts of the Netherlands. But as trade grew with increasing national and international integration of markets, the demand for a uniform means of payment in these markets also increased. DNB did not directly serve many clients outside Amsterdam and Rotterdam until 1863, presumably because demand was limited. Although interest rates outside Amsterdam were said to be at least 1 % point higher, (if there were a market to borrow money at all) local markets were shallow and competition was limited.[44] The lack of integration of the national market came at such a cost that only larger businesses that had bills of exchange to discount all year round could well afford to discount directly at DNB. Many smaller businesses only occasionally had paper good enough to discount at DNB and would deal with DNB through Amsterdam-based intermediaries. A larger business might entertain a regular relationship with a cashier in Amsterdam to take care of its payments, negotiate bills and keep track of the creditworthiness of correspondents domestic and abroad. The cashier then generally also discounted bills for his clients, charging a fee of 0.25 %. This made discounting more expensive than it would be at DNB. DNB gladly opened current accounts for parties outside Amsterdam and accepted their paper in discounting just as easily and for the same fee as paper offered by houses in Amsterdam.[45] The main problem was getting paper and money to and from DNB. All in all, it was quite expensive for a client outside Amsterdam to obtain money from DNB and it meant that money spent a lot of time travelling.

[43] Letters Chamber of Commerce Rotterdam, In: De Jong I-2, docs. 109 and 113. See also Boele (1997), pp. 266–268.

[44] Therefore Wijnne (1863) argued that if the monopoly was maintained, the Bank should be forced to open branches outside Amsterdam. Otherwise, deleting the monopoly and privileges for the Bank would create room for the market to step in. Branches were good for all, the provincial towns and the bank itself. Improving the circulation of paper money was an improvement. Business in the provinces would benefit and profits for the Bank would increase, Wijnne predicted.

[45] Wijnne (1863), p. 23.

This situation changed only with the Bank Act 1864, which obliged DNB to open branches throughout the country. DNB duly set up a network of branches and a system of transfers between the branches. It is rather surprising that in 1864 DNB complied immediately with this requirement, whereas it had ignored a similar obligation in the past. Several reasons can be found for this. Infrastructure and communications had improved, mitigating possible concerns about loss of control. But infrastructure only provided a necessary but not a sufficient condition. Economic conditions had greatly changed, economic growth was taking off and the domestic market was rapidly integrating. This may have changed DNB's cost and benefit analysis, as its business outside Amsterdam also expanded, increasing DNB's opportunity cost of not branching out. DNB entered new local markets and probably exercised considerable market power there.[46] Quite contrary to what DNB had expected, the branches quickly added to profits.

All in all, the topic of branching shows the independence of DNB relative to Government, even to the point of ignoring requirements in the Charter. In the first 5 years, DNB understandably argued that it did not have the means to comply. After the Charter renewal it had other issues to attend to. In the background, however, three arguments underlay the refusal of DNB. Firstly, the Governing Board feared loss of control, which given the limited means of communication, was understandable until the 1850s. Secondly, it expected the costs of branching to be far higher than the potential benefits. This may have been partly due to the expectation of high fixed costs relative to the expected level of demand outside Amsterdam. Thirdly, this argument may also have been inspired by the conservatism of the Amsterdam elite, insufficiently aware as it may have been of opportunities outside Amsterdam. These three arguments were so important, however, that DNB refused to obey the stipulations of its Charter.

The fact that Government accepted this can again be seen as an expression of the awareness of the need to uphold the independence of DNB. The King seems to have been perceptive of the importance of not pushing too hard. This again shows that the King's overriding intention with DNB was to ensure access to the Amsterdam money market. Interestingly, Van Hall was less considerate in 1847, probably out of a liberal drive to improve legality. Yet, even Van Hall did not put his foot down. The fear of damaging the reputation of DNB could hardly be an issue any longer in 1847, amid the gradual and irreversible acceptance of banknotes. Van Hall may well have taken the incumbent interest of the Rotterdam cashiers into account.[47] By 1864 DNB's market acceptance had become so strong that opportunities to expand its business unrivalled *beckoned*.

[46] Wijnne (1863), p. 24 expected DNB to profit from opening branches for this reason.

[47] Van Hall had been the lawyer for the Amsterdam cashiers during their conflict with DNB in 1839.

6.5 Operational and Advisory Role in Currency Issues

DNB and the Government had frequent contacts regarding currency issues. Starting in the 1820s, but continuing all the way up to 1850, DNB was involved both in an advisory role and operationally in government policy regarding the currency. Did the Government force DNB to play this active role and if so, how?

The domestic coin circulation was in bad shape during the first half of the nineteenth century. There were all sorts of coins going round, many old, clipped and badly worn. The cost of assessing the intrinsic value of all those coins was hampering trade. Government could not afford to address the issue by coining new coin. The first attempt to address the problem was legislative: the *Muntwet* (Coin Act) of September 28, 1816 established the silver guilder of 9.613 g and the golden ten guilder piece of 6.056 g. The guilder was supposed to become the basis for domestic circulation and silver coins in the denominations 5, 10, 25 and 50 cents and 1 and 3 guilders were introduced. Gold coins of five and ten guilders and copper cents and half-cents completed the range. Because the new coins as defined by the Coin Act would take some time to be produced, old coins were also declared currency (specie). Under this act, gold was overvalued and in practice only gold coins were minted, because their nominal value was higher than their intrinsic value. At the same time, there was no incentive for the public to have new silver coins minted, because the old worn Republican coins were overvalued.[48] This meant that their nominal value was higher than their metal value. New silver coins as defined in the Act therefore did not circulate.[49] The state of the domestic circulation remained problematic. In late 1823 a first intervention took place in which DNB played an important operational role. Low-denomination coins ('*zesthalven*') were taken out of circulation and collected by DNB. This gave DNB a lot of work and was a source of concern. Precisely at the moment when the money market was drained as a result of the Amortisatie-Syndikaat loan, DNB was hoarding these small coins.[50]

The poor state of the coin circulation continued, however. Only after the restoration of public finances by Van Hall, the government could afford to address the issue by means of a total currency overhaul. After withdrawing the old coin, new coin would be re-issued and ultimately gold coin would be demonetised. As in all currency questions, DNB advised the Government in the process, but it also actively supported minting operations such as that in the 1820s, and the currency overhaul in the 1840s. Old coin would be bought by the Government at its silver

[48] Until 1832 only fl 16 million worth of guilder coins were minted, but the overall circulation, consisting of old and worn coin was estimated at fl 100 million. The situation therefore improved little until 1830. But between 1816 and 1847, fl. 172 million in gold coins were minted of which an estimated fl 122 million worth were exported. Korthals (1996), p. 166.

[49] Korthals (1996), p. 163. Though not the old silver specie because these were clipped and worn, and had low intrinsic value.

[50] De Jong I-1, 148ff; Korthals (1996), p. 163.

value. The Government would mint all silver that was withdrawn from circulation into coins that complied with the legal standard.[51] Because coin made up the bulk of the circulation, it was feared that the withdrawal of old coins might 'hamper trade' or, in other words, have a deflationary effect. Therefore, the Minister proposed that DNB should issue banknotes of small denomination to replace the coins that were withdrawn from circulation. Van Hall suggested denominations ranging from 2.5 to 25 guilders and indicated his willingness to adjust the Charter by law to allow this if demand for these notes proved persistent.[52] However, DNB was reluctant for several reasons. Smaller notes would find their way to a wider public, which in itself was not an objective of DNB and a possible source of concern.[53] But DNB restricted itself to practical arguments, for instance: low-denomination banknotes would suffer much more from wear and tear due to more intensive use and, most importantly, convertibility of the smaller notes was not assured. The cover of these notes would consist of the silver withdrawn from circulation. But as that would have to be minted before it could be issued again, it did not constitute adequate cover in the meantime.[54] To sum up, temporary notes were a good idea, but DNB did not want to issue them. Instead, temporary notes should be issued by the Government. To distinguish them from banknotes, they were called differently, first cash notes, and later '*muntbiljetten*' (lit: coin notes). Once this was agreed, DNB actively supported the idea of the currency overhaul and played an important role in the processing of these coin notes. In total fl 10 million worth of coin notes were produced in denominations of fl 500, 100, 20, 10 and 5. The Ministry of Finance had the notes printed, signed them and handed them over to DNB to issue against coins that would be withdrawn from circulation. Between March 1846 and October 1848, the old coins were taken out of circulation.[55] Step by step, coins were withdrawn and coin notes circulated temporarily as a substitute. The two smallest denomination coins remained in circulation longest.

After the reminting of the silver into coin, preparations were made to withdraw gold from circulation. Gold coins of five and ten guilders were still circulating and that could become a problem if the gold price declined. In that case the use of gold coins would become more attractive and might drive silver out of circulation. To prevent that from happening, as soon as the gold price started declining, gold coin was demonetised. Again, coin notes were introduced to fill the temporary circulation gap. DNB facilitated the withdrawal of gold, both through the issue of coin notes, but also by giving the Government an advance in current account on

[51] De Jong I-1, 317ff; Korthals (1996), pp. 174ff; van Gelder (2002), pp. 184–186.

[52] The denominations that were allowed to DNB according to its renewed charter art. 22: fl 1,000, fl 500, fl 300, fl 200, fl 100, fl 80, fl 60, fl 40 and fl 25.

[53] Small denomination bank notes could be used by people unfamiliar to financial affairs, whose behaviour would be hard to predict. On the one hand their possible gullibility could lead to overissue, on the other hand, confidence could be lost without any rational explanation.

[54] 'Letter Bank to Minister of Finance on issuing small denomination banknotes', d.d. 30-7-1845. In: De Jong I-2, doc. 94.

[55] De Jong I-1, 320–322.

collateral of withdrawn gold. Approximately fl 30 million worth of coin notes could be issued. DNB sold the gold as soon as the price development made this profitable.[56] The agreed maximum circulation of coin notes, fl 30 million, sufficed. Still, some fl 10 million worth of coin notes stayed out in circulation until the end of 1853.

When gold was withdrawn from circulation, the coin of largest denomination was the *rijksdaalder* (fl 2.50). The smallest denomination banknote was fl 25. It was considered impractical to have no denominations in between. C*oin notes* were again introduced to fill the 'gap'. These were backed solely by government debt and therefore entirely fiduciary and non-convertible. DNB refused to issue this money, but nevertheless played an operational role in the issue of these coin notes as well.[57]

The Government did not have to press DNB to participate in these operations. It was in DNB's interest to get the currency situation straightened out. As advisor to the Government, DNB played an important role in the decision making process. The state of the coin circulation was relevant for DNB in its efforts to maintain adequate convertibility. Even if it had good coin in its vaults, convertibility could be difficult, because it feared that newly minted coin would disappear from circulation immediately when issued in exchange for banknotes.[58] Considering the backgrounds of the management of DNB, it was not surprising that they took an interest in the monetary circulation. In Amsterdam it had long been accepted that the public bank played a role in stabilising the currency. Although DNB's role as issuing bank was not the same as that of the Amsterdam Bank of Exchange, it was widely accepted—particularly from the perspective of the Amsterdam commercial interests—that a government-sponsored bank should aim to preserve a stable currency.[59] But when it came to issuing money on a fully fiduciary basis, the Bank declined and the Government took this directly upon itself.

[56] 'Letter DNB to Minister of Finance on cooperation in the withdrawal of old silver coins from circulation.' d.d. 5-10-1849, In: De Jong I-2, doc.123. "although we are willing to assist the government in this matter, we must prevent any inconvenience for our proper bank duties."

[57] In fact, this was the first fully fiduciary issue in the Netherlands. Compare: van Viersen Trip (1901), p. 28: This was successful in 1852: No matter how one thinks about the principle of issuing money without cover in specie, the Government did so and continued doing so, supported by the public, that never showed any distrust and continued using the coin notes.'

[58] MB 29-2-1836: "although our specie reserve is still fl 20 million. There are 4 million gold coin that should not be issued now, because of their current high price and 5 million new silver coin that will disappear from circulation immediately if issued." So, in fact the specie reserve that could be used in exchange for banknotes was nearly half.

[59] Because of its different character from the Bank of Exchange, it was not immediately clear what DNB would have to do in order to achieve monetary stability. DNB would not be able to influence international specie movements, but after the demonetisation of gold, it realised it would be able to influence the quantity of money in circulation. From 1852 onward it started to attract all silver that entered the Netherlands (see Chap. 8 below).

Conclusion

The Government, apart from legislation, had few formal instruments to exert direct influence on DNB. And even these few instruments, including legislation, were rarely used until the Bank Act of 1864. Instead, frequent bilateral consultations took place, and only a few times was informal pressure exercised, though never in public. Until the Bank Act of 1864, legislation hardly changed and the Government showed remarkable restraint.

Cashiership to the Government was initially a principal source of funding, potentially making DNB financially dependent on the Government. After 1819, when capital was doubled and as the banknote circulation grew, this dependence faded. After 1839 the Government made DNB deliver its cashiers' services free of charge, but not by means of the Charter renewal, but through informal pressure. DNB refused to branch out throughout the period under study. In currency issues DNB worked closely with the Government. Their objectives were not at odds and the joint action did not arouse the suspicion of the market, because in the Amsterdam money market this was an accepted role for a 'government-sponsored' bank.

The principle of not lending to Government was upheld for two decades. There were several reasons for this. First, DNB said it wanted to avoid crowding out lending to the private sector. Second, the conservatism of the Amsterdam-based Board made it move very carefully. Regarding lending to Government, conservatism may have been wise and prudent, because how far could a government with opaque finances be trusted? So when DNB ultimately did lend to Government it did so secretly, through a middleman. And the amounts remained limited. The King had to find other ways to finance his expenditure and he did. During the 1823 issue of bonds by the Amortisatie-Syndikaat, DNB played a different role by keeping the rate at 4 % in order ensure liquidity in the market and thereby to support subscriptions. This way DNB did make it easier for the Government to tap the wider market. Thus DNB generated greater benefits for the Government than it could have done through direct lending.

The overall picture is that DNB was highly independent from the Government for most of our period. The relatively independent and conservative attitude of DNB is explained by two factors. Firstly, the legal structure protected DNB's independence. Its private nature mainly served to create distance between it and the Government, in other words, to make DNB independent. Secondly, in order to be effective in its role in removing the 'shortage of money', DNB had to be conservative and careful to ensure the continued acceptance of its notes by the public. Sufficient independence from Government was crucial in that respect as well. This seems to have been well understood by both DNB and the Government.

Now we turn to the business of DNB in the first years. Before we look at the credit policy, in our final chapter, the next chapter probes the liability side of the balance sheet, where DNB's role in the payment system originated.

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Chapter 7
DNB's Role in the Payment System (1814–1852)

7.1 Introduction

In the previous chapters we found only limited support for the fiscal theory of central banking explaining the emergence and development of De Nederlandsche Bank (DNB). In this chapter we will analyse the alternative theory that looks at a central bank's role in the payment system. A brief recapitulation of the theoretical perspectives makes clear which questions will be addressed in this chapter. After that the structure of this chapter is briefly explained.

What is here called the payment system theory of the development of central banking is not an existing coherent theory but, rather, a catch-it-all phrase summarising arguments based on economic factors (as opposed to political or fiscal factors). We can be more specific than calling this an economic explanation, because the central bank's economic function in these theories hinges on its role in the payment system. Firstly, all theories as discussed in Chap. 2 regard the emergence of a banker's bank that becomes a centre for clearing and settling payments as the logical outcome of a market process, because banks can economise on their reserves by holding balances at the clearinghouse bank. The debate focuses on whether or not government interference is necessary to make the settlement bank a lender of last resort. According to free banking theory, there is no need for a monopolist note issuer to allow the emergence of last resort lending. In Goodhart's view, government has to step in because of the coordination problems and conflicts of interest that will arise in inevitable moments of instability. Situations of liquidity shortage after a confidence crisis require a lender of last resort that is non-profit maximising and non-competitive. That can only be achieved with government intervention.

In Dutch historiography little attention has been paid to the problem of illiquid markets. De Jong elaborated on the eighteenth century crises, but in the first half of the nineteenth century crises are not clearly identified. Jonker acknowledged that DNB contributed to the stability of the Amsterdam money market in the first half of

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the nineteenth century,[1] but adds that real challenges did not occur.[2] In this chapter we will look at the payment system and DNB's role in it. Firstly, we answer the question of whether the existence of a banker's bank and last resort lending evolved naturally. In particular, we will focus on how banknote acceptance developed and why.

7.2 The Amsterdam Payment System

The payment system in Amsterdam had developed over several centuries. The Golden Age had already seen several important innovations that made the development of the payment system quite unique in international comparison. The famous Amsterdam Bank of Exchange (*Amsterdamse Wisselbank*, AWB), established in 1609, operated a large value payment system and issued an inconvertible, yet remarkably stable currency, the bank guilder. The stock exchange also originated in the early seventeenth century and developed into an important financial centre, attracting savings and generating investment opportunities. Banking developed alongside the commercial business of merchant houses. An army of small-scale intermediaries, like brokers and cashiers facilitated the allocation of savings to investments. A liquid, deep and broad market with low rates of interest also created numerous opportunities for financing foreign investments. Given the inclination of the public to invest in securities directly, deposit banking had not developed in the Netherlands. The institutional infrastructure remained largely the same throughout the eighteenth and into the nineteenth century. The main change was the collapse of the AWB by the end of the century, which caused the servicing of the payment system to shift to the cashiers.[3] During the first half of the nineteenth century, the available means of payment in the Amsterdam market complementary to coin were cashiers' paper and the banknotes of DNB. After briefly outlining the qualitative characteristics of these means of payment, we will assess whether an increasing circulation of fiduciary money introduced problems for the stability of the system.

[1] Jonker (1996), p. 231.

[2] Idem, 186.

[3] This seems to be a case of complementary currencies. Compare Engdahl, and Ögren argue that multiple currencies circulating simultaneously could be interpreted as complementary and make a case that in Sweden note issue by the Riksbank would have been insufficient. See Engdahl and Ögren (2007).

7.3 Cashiers

The domestic circulation of coins in the Netherlands during nearly the entire first half of the nineteenth century consisted of old, often worn (Republican) and foreign coins. This caused great inconvenience and costs, because of the necessary handling and processing. This had been a concern for quite some time, but the Government lacked the financial means to effectively do anything about it. For making large-value payments, especially at a distance, coin was not attractive because of the costs and risks involved. As early as the seventeenth century, the need to reduce transactions costs had led to several innovations in the Amsterdam money market. The introduction of book transfers at the Bank of Exchange had been a safe and efficient way to make large-value payments without cash.[4] The Amsterdam cashiers evolved as a locally oriented payment system complementary to the Bank of Exchange by facilitating cash transactions. In Rotterdam, by contrast, the local Bank of Exchange not only offered book-entry payments but also paid out specie. There the private cashier business also emerged complementary to the local Bank of Exchange. After the Bank of Exchange in Amsterdam had been marginalised, the cashiers became key elements in the payment systems of both cities.[5]

Originally, the cashiers in Amsterdam in the early seventeenth century changed money, thereby facilitating payments in a heterogeneous coin circulation. But over time, cashiers expanded into other services as well, such as cash management, cashing, providing, negotiating and protesting bills, cashing and paying coupons, settling and negotiating advances, trading in securities and monitoring the creditworthiness of their clients' counterparties. For all these services they charged commissions.[6] The cashiers provided important trade-facilitating services by issuing '*kassierskwitantiën* that represent money, and as they can be converted into money at

[4] The Bank of Exchange traditionally focused on facilitating payments on its books in bank guilders. The exchange rate of the bank guilder to the silver guilder was kept stable quite successfully. Part of this success was based on the confidence that the Bank was solvent, even though it never paid out cash. This confidence was supported by the fact that the Amsterdam Bank of Exchange (Wisselbank) formally did not lend and therefore avoided credit risk. In practice, however, it had such large cash reserves that it frequently lent money to the East Indies Company and (to a lesser extent) the City of Amsterdam throughout the eighteenth century. This became a problem after 1780 when the loans could not be repaid. This made the Bank of Exchange more and more vulnerable and eventually it lost its good reputation, which was expressed in a decline of the exchange rate of the bank guilder. Particularly after publication of the state of the Bank of Exchange in 1795, its position in the payment system became more and more marginal. The Bank of Exchange was kept alive until 1820.

[5] Although it would be interesting to broaden the scope of this study to other cities throughout the country, this is not highly relevant to our purpose, i.e. understanding the development of DNB. Also systematic data needed for this analysis is not available.

[6] Jonker (1996), p. 244.

any time, are used as money.'[7] A buyer could pay by handing a 'quittance' on his cashier to the seller. The seller could use this quittance when he had to make a payment himself. Jonker (1992) distinguishes two species of 'kassierskwitantiën' in Amsterdam[8]: (1) The receipt of the cashier declaring that he had received money from a client. Such a paper was issued to a client depositing cash and was comparable to a certificate of deposit like the 'goldsmith note.' (2) The receipt of the client, declaring that he had received money from the cashier. The cashiers signed these quittances, even without specifying an amount. This made it possible for the client to use it to transfer money to a creditor. Such quittances were often based on credit received from the cashier.

The standing of the cashier had to be good, in order to generate confidence that he would meet his obligations. Although this seems to have caused problems only occasionally (see below), it certainly restricted the business of cashiers to local payments. Locally, the cashiers were well embedded in the Amsterdam money market and well connected through a comprehensive, fine-meshed network to all players in the mercantile community.[9] The cashiers netted and settled their quittances daily amongst themselves in order to reduce the use of coin even further. This means that a rudimentary clearing and settlement process between the cashiers had emerged in the market.[10] Thereby payments could be handled much more efficiently.[11]

In the second half of the eighteenth century, issuance of cashier paper increased when cashiers started lending as well. This probably was the result of fierce competition that pushed commissions down so that new revenue sources had to be found. Thus cashiers came to resemble commercial banks in that they combined advancing money with offering current accounts.[12] This had become established practice by the 1770s.[13] Advances showed a rising trend, but funding was precarious and liquidity was a permanent concern. Increasing the deposit base was not

[7] van Hall (1837). This pamphlet was directed against a plan by Santhagen, which proposed a new bank. In savaging the proposal, Van Hall gives great insight in how business worked and what financial arrangements looked like in the late 1830s. He was a lawyer, and his father in law was Jan Bondt, legal counsel of DNB since its establishment. So, he certainly was well informed, but perhaps somewhat biased.

[8] Jonker (1992).

[9] This explains why the whole network of cashiers is sometimes referred to as 'a large courant bank.' Mees (1838), 251.

[10] Van Hall (1837), pp. 17 and 18. 'The cashier usually convene daily at a fixed hour to clear and settle paper amongst each other.' [De kassiers hebben bovendien de gewoonte om iedere dag op een bepaald uur bijeen te komen en de op hen lopende kwitantien over en weer te verrekenen.]

[11] Van Hall (1837), pp. 16 and 17; De Clerq, Woelige Weken, 8: "Clients of cashiers that fail have to pay cash, which is most inconvenient."

[12] Jonker (1996), p. 235: speaks of 'the dawn of commercial banking.'

[13] Luzac (1780).

an option, because savings were invested directly in securities and short-term money was lent on call.[14] Jonker shows that for the Associatie Cassa, the largest cashier, for most of the nineteenth century, advances expanded precisely in line with capital and reserves.

This picture of the development of the cashiers' business matches quite well with the institutionalist description of the evolution of payment technologies. Throughout the eighteenth century the cashiers' development into payment service providers fits the picture of a growing demand for and increasingly flexible supply of money to make transactions. Firstly, the cashiers' fiduciary issue made the money supply somewhat less dependent on the availability of gold or silver. Secondly, as they developed into quasi commercial banks, diversifying into lending as well, the supply of means of payment became even more flexible, because it was credit based, and was not restricted by coin available. At the same time, this flexibility introduced the risk of confidence loss and the need for government intervention to underpin confidence. The main problem of the cashiers was one of scale. Jonker argues that they were unable to attract deposits due to their propensity to invest in securities. Also, their business was often based on personal relations and lacked a solid capital base. Once confidence was lost, a run could take place and leave the cashier out of business, if he ran out of cash. This occurred at least twice. In 1813 a run on a cashier resulted in his failure, according to a contemporary observer due to heavy lending to one client who ultimately defaulted.[15] A similar run took place in 1836 in Rotterdam. The cashier, being the sole creditor to a client, had been unable to stop lending to that client and when the client eventually defaulted, the cashier went down as well.[16]

Unfortunately, neither systematic and comprehensive data on the money stock, nor detailed data on the business of the cashiers is available.[17] Given the small scale of the business cashiers and their large number, it is difficult, if not impossible, to collect comprehensive data on the cashier profession. This lack of data makes it difficult to reliably estimate the size of this market. The number of cashiers at the end of the eighteenth century was 54 and their number declined during the Napoleonic period, as international trade had come to a standstill. By 1813, 16 cashiers were reported to be in business.[18] This does not mean that the total business volume also declined. There may well have been consolidation to increase the scale of operation and make the business less vulnerable. The establishment of the Associatie Cassa (hereafter 'the AC') with a capital base of one million guilders

[14] Jonker (1996), p. 269 explains the absence of deposit banking in the Amsterdam money market by the—willingly facilitated—preference of the public to invest their savings in securities, and the absence of an interest rate spread between lending and borrowing due to the prolongation or on-call market, ensuring the liquidity of securities.

[15] De Clerq (1988), p. 7.

[16] Krans (1977), pp. 140–182.

[17] This is probably why Jonker's (1996) description remains largely qualitative.

[18] Emeis (1966).

in 1806 is clearly an attempt to exploit scale benefits. One of the initiators of the AC was J. Bondt, who was later to be closely involved in the business of DNB as well. After the bankruptcy of an individual cashier in 1813, the remaining business merged with another office into the Ontvang-en Betaalkas (the second biggest cashier).

7.4 DNB's Payment Services

DNB entered the market in 1814, established on the initiative of the King and sponsored by the national government. Yet, DNB was a privately owned bank, and most of the time the Government avoided interfering in its business, so as not to undermine confidence in DNB. How did the new bank's payment business develop?

Figure 7.1 shows the volume of current accounts (ca) and the banknote circulation. Until 1819 current account deposits were the main liability as a result of large government balances. As we saw in the previous chapter, this gave rise to concerns about the independence of DNB. When capital was increased in 1819 and banknote circulation gradually increased, current accounts became relatively less important. Still, the volume of balances in current account peaked three times and was then in fact larger than the banknote circulation (in 1823, 1832/1833 and 1844). Structurally, the banknote circulation was the main source of funding for DNB. But the banknote circulation grew only very slowly until about 1830. Then it stagnated until about 1847/1848 after which it expanded rapidly.

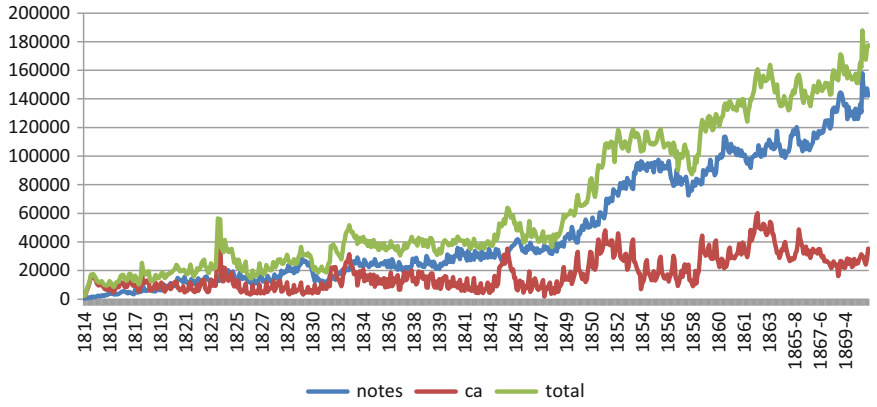

Fig. 7.1 Banknotes and current account balances (in hfl 1,000), 1814–1870 (end-of-month data). Source: historical database DNB, 1814–1870 (for black and white presentation: current account balances are the lowest line)

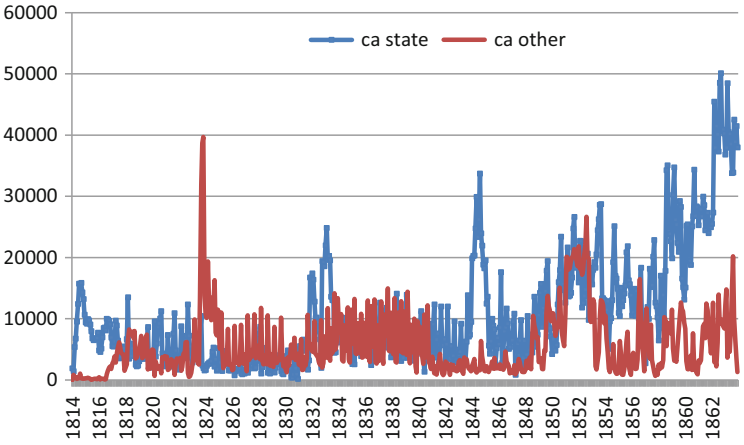

Fig. 7.2 Current account balances of the State (ca state) and others (ca other) (in fl 1,000), 1814–1864 (end-of-month data). Source: historical database DNB, 1814–1870

7.4.1 Current Account Balances

Figure 7.2 shows a breakdown of the current account balances of the State and other clients. Most important in the category 'other clients' were the Nederlandsche Handel-Maatschappij (NHM) and the Amortisatie-Syndikaat (AS). Both were creations of King Willem I. The NHM was intended to monopolise colonial trade and transport. The AS was established to speed up amortisation of the government debt, but it soon turned into a vehicle for financing expenditure from Parliament's perspective.[19]

The spike in balances in 1823 represents tens of millions of guilders accumulated by the AS. In order to start business it was given permission to issue a loan of 94 million guilders. DNB acted as cashier for the AS and received the payments for subscriptions to the loan. This resulted in a peak of more than 50 million guilders in current account at the Bank.[20] The peaks of 1833 and 1844 were relatively smaller and represent one-off high government balances. In 1832 several large loans were issued to finance military expenditures.[21] And the peak of 1844 probably related to the last forced loan that Van Hall pushed through Parliament in order to prevent a 'State bankruptcy'. After 1850, government balances grew structurally as tax revenues increased with economic growth, although in the mid-1850s this

[19] Van Zanden and Van Riel (2000), p. 126.

[20] Riemens (1935), p. 105.

[21] Meijer (1842), pp. 67–75 gives an overview of public loans issued from 1814 to 1840. He mentions two loans issued in 1832: a first one of 138 million guilders and a second one of 93 million guilders.

expansion was interrupted. The temporary increase in the current accounts of others around 1852 was due to expansion of business of the NHM.

7.4.2 *Banknote Acceptance*

The main liability of DNB after 1819 were its banknotes. Figure 7.1 shows banknote circulation of DNB from 1814 to 1860.

Until 1848 banknote circulation showed an upward trend. Spectacular declines interrupted the steady expansion in the second half of the 1820s and after 1830. In 1830, the circulation declined from a peak of 28 million guilders to 12 million at the end of the year. In subsequent years circulation recovered to nearly 30 million guilders in 1834 at which level it stayed for nearly 10 years. The growth of circulation continued until the level of approximately fl 20 million was reached. From 1840 to 1850 circulation doubled from about 20 million to 40 million. After 1850 the circulation of banknotes increased rapidly, up to nearly fl 100 million in the early 1850s. Then growth briefly halted from 1854 to 1857, to pick up again after 1857.

In theory, an important factor explaining the increase of the banknote circulation banknote is economic growth. Growth is characterised by an increase in transactions and thus can be expected to lead to increasing demand for money, including banknotes. Table 7.1 shows annual growth rates of GDP and the stock of banknotes and its growth rate. In the first decade (until 1825) the banknote circulation increased, whereas GDP declined. After 1825, GDP and banknotes both grew, although the growth rate of GDP was much lower than that of banknotes. In absolute terms, GDP was much larger than banknotes in circulation.

In 1815 it was a factor 200 larger (in other words, the value of banknotes was 0.5 % of GDP), but this ratio steadily declined until in 1830 it was about 20. Until 1847 it did not decline further, but after that it dropped quickly: in 1850 it reached 10 and by 1860 it had declined to less than 8.[22]

There is hardly data available on the Netherlands money stock in the nineteenth century. De Jong never discussed non-cash, but it must have been quite relevant even before 1864. Unfortunately there is no complete data on current account deposits at cashiers and at some of the larger bankers. The data provided by Jonker (1996) is fragmentary, but suggests that these were probably relatively modest, in the range of several millions of guilders.[23] Unfortunately, however, this data is fragmentary as well and probably incomplete. For quantification we therefore have

[22] GDP estimates are for the Dutch economy as a whole, while until 1864 DNB only operated in Amsterdam. The importance of banknotes in the Amsterdam money market was larger than this figure indicates.

[23] Jonker (1996), passim gives data on individual firms, e.g. 223 Van Eeghen. But it is impossible to establish an aggregate picture.

Table 7.1 GDP growth and banknote circulation

	Period	Banknote circulation value (fl million) at starting point	Growth (% p.a.)	GDP[a] (% p.a.)
I	1815–1870	1.2	8.9	1.2
II	1825–1870	18.7	4.4	1.4
	Per decade			
A	1815–1825	1.2	32	−1.0
B	1825–1835	18.7	5.9	0.9
C	1835–1845	24.4	2.7	1.7
D	1845–1855	30.5	10.1	2.0
E	1855–1865	93.3	2.5	2.1
F	1860–1870	92.7	5.0	2.1

Banknote data: De Jong I-2, table. 4 T GDP-data

[a]Data from Historical National Accounts kindly provided by E. Horlings. It is important to note that these accounts were not compiled for analysing the business cycle, but rather to generate a basis for understanding the structural development of the Dutch economy in the nineteenth century.

to focus on cash: coins and banknotes, because there is no data available on current account balances outside DNB. For coins several estimates throughout the first half of the nineteenth century are available. On that basis, the share of banknotes in the total money stock can be estimated tentatively.

Estimating the quantity of coin in circulation is difficult for several reasons. The bullion and specie import balance, minting figures and finally the development of cashiers' and bankers' cash reserves are incomplete and non-systematic. For the first half of the nineteenth century there is, in fact, only minting data available.[24] Table 7.2 shows the available estimates.

The differences between the estimates are quite large, but the steady increase of the share of banknotes in the money stock seems undeniable. In the first half of the nineteenth century, coin probably represented the greater part of the cash money stock. The estimates of coin in circulation are combined with the De Jong's data on the banknote circulation. Banknotes remained for the period we consider here, a minor part of the entire money stock. The last estimate, by W.C. Mees (President of DNB) in 1880, probably the best one available, shows that by 1864 the value of banknotes had overtaken the value of coin in circulation. On the basis of these few

[24] The best solution to arrive at a reasonable estimate seems to be to work backwards in time, starting from the best available estimate, deducting positive import and minting balances and correcting for developments in bank reserves over time.

Table 7.2 Estimates of the money stock (millions of guilders, percentages)

Year	Coin (fl million)	Banknotes (fl million)	Money stock (estimated) (fl million)	Banknote share (%)
A: 1795			75–100	0
B: Early 1820s	45–60 (old silver coin)	12		10
C: 1844	88	33	ca. 120	27
D: 1864 1869	92.8 86.5	97.4 128.4	190.2 214.9	51 59

Sources: A. Fritschy (1989), p. 113; B: Riemens (1935), p. 53. Using an estimate by G.K. van Hogendorp; C: Vrolik (1853), uses data derived from the currency overhaul in the 1840s and D: Mees (1882), pp.149–163.

observations it is impossible to say much more, let alone to pinpoint the timing of this development. Clearly, the increase in banknotes constituted a shift in the composition of the money stock. On this sketchy basis, unfortunately, it is impossible to assess whether the rising value of banknotes relative to GDP should be interpreted as a rise in the velocity of money.

7.5 International Comparison

The growth of banknote circulation in the Netherlands is often referred to as slow, but this is the case mainly in light of the fast growth after 1848. One has to compare this development internationally to be able to say whether DNB did better or worse than its peers elsewhere.

Table 7.3 shows an index of the banknote circulation in the UK, Sweden, Denmark, Austria, Belgium and Prussia and an indication of development (1860 = 100) and are uncorrected for price developments, and cannot be compared across currency areas.

Clearly, the slow but steady growth of central banknotes in the Netherlands was relatively unique. Only in Austria did the development of banknote circulation show a similar steady growth pattern with a rapid increase in the 1850s. However, an important difference between Austria and the Netherlands regarded the convertibility of the banknotes, which for many years was a problem in Austria. It is therefore unclear whether the purchasing power of banknotes in Austria increased in parallel with their volume. This is a crucial caveat regarding the expression in local currency, because we have not corrected these figures for price level developments. Still, the pattern is quite interesting. In the UK and Denmark, with long-established circulation banks, the banknote circulation declined until 1840. In Sweden, the Riksbank's note issue fluctuated and showed no clear trend until 1860.[25] Also in Belgium, there were complaints about the slow growth of the

[25] Ögren (2000).

Table 7.3 Index development of 'central bank' banknote circulation in selected countries during the first half of the nineteenth century, (expressed in local currency, 1860 = 100)

	NL	UK	SW	DMK	AU
1815	1	127	51		
1820	8	107	64	95	11
1830	25	86	80	73	24
1840	26	76	72	64	35
1850	48	92	59	77	54

Sources: Netherlands: historical database DNB; UK: Bank of England, (1967), Sweden (unpublished data kindly provided by Klas Fregert); Denmark: Johansen (1985); and Austria (unpublished data kindly provided by Clemens Jobst)

banknote circulation. Perhaps we should acknowledge that a banknote circulation has to grow slowly if it is to be successful. Forced banknote issue may easily lead to overissue with harmful effects on the price level. Considering the gradual expansion of banknote issue in international comparative perspective, DNB did not do so badly.[26]

7.6 Explaining the Development of Banknote Circulation

As was shown above, the overall development of the banknote circulation breaks down into two phases: slow growth until 1848 and rapid growth after 1848.

7.6.1 Explaining the Slow Growth of the Banknote Circulation

To begin with, it is hard to see what alternative to a slowly growing banknote circulation would have been available. Banknotes were never declared legal tender and did not enjoy mandatory currency ('cours forcé'). This meant that the acceptance of banknotes was left to the market, that is, the reputation of DNB. Initially, however, DNB was off to a bad start. The placement of shares was extremely slow expressing the profound distrust of the Amsterdam commercial community, which normally was quite quick to absorb new issues. Jonker calls it 'a boycott'.[27]

[26] It would have been interesting to further elaborate on this comparison, but both price level data and GDP data are unavailable for most countries before 1860. Therefore the picture remains sketchy.

[27] Jonker (1996), p. 172.

Distrust of a government-sponsored bank in the early years was quite understandable, given earlier experiences with issuing banks abroad. The suspension of convertibility of the Bank of England's banknotes was clearly having inflationary consequences domestically, and recent experiences in France and Denmark with state involvement in issuing paper money had not been very good. In France the *assignats* were issued during the Revolution with confiscated Church property as backing. The combination of high government spending and the seemingly limitless backing for *assignats* had led to inflationary overissue in France as well. The *assignats* had not been much of a problem in the Netherlands itself, but this episode must have been well known, given the strong relations between France and the Netherlands. The fact that DNB was established on the initiative of the King and in a hurry, and that it was located in a former government building in Amsterdam, cannot have helped to reduce the fear that DNB would become a vehicle for government finance. The close ties between the King and the management of DNB probably also did not help.

But DNB showed it was managed prudently and remained quite independent. In addition, as was shown in the previous chapter, Government moved carefully from the start so as to avoid damaging the reputation of DNB. That worked to the extent that it contributed to a slow but steady growth of the banknote circulation. This also explains the decline of the banknote circulation after 1830. The collapse of confidence following the Belgian Revolt directly reduced trade and demand for money. The decline of the banknote circulation lasted longer, however. This can be seen as an indication of an awareness of the risk that the government's expenditure on warfare could be a trigger for the Government to abandon the policy of guarding DNB's independence. Interestingly, the start of lending to Government in 1834 coincided with the moment that the banknote circulation had regained its 1830 level. But distrust of the financial policies of the King increased in the late 1830s and the stagnation of the banknote circulation can be seen in this light. The abdication of the King may have helped to dissociate DNB from the Government, but no clear effect can be found in terms of the banknote circulation. More effective was the restoration of healthy government finances by Van Hall in 1844–1845, which gave the public confidence in the Government and, consequently in the government-sponsored bank. The currency overhaul that was initiated soon thereafter, in 1847, showed the Government's willingness to invest in improving monetary conditions and thus lent further credibility to DNB's intentions to serve the public good rather than the King's agenda. All in all, it is quite likely that confidence in DNB translated into a greater willingness to use the banknotes of the government-sponsored bank.

7.6.2 The Marginalisation of the Cashiers

Even though the Charter allowed DNB to make payments by issuing notes and the Charter was exclusive, this did not prohibit the cashiers from issuing their own paper, which was also used for payment purposes. In order not to provoke the

competition by cutting the ground from under the cashiers' feet, DNB was not allowed to offer current accounts to private customers. The cashiers, however, prevented DNB's banknote circulation from expanding more rapidly. As we have seen, the cashiers cleared their mutual accounts on a daily basis. As a result, banknotes also returned to DNB on the same day, because the banknotes were treated the same way as cashier's notes. Even in 1817 it was observed that the circulation could have been larger had banknotes been used in transactions among the public. But that did not happen. Banknotes received were not used for payment, but rather returned to the cashier who would cash it at DNB, the same day or the next. It was noted that nearly 150,000 guilders a day were withdrawn from DNB by cashiers.[28] This practice was still in place in the late 1830s. The President of DNB reacted enthusiastically to the King's proposal (for the renewal of the Charter) to allow DNB to offer current account facilities to private customers. He believed that with unchanged banknote issues the circulation would increase because the notes would stay in circulation longer.[29]

With its scale and its banknotes DNB would be able to outcompete the cashiers, it was feared. Had DNB maintained its non-competitive position of the first 25 years, the banknote circulation would have continued to expand slowly. As it happened, DNB played a part in the marginalisation of the cashiers. Rather than becoming commercial banks, they were pushed back and forced to focus on payment and settlement services for the stock exchange. This process was the result of a combination of three factors: loss of value added of their activities, legal issues and competitive pressure.

The original value added of cashiers lay in their cash management and payment services. This helped to reduce transaction costs, particularly in times when coins circulated in great diversity and varying quality. Not only was money on the books of a cashier easier to transfer, it also did not require weighing, counting and assessing. A daily settlement of positions between cashiers further reduced the need to transfer specie in order to settle payments.[30] The currency overhaul reduced the need for cashier services, because the cash circulation was put on a stable footing under the silver standard and old coin was withdrawn from circulation.

Moreover, the deposit base of the cashiers had never been very strong as in Amsterdam savers invested in securities which were in ample supply. A fine-

[28] Annual Report 1817 (NA Archief DNB, inv. nr. 761) "circulation would be larger if citizens would use our banknotes in their exchanges as well, but they hand them to their cashier and these return them immediately to us. The amount returned to us is approximately 140–150 thousand guilders, and only 6,500 is returned by private customers.

[29] MB 25-4-1838: the President reacted to the King that offering current accounts to private customers would be very useful for the Bank, 'because with the same level of operations, the issue of bank notes will be smaller, and also converting bank notes into specie will be less, while, nowadays, in the daily settlement with the cashiers, bank notes are returned to the Bank quickly.' The President was aware that other members of the Board would be less inclined to compete with the cashiers.

[30] van Hall (1837), p. 17.

meshed network of brokers and *commissionairs* facilitated such investments. And because of the large number of small service providers in the Stock Exchange and the fierce competition among them there was a permanent pressure on commissions. Attracting funds by paying interest on deposits was not possible because there was no interest rate spread in the Amsterdam money market, which eroded the business model for intermediation.[31] Liquidity problems emerged several times, particularly in the late eighteenth century. A bankruptcy of a client or fraud could cause a run on a cashier. The only way to stem a run was to reinforce confidence by paying out unlimited cash to those wishing to liquidate quittances or even to withdraw their balances. There was no alternative.[32] If the run lasted so long that the available cash ran out, a cashier had to suspend payments. But suspension of payments by one cashier could deal a blow to confidence in all cashiers and potentially entailed systemic risk. Although runs in the first half of the nineteenth century were rare (occurring only in 1813 and in 1836) and seem to have remained isolated to individual cases, the failure of a cashier in Rotterdam in 1836 might well have been disastrous for the reputation of all cashiers. The new legislation regulating trade, the Code of Commerce (*Wetboek van Koophandel*) reflected these considerations, to the further detriment of all cashiers.

In the run up to the introduction of a new Code of Commerce (1838) a debate ensued on the reliability of cashiers' services and the desirability of their lending business. The new Code of Commerce defined their role exclusively in terms of payment services. In addition, it stated that the failure of a cashier had to be regarded as attributable only to himself. The Code limited the cashiers' room for manoeuvre by creating uncertainty in the lending business and thus set the stage for the cashiers' marginalisation. The legal base for activities related to lending on collateral, which they had developed in the course of the eighteenth century and which provided a more flexible basis to facilitate trade was removed.[33]

As important as the legal impediments was the pressure on cashiers' commissions, particularly after De Nederlandsche Bank had received permission to offer current accounts to private clients. This was inserted in the renewed Charter of 1839 (see Chap. 5). Originally DNB had been allowed only to hold the current account balances of public, i.e. government-related, entities. This limitation had been introduced for the explicit purpose of avoiding competition with the cashiers and may have contributed to the eventual acceptance of DNB. The Bank was more

[31] Jonker (1996), p. 269.

[32] An example of this can be found in: van Eeghen (1969), p. 225. In 1810: "The Associatie Cassa has to hire three new clerks, because due to distrust, there is a run on its cash. . . .*Of course* (my italics-RU), they are able to pay out to all who want money, and new clients of important houses are gained, because they understand the solidity of the AC."

[33] Taudin Chabot (1863), p. 64. "Discounting sprouted naturally from the desire to make use of the available cash in their reserves." Evekink (1888), p. 28: "Daily cashiers discount important amounts crediting their clients or paying out in cash immediately."

acutely aware of this than the Government, as in the discussion leading up to the Charter renewal, the King proposed to authorise DNB to start this new activity.

When DNB entered the market of the cashiers offering current account facilities to private customers, it did so on conditions that were highly competitive. The Minister of Finance had argued that receiving money in current account should be done free of charge, but the Bank chose a compromise strategy. The Bank set its commission rate for cashing payments at 0.05 %. Of course, DNB could afford to set commissions as low as that because its business model was based on interest income. Cashiers quoted this level of commission only for their largest clients, but DNB did not discriminate between clients, because, DNB argued that would be against its principle of 'supporting trade'.

The cashiers at first petitioned to DNB.[34] When this failed, the cashiers discussed the issue in the course of April and May 1839, but it turned out to be difficult to organise all cashiers. A proposal that all *kassiers* would start issuing notes to bearer (banknotes) and clear them amongst each other was considered to be too dangerous for the credit and existence of the cashiers business.[35] Several cashiers declined to participate for this reason and because of the cost involved. Collective action turned out to be impossible. The Associatie Cassa (the AC), by far the largest of all cashiers, advised by its lawyer Van Hall, then acted alone, although with the passive support of some others.

On May 15 1839, the AC published a declaration[36] that it would start to issue its own notes to bearer, in fixed denominations; clearly real alternatives for banknotes. These would be accepted by most cashiers without charging a commission, but the receipt of payments in banknotes was to carry a 1/16 % commission. De Jong described this willingness to compete rather briefly, and as a desperate struggle of a species threatened with extinction.[37] Still, at the time, this may not have been so obvious. The cashiers had a broad client base and may well have been able to compete with DNB.[38] Also, the fact that the declaration of the AC was not well received by DNB and provoked a strong reaction, confirms that it was far from a meaningless ripple in the sea.[39] The implacable stance taken by DNB when several

[34] De Jong I-1, 276–279.

[35] Emeis (1966), p. 21 on plan Nagels, which was rejected by the cashiers, because they feared that their reputation would suffer from systematic fiduciary issue.

[36] Associatie-Cassa, (1839), 'Circulaire, 22-7-1839.' In: De Jong I-2: doc. 86. "There is a need for a means of payment that facilitates trade and builds up a reserve of cash, preventing it flowing out of the country, now that silver and gold are so scarce. That is why we issue notes to bearer in fixed denominations, in order to facilitate trade, show the utility of the cashiers business and doing so without hurting the interests of our fellow cashiers."

[37] De Jong I-1, 276.

[38] 'Letter from DNB to the Minister of Finance, about establishing a branch in Rotterdam.' d.d. 12-2-1852, (vol. I-2), doc. 140. DNB considered the competitive advantage of the cashiers that they had close relations to their clients and were less tied by regulations.

[39] De Jong I-1, 278.

attempts to mediate between the cashiers and DNB took place (all of them failed, including one initiated by the King) also demonstrates that the stakes were high.

The conflict escalated as DNB decided to exchange cashiers paper for banknotes free of charge. On top of this, DNB resorted to foul play by refusing to accept AC-notes, because they were not stamped. DNB only accepted these notes if a stamp duty was paid. Exemption from stamp duty was a privilege DNB enjoyed which could give it a competitive edge. The AC went to court over this and eventually won, but it did not dare to continue the issue of notes until the court had ruled. The legal uncertainty continued when DNB appealed and still refused to accept AC-notes. By the time the highest court had also ruled in favour of the AC in April 1840, the AC had already given up. The struggle simply cost too much and might have caused the AC's demise. In the autumn of 1839 the Board of the AC even had Van Hall draft a back-up plan in case the AC should fail. The shareholders of the AC decided not to let that happen and the AC gave in. In the negotiations to settle the conflict, DNB agreed that it would no longer exchange cashier quittances for banknotes free of charge. After this the cashiers' paper remained in local use, but banknotes replaced them in most transactions.[40]

After this, DNB reported to shareholders in 1840 that although there was little demand for current accounts by private clients at DNB, it was a good thing DNB offered the possibility, adding with painful irony that "the steady decrease in the number of cashiers made it important for the Bank to offer this service as well, should clients judge the Bank safer." To sum up, the cashiers suffered several blows in a row: their commissions were forced down and their funding options through issuing notes were severely limited. At the same time, their earning assets were restricted by law to facilitating payments at the Exchange. In view of these events, DNB's size and the Government support it enjoyed, this can be seen as a victory of might over right.[41] The outcome of the negotiations to settle the conflict can hardly be seen as a competitive improvement from the perspective of clients, because the Bank agreed to stop exchanging cashier quittances for banknotes free of charge. All in all, DNB no longer had any potential private[42] competition to fear as far as note issue was concerned. So while this was an important step towards central banking by DNB, it was by no means the outcome of a natural process in which a club leader 'naturally' assumes a non-competitive stance. Quite the contrary, DNB had maintained a non-competitive position, where it could have outcompeted the cashiers much earlier, because they were relatively expensive. Its size in combination with its business model that allowed it to fund loans through the issue of banknotes gave it a great advantage. The only reason why this was not done earlier seems to be that the Government appreciated the risk of going against traditional

[40] Jonker (1996), p. 177.

[41] Jonker (1996), p. 177.

[42] Still, the Government issued the coin notes, small denominations that DNB declined to issue. (Coin as always remained a government business).

market habits. Because of its scale and stability, the issue of banknotes by DNB was a step forward.

7.6.3 *Explaining the Rapid Expansion of the Banknote Circulation After 1848*

The basic conditions that explain slow growth of banknote circulation for such a long time had been removed by 1848. But, in addition to the fundamental shifts in the political and market context described above, the currency overhaul provided an opportunity to expand note issue. Notably, the expansion did not coincide with increased lending, but with an increasing metal reserve. During the currency overhaul DNB established itself as the national keeper of the bullion and specie reserves. De Jong attributed the rapid growth of the metal reserves to the demonetisation of gold, but in fact, it had already been going the growth of the metal reserves went hand in hand with the expansion of the banknote circulation ever since 1848. But after 1852 the metal reserve was consciously managed.

DNB started to accumulate silver reserves in 1852, purchasing silver at a fixed price. The price was so high that silver traders found it more attractive to sell their silver to DNB than to have it minted. The traders preferred to exchange the silver for banknotes rather than adding the price to their current account balances. This explains how DNB became the national reserve bank: not through playing a central role as bankers' bank, but by means of banknotes that became the 'reserve currency' for other financial intermediaries. The public started holding banknotes for longer periods of time, apparently taking the fact that they yielded no interest for granted. When in need of liquidity the market would discount at DNB. A new entity in the Amsterdam market, the Crediet-Vereeniging established in 1852, one of the first bank-like institutions in the Amsterdam market, rediscounted bills at DNB in order to increase liquidity. It obtained banknotes that way. DNB's development into a bankers' bank therefore seems to differ somewhat from the theoretical pattern of 'natural' evolution, not going through a process of emerging clearing with banks actively wanting to keep reserves at DNB.

Conclusion
The Amsterdam payment system had become vulnerable to shocks of confidence in the second half of the eighteenth century. Two types of shocks have been identified. Firstly, individual cashiers could face a run which could shake confidence in other cashiers. Secondly, when securities' prices declined, demand for liquidity rose, in order to pay up to maintain adequate margin on advances received on collateral of these securities. This could trigger sales of securities and further declining prices. Because of the small

(continued)

scale and secrecy of firms, and the importance of personal standing, impersonal, anonymous transactions were virtually impossible. Not many firms had a strong capital base and if they did, they did not keep their cash reserves laying idle. DNB was a novelty in both respects.

The circulation of banknotes grew only very slowly and with leaps and bounds until 1848. This had several reasons. Firstly, while DNB's banknotes could be used in payment to the Government, their use was never made compulsory and they were not legal tender. Acceptance therefore depended on the market. When DNB was first established, it was boycotted. It had to tread carefully in a hostile environment, showing that it was independent, that its notes were always convertible in specie and that it could work on an unrivalled capital base. Building up confidence was a slow process that could not be forced ahead. It was made particularly difficult, because the market had developed its own fiduciary money system, namely that of the cashiers. While individual cashiers operated on a relatively small scale and without a large capital base, frequent mutual clearing and settlement enabled them to provide payment services to the entire Amsterdam market. Their vulnerability lay in their small scale and the lack of a secondary liquidity provider. DNB naturally fitted into that role. An important change in the market was the marginalisation of the cashiers. This was not a natural development, but was to a large extent the result of DNB's invasion in their business of offering current accounts to private customers.

All in all, having in the previous chapters rejected the fiscal theory regarding the emergence of DNB, we see that many outstanding issues are resolved by the payment system theory. Although it did not fit the pattern of central banks growing out of a clearinghouse bank, DNB operated on a non-profit maximising and non-competitive basis for the first 25 years. When it entered competition, it drove the cashiers out of the market. DNB's main role was to support the market when it turned illiquid. Only after the currency overhaul and the shift to power of the liberals did DNB become the central keeper of the national bullion and specie reserves. DNB became the de facto monopolist note issuer.[43]

From 1852 DNB did so as a matter of policy, buying silver at a fixed price: building up its reserves and scooping up all silver that flowed into the country. DNB did not as yet become the bankers' bank. One reason for this was that

(continued)

[43] In the Netherlands the debate on monopolisation took place in the 1860s, but that was, by then, a highly academic debate. Wijtvliet (1993), p. 67 calls it 'the professors' debate. Pierson (1884), p. 121, mentioned that the debate in 1863 had not really threatened DNB's position.

cashiers did not have to rely on DNB for liquidity. Only after 1850 did the first signs of a division of labour between DNB and other financial institutions emerge.[44] The Crediet Vereniging of 1852 was not very liquid, and had to rely on DNB for liquidity, which it obtained by discounting its paper. The special arrangement with the Rotterdam cashiers in 1852 was another sign of the emerging division of labour. DNB began to lend to financial intermediaries that were better able to monitor the credit risk of their clients. DNB would gradually withdraw from direct lending to private customers to become the bankers' bank.

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[44] Ziegler (1993), p. 19, 500, mentions that this division of labour had been established in Prussia in the 1830s already.

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Chapter 8
DNB's Credit Policy (1814–1870)

8.1 Introduction

To finish the analysis of the development of business of DNB in the first decades of its existence, this chapter looks at the asset side of the balance sheet of DNB. In the previous chapter I argued that DNB after 1840 became *de facto* a monopolist in issuing banknotes and became the reserve bank of the Amsterdam money market. This chapter analyses what guided DNB's credit policy in the first decades. What agenda can be inferred from its lending business?

The Charter (as discussed at length in Chap. 5) outlines that the general objective of DNB was to 'stimulate trade'. There was no further specification of what this meant. Given the inclusion of a maximum rate of interest, it is safe to assume that it meant that DNB was supposed to lend at moderate rates of interest. The analysis of the annual reports and Board minutes will clarify further what this meant. The Charter established DNB as a private institution, owned by shareholders. As was made clear in the chapter on governance, the main reason why DNB was set up as a private institution was to guarantee its independence from the State. It was not organised in a way that it could be forced by its shareholders to maximise profits. Nevertheless, the profit motive must be borne in mind when looking at the actual interest rate policy. What did DNB do to achieve its objective to stimulate trade?

I begin by outlining the main characteristics and development of DNB's lending business and then I turn to identifying the objectives that drove its credit policy. After an outline of the constraints on lending, I take a closer look at the interest rate. An analysis of both qualitative and quantitative information reveals what drove DNB's interest rate decisions. From data on the business of DNB and some market information a picture emerges of a fairly conservatively operating issuing bank. DNB always maintained convertibility, kept excess reserves and actively used the bank rate to manage the credit portfolio. The Bank also kept a close eye on the liquidity of the money market. I do not find strong evidence that DNB structurally facilitated Government lending directly or indirectly.

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8.2 DNB's Lending

DNB's main source of income was interest income. Until 1864, non-interest income of DNB consisted of commissions, returns on investments of the reserve capital and revenues from trade in specie and bullion. Figure 8.1 shows the share of interest income in total revenues.

The interest earned by the bank on lending averaged 89 % of total earnings over the period 1814–1870 (the red unmarked line in Fig. 8.1). At only a few points in time the share of interest earnings was substantially lower. In the early 1830s there was a temporary upsurge of commissions and bullion trade earnings.[1] In the late 1840s earnings from trade in specie and bullion deriving from the currency overhaul led to a decline in the share of interest earnings below this average. After 1852 the Bank was allowed to engage in *proprietary trading* (to invest its reserve funds in securities) which over time yielded increasing earnings. In fact, returns on invested reserves were the Bank's second largest source of earnings. Overall, however, interest earnings remained by far the largest portion of income and I will focus on lending as the source of income in the remainder of this chapter.

DNB by its Charter was allowed to lend money only for short periods of time, because it had to maintain adequate liquidity at all times. Under its first Charter, DNB was permitted to provide two types of short-term credit: (1) lombarding (lending on collateral of securities, commodities or specie/bullion) and (2) discounting bills of exchange and (after 1839) promissory notes. Figure 8.2 shows the total volume of credit, disaggregated into lombard and discount volumes. From 1814 to 1823 the total volume of credit grew to about 15 million guilders. By the mid-1830s it had increased to over fl 25 million. The slack in the 1840s brought credit volumes down again to levels below 20 million, but from then on steady

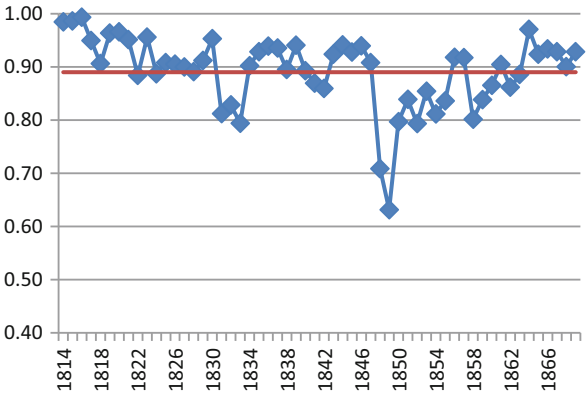

Fig. 8.1 Share of interest income in total DNB revenues 1814–1870 (annual data). Source: database historical data DNB, 1814–1870

[1] This is probably due to gold price changes that created profit opportunities.

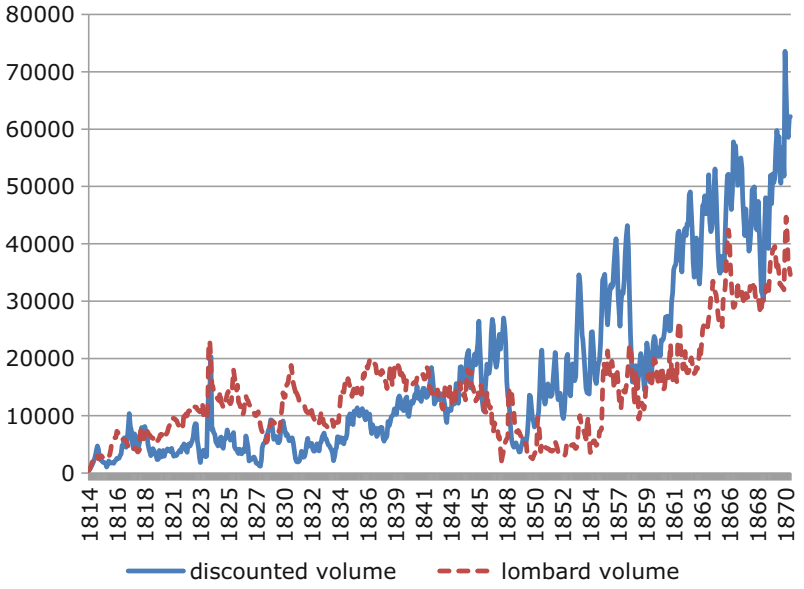

Fig. 8.2 Volume of discount and lombard credit 1814–1870, end of month data (in fl 1,000). Source: database historical data DNB, 1814–1870

growth led to peak levels of 60 million by the early 1850s, reaching 80 million by 1860 and crossing the fl 100 million mark by 1864.

Until about 1840 the volume of lombard loans exceeded the volume of discounts.[2] From that point onward advances on collateral flagged until 1855, when a structural expansion started. The volume of discounts, on the other hand, grew steadily from around 1830. This reflects a structural trend that was interrupted severely by the crises of 1848, 1857 and 1864. Before I analyse the credit policy of DNB I first describe lombarding and discounting.

8.2.1 Advances on Collateral (Lombarding)

Lombard loans were advances that could run up to 3 months, on various types of collateral (securities, commodities, bullion) with normally a *surplus* of 20 %.[3] On the Amsterdam Exchange lombarding was common practice in the first half of the

[2] The literature remains relatively unclear about the reasons for this structural change. It is probably a combination of a relative decline of the importance of the stock market compared to 'real trade'. This is sometimes attributed to the restoration of government finance under Van Hall and the subsequent decline of the interest rate differentials between Amsterdam and money markets abroad, reducing arbitrage opportunities. See Jonker (1996), pp. 109ff.

[3] Jonker (1996), p. 90. This 'surplus' value of the collateral had to be maintained in case of a price decline of the asset.

nineteenth century. This kind of lending was the most common source of liquidity and volumes were huge.[4] The prolongation system was based on the widespread possession of securities.[5] When in need of money, the holder of a security could deposit it with a moneylender, either a cashier, a broker or a wealthy merchant, who lent money on collateral. Prolongation also created leveraging opportunities, because securities held could be used as collateral for a loan to buy more. With a small amount of cash one could build up relatively large positions. After 3 months, lombard credit matured and the loan had to be paid off. In practice, however, rather than being called in the credit was prolonged (rolled over). This was also the practice at DNB.

It is clear that the market for lombarding was very large and DNB had to compete with many others. Unfortunately, there are no comprehensive data on the market which would allow us to put DNB's business into perspective. The following is therefore largely based on the data on DNB's business. It seems that DNB was not necessarily a very attractive lender. Procedures for lombarding at DNB were relatively cumbersome from the start, as every loan required a notarial proceeding to produce the necessary documentation. Although this process was simplified soon after 1814[6] and again with the renewal of the charter in 1839, notaries continued to be involved frequently.[7] Lombards could in practice be rolled over and therefore were frequently not liquidated after the agreed period (normally 3 months maximum). Most advances were provided on collateral of securities. Lombarding on commodities was less common. Lombarding on securities was so widespread because virtually all savings were invested in securities (deposit banking did not exist in the Netherlands).[8]

8.2.2 Discounting

Discounting is the practice of buying commercial paper (bills of exchange) at a discount before maturity. The bill holder obtains cash and the discounter accepts the credit risk. In practice, DNB mitigated the credit risk by only discounting 'high quality' commercial paper, that is, paper bearing three good signatures. This meant that besides drawer and drawee, there was at least one additional acceptor of the bill

[4] Jonker (1996), pp. 96 and 97.

[5] Jonker (1996), p. 91. As the Dutch money market was centralised in Amsterdam and the Exchange, savings and investment funds were brought together in that market. This disintermediated structure was unique for the Netherlands.

[6] De Jong I-1, 88 and 89.

[7] Under the renewed Charter after 1839 the involvement of a notary was no longer obligatory, but it still happened. DNB developed an alternative registration procedure to comply with civil law that required (for debts over fl 100) a dated and signed deed of pledge. DNB's procedure was considered inconvenient. De Jong I-1, 224 and Jonker (1996), p. 257.

[8] Jonker (1996), p. 269.

DNB could turn to in case of non-payment. In principle, all bills of exchange payable in the Netherlands in guilders could be discounted at the Bank, as long as the signatures were known and of houses of good repute.[9]

After the Charter renewal in 1839, DNB also was allowed to discount promissory notes (*promesses*), which did not meet the high quality standards of the triple-signature bill.[10] A *promesse* was a bill with two signatures or commercial paper that was not in the legal form of a bill of exchange, but was functionally identical in that it represented a promise to pay a certain amount at a certain place and time. *Promessen* were discounted at half a percentage point more than bills of exchange, because of the higher credit risk. The share of promissory notes increased gradually, but until 1864 it was never above 30 % of the total volume of discounts. In 1852 and 1855, when substantial losses were incurred on the discounting of promissory notes, the DNB Board declared that these higher losses were compensated for by the higher rate.[11] This perhaps reveals a more risk-neutral attitude after the renewal of the Charter in 1839. The emergence of the Amsterdam Credit Union (*Amsterdamsche Crediet Vereeniging*, 'CV') in 1852 seems to have gradually changed the attitude of DNB with regard to promissory note discounting. The CV was unable to provide high-quality bills, but its prudent acceptance policy and strict monitoring gave DNB confidence that it could discount paper of the CV even though it was a local association of retailers.[12] Lending to the prudent intermediary was more attractive for DNB than engaging in business with its individual members.[13] This way a sort of division of labour emerged between DNB and other intermediaries.

Even though experience apparently convinced DNB that it could afford a more risk-neutral stance and hence increase its output, it felt uncomfortable in pursuing output maximisation. The problem introduced by the possibility to discount other than the best bills of exchange, was that many promissory notes while ostensibly originating from commercial activities ('*schijnbare goederenpromessen*') were in

[9] Until 1889 DNB was not allowed to discount bills of exchange in foreign currencies. Underlying this restriction was the idea that the Bank should facilitate *domestic* trade and industry, and discounting foreign bills would only facilitate capital export.

[10] There were different categories of promissory notes.

[11] National Archive (NA), Den Haag, Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV, entry 2.25.68, inv.nr. *759–800* (for the years 1814–1815–1855–1856) and inv. Nrs. 1101–1114 (for 1856–1857 until 1869–1870). Hereafter abbreviated as AR and the year of publication. This quote comes from Annual Report (AR) 1851–1852 (inv.nr. 796): "Although the losses on unpaid promissory notes were substantial, the higher rate contains a sufficient premium, which even in this exceptionally bad year makes discounting promissory notes as profitable as discounting bills of exchange." A similar statement can be found in AR 1854–1855).

[12] Kymmell (1992), p. 97. Jonker (1996), p. 259ff.

[13] Nationaal Archief (NA), Den Haag, Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV, entry 2.25.68, inv. nr. 2031–2040, d.d. 11-11-1857; Hereafter the reference to the Minutes is 'MB' and the date of the meeting.

fact used to finance trade in the stock market. One of the reasons why DNB declined to discount any but 'real bills' was that it only wanted to support 'real trade' (as opposed to 'speculation' in the stock market). Another reason was that the liquidity of real bills was considered to be better, because the underlying real transaction ensured repayment. Paper that did not originate from a real transaction but was, for instance, written in the stock market, to finance investment, did not necessarily have a finite horizon. Another advantage of real bills was that the *volume* of bills could never become infinite, but would always be limited to the volume of trade.[14] It was, however, difficult to distinguish real from other bills. DNB's 1860 Annual Report mentioned that it was particularly the merchant "houses of lower rank that tried to work beyond their means by borrowing on promissory credit."[15] The Board often rejected such loan requests. It also happened that on expiration of promissory notes, new paper was discounted to pay off the loan, which turned short-term lending into long-term lending. In order to prevent abuse, DNB in 1858 declared that it never negotiated with defaulting clients, but would immediately file for bankruptcy. This appeared to be an effective way to prevent abuse.[16]

8.3 Credit Management: Rationing and Rate Setting

DNB had two instruments available to regulate its lending: it could curtail lending through rationing or it could change the interest rate. First rationing is discussed.

8.3.1 Rationing

In order to keep lending within acceptable bounds DNB resorted to rationing several times in the first decades. Rationing meant that no new loans were granted. DNB resorted to credit rationing on several occasions (see Table 8.1). It did so for lombard credit (on securities and commodities). Existing loans were allowed to stand and expire as agreed, but no new loans were granted. This caused the portfolio to shrink gradually. DNB considered rationing as running contrary to its objectives

[14] The preference of DNB for discounting 'real bills' is expressed repeatedly. From the literature on the Bank of England the 'real bills doctrine' is well-known (see for instance: Fetter 1965, pp. 40–43 where different (contemporary) criticisms are discussed). The real bills doctrine assumes that a credit policy based on only accepting 'real bills' could never lead to over-expansion of credit. This doctrine is fallacious because it overlooks the possibility of price increases: even though the volume of transactions may be limited, the value of 'real bills' could increase because of price increases, as argued by Humphrey (1982), pp. 3–13.

[15] AR: 1859–1860.

[16] AR 1861–1862.

Table 8.1 Credit rationing by DNB, 1814–1860

Date	What was rationed?	Remarks
23 November 1818 until End of January 1819	Advances renewed for 1 month only; no new advances, except after old ones are paid down.	International political circumstances (Congress of Aachen/terms of peace with France) led to demand for financial means (in France) and speculation.
End of December 1825 until early April 1826	All credit longer than 6 weeks	Bad state of specie stock ('*klinkende kas*'), there was not enough good coin available. This problem continued until the currency overhaul.
15 September 1830 until 14 January 1832	Advances	Political turmoil (July revolution/riots in Brussels/State debt obligations) lead to extraordinary export of specie
31 July 1839 until April 1840	Advances	State of specie stock
22 September 1856 until End of December 1856	Refusal to discount paper that may be reasonably suspected to be intended for money demand abroad.	Preventing the export of specie and bullion (measure considered 'harsh and unusual')

Source: De Jong I-1: passim

and feared that outright cancellation of advances might undermine confidence in DNB.[17] The argument of undermining confidence, however, is not entirely convincing in this context. Just before, in 1819 when the capital of DNB was doubled, even though some shareholders were objecting, had argued that the restrictive credit policy in 1818–1819 had instilled confidence in the market. It had allayed fears of DNB succumbing to pressure if being criticised for harsh measures.[18] Perhaps more importantly, therefore, was the fact that DNB considered it against her primary objective to ration credit, particularly when the market was in need of funds.

Every time the Bank rationed it said it considered this incompatible with its main objective of facilitating trade and industry. Since DNB was bound by its first charter to a maximum rate of interest of 5 % for lombards,[19] it had no other option for reducing its credit exposure than to stop lending. After the maximum rate was cancelled under the renewed charter, DNB nevertheless continued rationing until early 1840. DNB was also bound by the Usury Law of 1807 which maximised the lombard rate at 6 %. This law was abolished quickly when the Bank ran into problems in 1857. Clearly, DNB could not act as a lender of last resort as long as it was bound by maximum rates of interest. In 1857, DNB stated that "the only healthy and sufficient measure would be to raise the rate of interest. Those who are

[17] MB 2-2-1824.

[18] 'Advice of member of the Supervisory Board J.H. van Reenen against the proposed doubling of the capital of the Bank. Submitted in the joint meeting d.d. 10-3-1819.' In: De Jong I-2, doc. 21.

[19] Charter 1814, art. 24.

in need of funds will pay the higher price. This measure therefore has less potential to fuel a panic than any other, yet is a better prevention measure than any other."[20] Clearly, the rate of interest was considered a superior instrument to regulate credit. The rest of this chapter is devoted to analysing the interest rate policy of DNB.

8.3.2 The Bank Rate

DNB quoted several interest rates. The diversity of interest rates can be explained by the two lending methods and depended on the risk involved. To begin with, the rates on lombard credits were higher than those for discounting. The lombard rate on domestic securities was the benchmark. The differential between the discount rate of bills and the lombard rate on domestic securities fluctuated between −1 and +2 % points, but stood at 0.5 % point for most of the period.[21] Arguably this reflects the Bank's preference for discounting. Furthermore, the rates also depended on credit risk. The discount rate for bills of the best quality, with three signatures, can be regarded as the base rate. The discount rate for promissory notes, was half a percentage point higher. The same holds for lombard loans on different kinds of collateral (domestic and foreign securities and commodities).[22] Obviously, the higher the risk, the higher the rate will be.

Below I refer to the discount rate for good quality bills of exchange as the 'bank rate'. This was the base rate for the Bank, and it was also the most volatile of the different interest rates DNB quoted. This rate clearly is a policy rate as it was set by DNB and could be changed if deemed necessary.[23] In international comparative perspective DNB's rate was changed much more often than that of other national issuing banks (see Table 8.2). The Bank of England started to change the rate more often than DNB from 1847 onward. But before that time DNB had most changes. The 1860s were a very volatile decade for both banks.

Figure 8.3 shows the bank rate and the prolongation rate. Telling is the fact that the bank rate remained stable for longer periods. The market rate was much more volatile than the bank rate. I also tested whether the historical data of the bank rate (values in the preceding months) explain the market rate (Granger causality) and found this to be the case. Conversely, the market rate did not help to explain the bank rate. This finding applies throughout the 1814–1870 period, but the effect was

[20] MB 14-10 and 11-11-1857.

[21] Only seldom was the lombard rate lower than the discount rate. This happened in 1857 (and 1873) when the discount rate rose so high as to leave the lombard rate behind.

[22] Note that lombarding on specie/bullion and commodities is not discussed here. This business was much less important in terms of both volume and profits. Interestingly, however, the lombarding rate on commodities was generally kept stable, because that was considered to be the most favourable to the commodity trade.

[23] Homer and Sylla also point to the low bank rate in the late 1820s as a possible indication of policy.

Table 8.2 Number of changes in the interest rate per year for contemporary national issuing banks

	NL	UK	PR	DMK	AU	BE	FR
1814	2						
1815	1	0					0
1816	0	0					0
1817	3	0					0
1818	3	0		1	1		0
1819	4	0		1	0		1
1820	0	0		0	0		1
1821	0	0		0	0		0
1822	0	1		1	0		0
1823	1	0		0	0		0
1824	2	0		0	0		0
1825	1	1		0	0		0
1826	2	0		0	0		0
1827	0	1		1	0		0
1828	2	0		0	0		0
1829	2	0		0	1		0
1830	4	0		0	0		0
1831	1	0		0	1		0
1832	1	0		0	0		0
1833	0	0		0	1		0
1834	0	0		0	0		0
1835	0	0		0	0		0
1836	4	2		1	0		0
1837	2	0	0	1	0		0
1838	2	1	0	0	0		0
1839	4	3	0	0	0		0
1840	4	1	0	0	0		0
1841	0	0	0	0	0		0
1842	0	1	0	0	0		0
1843	1	0	0	0	0		0
1844	0	1	1	0	0		0
1845	5	3	2	0	0		0
1846	2	1	3	0	0		0
1847	1	9	1	1	0		2
1848	4	3	2	2	0		0
1849	1	1	0	0	0		0
1850	1	1	0	2	0		0
1851	0	0	0	0	0	0	0
1852	0	2	0	1	0	1	1
1853	2	6	1	1	0	0	1
1854	0	2	1	0	0	0	2

(continued)

Table 8.2 (continued)

	NL	UK	PR	DMK	AU	BE	FR
1855	2	8	1	2	0	0	2
1856	3	8	4	3	1	1	2
1857	8	9	6	3	0	4	8
1858	6	6	5	3	0	4	4
1859	0	5	2	1	0	2	2
1860	0	11	0	1	1	2	1

Diverse sources, national bank histories and overview studies. Available on request

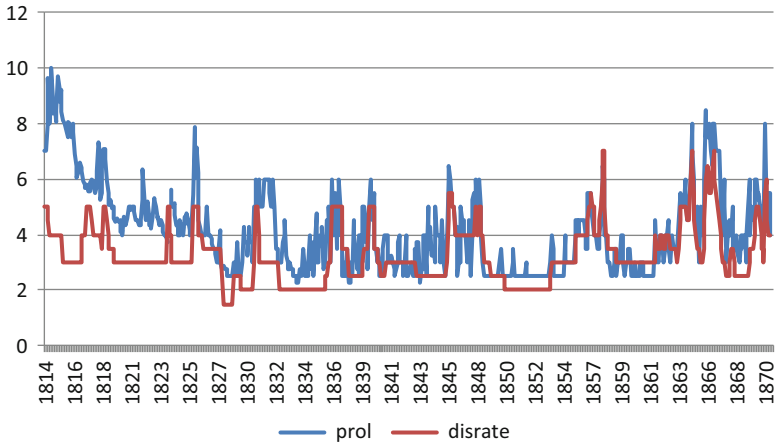

Fig. 8.3 DNB discount rate (DNB) and market rate (prol), (%) end-of-month data, 1814–1870. The prolongation rate is money on-call for short term, normally a month. The data on the prolongation rate were taken from the Amsterdam Handelsblad (1828–1870). The data for the earlier period, 1814–1828, orginated from the Stadnitski Van Heukelom archive and was kindly provided by Joost Jonker. The data for this first period contained four gaps that were intrapolated by taking the average value of the rate before and after

stronger for later sub-periods. From this I conclude that the market rate did not drive the bank rate and that I can study the bank rate as the result of DNB decisions in order to achieve certain objectives.[24]

[24] In order to test on the basis of the market rate and bank rate whether there was causality I tested for Granger causality between the bank rate and the market rate. For the bank rate, the month-end discount rate for good bills was used. For the market rate we used the prolongation rate quoted on the last day of the month. See Appendix 1 for the results of the Granger causality tests.

8.4 Objectives of DNB According to the Qualitative Sources

So, the bank rate of DNB can be treated as a policy rate and that leads to the question of the objectives of policy. In order to identify what factors influenced interest rate decisions of DNB, I first turn to the qualitative sources. What did DNB say about why it changed the bank rate? Motivations for interest rate decisions can be found in three sources: the Charter, the annual reports and the minutes of Board meetings. Firstly, I briefly discuss these sources and then I turn to the motives.

The annual reports and the minutes of Board meetings[25] provide information on the motivation of actual interest rate decisions. Annual reports provide an overview of the business in the course of the year. The targeted readers of the annual report were the members of the Supervisory Board. Two comments have to be made about the annual report. Firstly, the annual reports were written at the end of the book year, with the benefit of hindsight and the Executive Board may have used the report to justify its decisions in retrospect. This means that while the annual reports provide an adequate overview, they may not always contain an accurate representation of the actual reasons for decisions. Therefore it is useful to juxtapose the annual reports with the minutes of Board meetings.

The minutes of Governing Board meetings describe the decision making process and picture the decisions at the time they were made. An important restriction regarding the minutes is that they are far from complete. There are periods for which there are no minutes. These gaps are not explained. So not all rate changes are covered by Board minutes. In some cases the minutes of later meetings refer to discussions held earlier.

The annual reports and minutes for the 1814–1870 period reveal several different motives for interest rate decisions. Interest rate decisions include both decisions to change the rate and decisions to leave it unchanged. Most of the motivations found concern rate changes. Sometimes the motivation of a rate change reveals that an earlier discussion has led to a decision to leave the rate unchanged. Figure 8.3 shows that the bank rate remained unchanged for longer periods of time. As it stated repeatedly, DNB considered it essential to change the interest rate as little as possible.[26] It regarded ‘steadfastness’ and ‘thoughtfulness’ as important for building up a good reputation. The dignity and reputation of the Board itself was at stake: frequent changes in the rate of interest would be interpreted as ‘doubt and lack of

[25] From 1814 to 1821 there are two series of minutes of Board meetings: secret and normal minutes. The secret minutes do no longer exist after 1821. The normal minutes cover the entire period and can be found in National Archive (NA), Den Haag, Secretariearchief, archieven van afdelingen van de hoofdbank en archieven van de bankkantoren van De Nederlandsche Bank NV, entry 2.25.68, inv. nr. 2031–2040. The Secret Minutes have inv. nrs. 2060–2062. Below the reference to the minutes will be MB and the date of the meeting.

[26] AR, 1827–1828.

steadfastness'.[27] After 1848 the phrase used was that extreme changes were to be avoided. Therefore, DNB postponed lowering the rate rather than having to raise it again soon afterwards.[28] Still later, DNB argued that 'in order not to have to raise several times in a row we now raise the rate preventively', adding that it would be able to lower it again if it turned out not to have been necessary after all.[29] Clearly, DNB actively managed the rate, whether or not it led to a change.

The most frequently found motivations for changes in the bank rate are those related to the size of the lending portfolio and the development of the metal reserve. These arguments remain similar and consistent across the entire period. This can be briefly explained on the basis of a simplified DNB balance sheet:

Assets	Liabilities
Metal reserve	Banknotes
Loans	Current account balances
	Capital

On the asset side there are two key elements: the metal reserve of gold and silver bullion and specie and loans (discounts and advances on collateral). On the liability side there are the short-term liabilities (banknotes and current account balances) and capital (share capital). Share capital is not relevant for our purposes. When loans increase, banknotes also increase. On the balance sheet it looks like this:

Assets	Liabilities
Metal reserve	Banknotes +
Loans +	Current account balances

DNB had to keep its banknotes convertible into specie (metal reserve). Convertibility is the ratio between banknotes and metal reserve—so *ceteris paribus* the cover ratio declines when loans increase. In order for a prudent cover ratio to be maintained, an increased circulation of banknotes means that either the metal reserve has to increase, or loans have to decrease. Since buying metal would mean exchanging metal for banknotes, this would not improve the ratio. The only way to improve the cover ratio was to decrease lending. The motivation for raising the rate, therefore, was generally a combination of these two elements: a declining metal reserve, or a rising discount volume. Conversely, the motivation for lowering the rate was that DNB was losing lending business while the metal reserve was growing.

[27] AR 1828–1829.
[28] AR 1848–1849.
[29] MB 31-10-1863.

Interestingly, the profit motive was never explicitly mentioned until the 1860s.[30] It is implicit in the argument that the Bank was 'losing business': given the lower market rate the portfolio was shrinking, it was said.[31] Only later, from 1870, was the profit motive made slightly more explicit, with DNB stating that lowering the rate 'could no longer be postponed', implying it would have preferred to keep the rate high.[32]

Closely linked to the development of lending and reserves were money market conditions. DNB often explicitly mentioned market conditions in explaining rate changes. On the one hand, market dynamics are the result of competition in the loan market. In the summer of 1827, for instance, the market rate dipped below the bank rate. This was a temporary situation, but it provoked a strong reaction from the Bank. In 1828 DNB lowered its rate to an unprecedented 1.5 % and explained this in its Annual Report as a measure to force competitors out of the market.[33] When the rate was raised to 2 % in January 1829 the Bank argued that it had reacted to 'practices of some cashiers' that apparently undercut the bank rate aggressively.[34] DNB considered 1.5 % too low and 'damaging to society'.[35] It feared that such a low rate would stimulate excessive borrowing. After 1828, DNB never lowered the rate below 2 % again. DNB had to stimulate, not over-stimulate trade.

On the other hand, market dynamics could also be adverse, in the sense that liquidity became scarce. This would lead to increasing demand for credit from DNB. Clearly, DNB paid close attention to the development of the interest rate in the money market. When the market became more liquid, demand turned away from the Bank and outstanding loans would be paid down. This would result in loss of business, and in reaction DNB would lower the rate. The Bank coined its own

[30] That this motive was not in the minutes, is perhaps less surprising, than that is not explicitly in the annual reports which were supposed to inform shareholders who obviously would have an interest in profit.

[31] For instance, MB 3-7-48: "The continuing decline of the volume of discounts and advances makes us lower the rate again. We do not expect this change to increase our business, as the market rate is still one and a half per cent below the bank rate. There have been many redemptions because of that, and the main aim of lowering is to maintain the level of outstanding advances."

[32] Perhaps profit became more important after the period I analyse. MB 1-3-1870: "The advances have not diminished rapidly, but having reached a more normal figure, could no longer impede lowering the rate" MB 15-2-1871: "According to the bank's balance sheet, lowering the rate can no longer be postponed."

[33] AR 1827–1828.

[34] MB: 26-1-1829.

[35] MB: 26-1-1829. It was unusual that the Bank faced rising demand in January, because normally the market would be liquid enough after interest payments on the National Debt. Customers coming to the Bank in those times apparently were attracted by the low rate. Why this was considered damaging was not explained any further, but the Bank probably thought it dangerous to lend so cheaply because it could potentially facilitate business with very low profit expectations (taking a high risk of failure into account). The Bank probably regarded such business as 'speculative' and damaging.

strategy: not rowing against the flow, but following the market.[36] Not lowering the rate when liquidity in the market rose, would cause loss of business as borrowers could obtain money in the market at lower rates.[37] These statements are found only in the annual reports, not in the minutes of Board meetings, so perhaps the statements about having to follow the market may just have been a comfortable story to absolve the Board from responsibility. The Board's apologetic phrasing when lowering the rate (which 'can no longer be postponed') could also be explained as a sign to shareholders needing a reason to believe that a lower rate was in their best interest.

Part of the market dynamics was seasonal. There seem to have been two drivers of the seasonal increase in money demand. Firstly, the harvest cycle led to an increase in money demand in the autumn. Secondly, interest payments on government bonds had some impact around June: first, because Government was amassing cash to pay interest and then, after the payment, the market would be highly liquid.[38] It is important to note that DNB focussed on the conditions in the money market, not on any further objective. Macroeconomic considerations were absent.

A final motivation given for decisions on the bank rate was the pressure exerted by the Government to keep the rate low when a loan was issued by the Government or a public body (as discussed in Chap. 6). It was mentioned that although DNB did not lend to the Government directly, the King expected DNB to keep its rate low in times when a (public) loan was to be placed. For securities traders it was important to have the opportunity to use the subscription to the loans as collateral for advances from DNB. This way, a depreciation of the bond could be prevented, because the buyer did not have to sell quickly.[39] In discussions in the Board the President explicitly referred to a promise he made to the Minister of Finance not to raise the rate above 4 % in order to facilitate the placement of a loan by the Amortisatie-Syndikaat in 1823. The Minister later reminded the President of this promise, 'to which the King attached great value.'[40] This motivation was recorded openly in the minutes in 1823, but never afterwards. Keeping the rate low was not a policy DNB could continue infinitely in a tight money market. Demand increased steadily, also for purposes DNB would have preferred not to facilitate.[41] Clearly, I need to see whether the issue of loans by the Government or public authorities had a downward effect on the bank rate.

[36] See, for instance, AR 1838–1839. This 'go with the flow' argument was later repeated regularly in the annual reports in order to explain rate changes.

[37] AR 1827–1828.

[38] AR 1836–1837. When the interest payment took place, the cashiers increasingly demanded specie from DNB.

[39] MB 21-11-1823.

[40] MB 28-11-1823.

[41] MB 28-11-1823. The main concern was that the low rate led to increasing demand for speculative investments among foreigners. It is unclear how DNB knew for what purpose money was demanded. But clearly, if DNB facilitated 'speculation and foreigners', this would not make the King very happy.

All in all, I find that the qualitative sources provide four motivations for DNB policy decisions: (1) keeping the rate stable and low, (2) convertibility, (3) market conditions and (4) supporting the issue of loans by the Government (or broader, any public authority) at a moderate rate. I find no explicit reference to the profit motive or to any macroeconomic objective. DNB operated in the Amsterdam market and focused on its own credit portfolio and balance sheet, but keeping a close eye on shifts in market conditions.

8.5 Quantitative Evidence

Now I will check whether the motives for interest rate decisions identified in the qualitative sources are corroborated by quantitative evidence. In two ways I test what factors explain the interest rate. First, I identify the factors that contribute to the likelihood of a change in the bank rate by estimating an ordered probit model. Next, I derive a rule describing the drivers of interest rate policy by estimating some kind of 'monetary policy reaction rule'. Both methods largely confirm the findings based on the qualitative sources. But before the results are shown, the available data is discussed.

8.5.1 Keeping the Rate Low and Stable

The first motive I found in the qualitative sources was that DNB aimed to keep its rate stable and low. This is also the first impression from visual inspection of Fig. 8.3. The most frequently observed rate was 3 %. Higher rates never lasted very long. The time span between the last rate raise and the moment the rate was lowered was roughly 3–4 months. In the opposite direction (down to next up) the spans are much longer. This suggests a policy that aimed to keep the rate as low as possible for as long as possible. Below, in the ordered probit model, I include the lagged discount rate to see whether stability and keeping the rate low contributed to the likelihood of rate changes.

If the objective of DNB was to keep its rate low, it is interesting to briefly contrast this with the issue of profit maximisation. Whether low rates and profit maximisation can go hand in hand, of course, depends on the elasticity of demand. In order to get some idea about elasticity, Fig. 8.4 shows the annually reported interest revenues plotted against the average discount rate in the same year. The graph shows that high average annual rates coincide with high revenues. This suggests that discount volumes do not decline proportionally with the discount rate. The top left observations are from the first 4 years when the volume was still quite low. The top right observations are from 1856 to 1857 when the rate was exceptionally high, but revenues also reached unprecedented levels. I have to be careful in drawing conclusions from this, however, because correlation is not

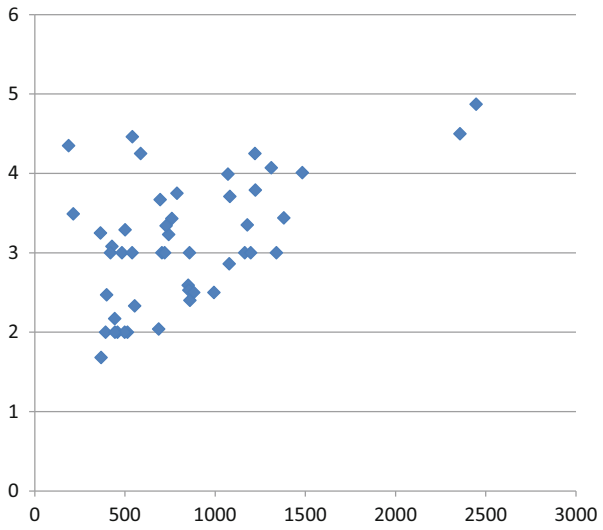

Fig. 8.4 Average annual discount rate (%) against annual interest revenues (in fl 1,000), (1814–1860). Source: historical database DNB, 1814–1870

causation and also because the underlying trend of growing discount volumes over time may distort the picture.

A positive relationship exists between the discount volume and the interest rate adds to the picture of DNB as an institution that did not maximise profit. A profit maximiser would have kept the rate as high as possible for as long as possible, given the fact that high rates coincided with high volumes. The explanation for this correlation could be that DNB functioned as a backstop to the market. If demand could no longer be met by supply in the market, borrowers turned to DNB. Because in a tight market, there would be no alternative, even if DNB raised its rate, its business volumes remained high. Both elements fit the picture of DNB acting as a complement to the money market.

8.5.2 Maintaining Convertibility

The second motive underlying DNB's discount rate policy regarded balance sheet considerations, which can be summarised as maintaining convertibility. Figure 8.5 shows the development of the end-of-month values of total lending, what DNB called 'operating capital' (discounting and lombarding), the metal reserve and the short liabilities (banknotes and current account balances).

Another motive for interest rate changes was the maintenance of a prudent level of metal reserve in relation to short liabilities. The level of metal reserves can be expressed either in absolute values or as a share of liabilities for which they serve as cover. The legally required cover was expressed as a ratio. But in the books of DNB an absolute indicator was used to inform the Board on a daily basis about the

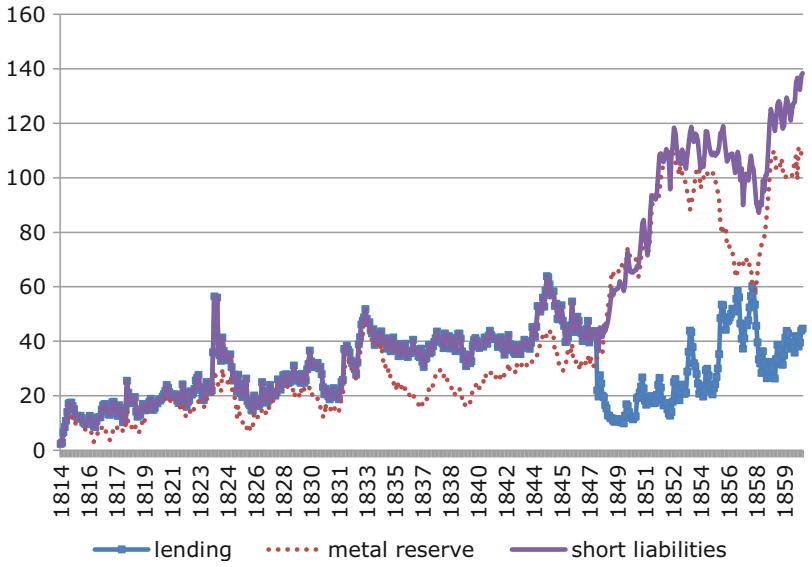

Fig. 8.5 Total lending, metal reserves and short liabilities, 1814–1860 (fl 1000, month-end data). Source: historical data DNB, 1814–1870

'available metal balances' (*beschikbaar metaalsaldo*, BMS).[42] This is the absolute value of the metal reserves that the Bank held over and above the required cover for short liabilities. Normally there is an excess reserve, resulting in a positive balance.[43]

Figure 8.6 shows the movement of the BMS and the discount rate. After 1847 the BMS was calculated on the basis of the legally required reserve. Until 1847 I use 50 % of banknotes and current account balances as a prudent cover ratio, because this was lowest level at which DNB decided to lower the rate (and hence considered it safe enough to do so). Clearly, the discount rate and the BMS move as each other's mirror image: high values for the discount rate coincide with low values for the BMS.

Until 1840 the interest rate was raised to 5 % when the BMS reached a certain minimally acceptable level (in the graph about zero), but in the 1840s this pattern becomes less clear. In November 1840 the BMS was still growing, while the rate was raised. The BMS kept on growing, although the rate was reduced only in April 1842. In 1846 an unprecedented 5.5 % rate of discount was set, following a rapid decline in the BMS even though the BMS had not reached zero.[44] In the first half of

[42] de Kat (1916), p. 200: gives this definition.

[43] DNB cover ratios seem to have been high in comparison with other national issuing banks as well.

[44] Before 1847, there was no legal minimum reserve requirement. We assume it to be 50 %. Since the BMS calculated on the basis of the legal cover ratio never came even close to zero (although

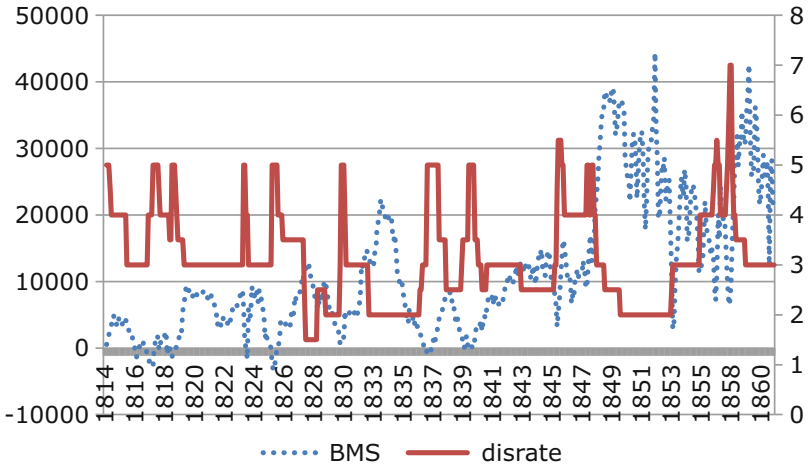

Fig. 8.6 Disposable metal balance (left axis, in fl 1,000) and discount rate (right axis, in %) (end of month data), 1815–1870. Source: historical database DNB, 1814–1860

the 1860s the rate was not raised over 4 % whereas the BMS went as low as zero. The legally required cover had become restrictive. The banknote circulation had grown to over fl 100 million and everything above 100 million had to be fully covered. But at the same time, the metal reserve was very large in absolute terms. Therefore, the relaxation of the legal cover ratio in 1864 was warranted.

Perhaps due to the increase of the absolute value of the metal reserve after 1848, it was possible for DNB to gradually relax its concerns over the cover ratio. Figure 8.6 shows the landmark shift after 1848. Banknotes grew hand in hand with the metal reserve, while total lending declined. The growth of the metal reserve started in 1848 with the currency overhaul, hand in hand with bank note circulation. As was mentioned in the previous chapter, after 1852, the Bank started to buy silver at a fixed high price aimed at attracting all available silver in the Dutch market. Before 1852, the Bank had occasionally traded in gold and silver for a profit (buying when cheap and selling when prices were high). From 1852 onward, however, it actively strengthened its reserves. This new policy had the effect of centralising the metal reserves of the Netherlands with the Bank.[45] From then on the position of DNB had changed, as we saw in the previous chapter.

the rate was sometimes even higher than 5 %), the assumed prudent cover ratio of 50 % for the period before 1847 is probably too high.

[45] The ambition to regain a position in the world bullion trade had lingered on for a long time in Amsterdam. Until the 1830s plans were developed to establish a giro bank like the defunct Bank of Exchange. But Amsterdam had to acknowledge that the world had changed, that the Netherlands was no longer by any means the centre of world trade and that the bullion trade was complementary to Amsterdam's role as a trading centre rather than the root cause.

8.5.3 Market Conditions

The main indicator for market conditions is the prolongation rate. Ideally, I would have wanted to compare DNB's discount rate with a market discount rate. However, a market discount rate, was however, neither quoted in the price journals nor referred to in the sources of DNB for our period. The prolongation rate is, therefore, the best available indicator for money market conditions. As Fig. 8.3 above showed, the prolongation rate was much more volatile than the bank rate.

During the first decade after 1814, the prolongation rate showed a steady decline, testifying to improving liquidity conditions in the Amsterdam money market. Jonker observed that in the 1830s the development of the bank's business became more closely aligned with market developments.[46] During the late 1830s and early 1840s the bank rate was higher than the market rate only when the latter declined faster. Normally, however, DNB clearly tried to keep its rate low and only when the market changed rapidly, it did not succeed. In 1857, the bank rose above the market rate, when serious problems forced the bank to raise the rate to an unprecedented 7 %.[47] Interestingly, DNB adjusted the rate downward after the crisis of 1857, in line with the market rate. This pattern was repeated when in 1864 the rate was again raised to 7 %, but within 3 month was also reduced again to 3.5 %.

8.6 Did DNB Do What It Said?

To underpin the findings from visual inspection of the data above, that DNB in fact did what it said, I performed two further checks. First, I checked by means of an ordered probit model what factors contributed to interest rate decisions. And secondly, I estimated a monetary policy reaction rule to describe the behaviour of DNB.

An ordered probit model is interesting because it allows assessing the impact of variables on a decision of a discrete nature: the rate can be raised, remain unchanged or be lowered.[48] The factors included in this analysis are balance sheet items (discount volume, metal reserve and notes in circulation), and the value of the discount rate in the preceding month. By incorporating a month dummy, the seasonal effect is also incorporated in our probit model.

[46] Jonker (1996), pp. 124 and 125.

[47] See pp. 124 and 125 above. The Bank did not want to resort to rationing in face of high demand, but could also not raise its rate over the level of 5 % as laid down in the Usury Law of 1807. For this purpose the Usury Law was abolished.

[48] I follow the procedure as set out by Davutyan and Parke (1995), pp. 1099–1112 and Eichengreen et al. (1985).

For the entire period from 1814 to 1870 the following conclusions can be drawn. For raising and lowering the rate[49] a seasonal effect is clear, because some month dummies are significant. Apparently, DNB was more likely to lower the rate in the spring, whereas it was more likely to raise the rate in November and December. This is in line with the statements I found in the qualitative sources. For the discount volume I find that a rising volume increased the probability of a rate rise and decreased the probability of a rate fall. This is also in line with what DNB reported. A high rate in the preceding month reduced the probability of a rate rise and increased the probability of a rate cut. This is in line with a policy of keeping the rate low and stable. Changes in the circulation of banknotes did not have a significant effect on bank rate decisions. Because of the changes in the business of DNB after 1848, as described earlier, I also looked at the period before and after 1848 separately. Before 1848 increases in the metal reserve also have a significant effect on changes in the discount rate. To be precise, an increasing metal reserve made a rate rise less, and a rate fall more probable. All in all, the results broadly confirm the statements made by DNB.

A second check of the stated policy objectives of DNB is performed by estimating a monetary policy reaction function.[50] This is a simple model that describes how a central bank adjusts its interest rate policy instrument in response to developments in relevant objectives.[51] I have to emphasise it is rather the procedure of estimation with a simple description like in Orphanides (2003), rather than the modern content of such a function (with output gap or inflation included). The former seems a convenient procedure, while the latter does not seem appropriate for several reasons. Firstly, these variables were not mentioned as policy objectives by DNB. Secondly, under the then prevailing conditions of a fixed exchange rate and free capital flows, independent monetary policy aiming for macroeconomic objectives, was simply not possible. Thirdly, the macroeconomic variables have an annual frequency and reducing the day-to-day business data of DNB to that frequency reduces them to quite meaningless averages. Annual data was not available to the Board at the time and the Board did not decide on the average annual rate of interest. It is important to use data that was available to the decision-makers at the time.[52]

In order to explain the interest rate of DNB it therefore only makes sense to use information that was known to the Board. The data available to DNB at the time consisted of (1) information derived from its own books (volumes of lending, reserves, credit demand), (2) market information (i.e. the market rate of interest)

[49] The marginal effects of variables explaining the situation that the rate remained unchanged in a given month were not significant.

[50] Orphanides (2003), pp. 983–1022.

[51] Taylor (1993), pp. 195–214.

[52] Orphanides (2001), pp. 964–985 argues that estimating monetary policy rules on ex post data, which were not available to policymakers in real-time, can lead to a very distorted picture of the historical conduct of monetary policy.

Table 8.3 Loans issued by public authorities 1814–1840

	Year	Characteristics	In fl million
1	1815	Forced loan (gedwongen lening)	40
2	1817	Syndikaat-Obligatiën (bonds) 5 %	50
3	1819	2.5 % Integralen (government bonds)	24
4	1820	2.5 % Integralen (government bonds)	8
5	1821	2.5 % Integralen (government bonds)	57.5
6	1823	2.5 % Integralen and Amortisatie-Syndikaat obligatiën (bonds)	116
7	1825	2.5 % Integralen (government bonds)	13
8	1826	Loan for East-Indies (exceptional expenditure), 5 %	20
9	1827	Second Loan for East-Indies	2.7
10	1829	Third Loan for East-Indies	15
11	1830	Loan for cost of warfare, 5 %	14
12	1830	Treasury Bills (Schatkistbiljetten)	15
13	1831	Voluntary loan 6 %	42
14	1831	Second voluntary loan 6 %	23
15	1832	Non-redeemable loan 6 %	138
16	1832	Second Loan (part 1) 5 %	93.5
17	1833	Second Loan (part 2) 5 %	6.3
18	1834	Schatkistbiljetten	9.8
19	1836	Fourth Loan for East-Indies	24
20	1836	Loan for colonies	3
21	1837	Loan for colonies	8.4
22	1838	Loan for colonies	8.5
23	1839	Loan for East-Indies	14
24	1839	Losrenten 5 %	6
25	1840	Loan for East-Indies	5
26	1840	Obligations for Haarlemmermeerproject	8
27	1840	5 %	18
28	1840	Schatkistbiljetten	8

Source: Meijer (1842)

and (3) information on government activity: the issue of new loans and interest payments on loans. I use the cover ratio, the prolongation rate and a dummy for the issue of a loan. For the period 1814–1840 I have found a source that summarises the loans issued by public authorities (Table 8.3).[53]

In order to test whether the loans issued did indeed have a negative impact on the bank rate, as was discovered in qualitative sources, I also include data on loans issued. Because data on the month of issue, which would have been ideal to include, was unavailable, I introduced a dummy in the years when a loan was issued. Taking the absolute value of the loans issued in a year did not improve the results.

This period coincides with the reign of King Willem I and these early years of DNB's existence are particularly interesting since lending at moderate rates at times

[53] Meijer (1842), pp. 67–75.

of issue of public loans may have been precisely the King's motive for establishing DNB. It would of course be interesting to extend this with information for the later period, but so far I have not been able to find proper data.

The monetary policy reaction function I estimated allows to roughly identify the impact of some key variables that influence the interest rate.[54] In Annex 3 the results are reported. The data used closely approximates the historical data available to the Governing Board. The only limitation is that I used month-end data rather than day-to-day data. Estimating the monetary policy reaction function by OLS regression is quite straightforward. The results should be seen as a first quantitative exploration. The first estimation includes the possible impact of loans issued and is therefore confined to the 1814–1840 period. (Model 1 in Annex 3.) All four factors have a significant impact on the bank rate. The cover ratio and the loans have a negative impact, in line with what DNB said. The prolongation rate has a positive impact, in line with the statement that DNB followed the market. These results confirm the findings from the qualitative sources, although the impact of the loans is very small.

The second monetary policy reaction function covers the period from 1814 to 1870. For this period, only the cover and the prolongation rate are included (see Model 2 in Annex 3). Both are significant and carry the right sign. This confirms the motives given by DNB itself and shows that DNB's credit policy was that of a conservative issuing bank striving, in the first place, to maintain convertibility and to follow the market carefully. Clearly, our model can be improved in several ways, but the first tentative results are encouraging. They indicate that DNB's interest rate policy was related positively to the demand for credit and the market rate and negatively to the cover ratio, and that the issue of loan(s) had a downward effect on the discount rate. The impact of loans on the bank rate is not very large nor is it consistent.

Finally, I estimated the monetary policy reaction function for the lombard rate (Model 3 in Annex 3), because that was the rate the King asked DNB in 1823 to keep at 4 %. Surprisingly, for the lombard rate the loans have a positive sign! That clearly does not support the hypothesis that issuing loans by the Government had a downward influence on the rate. In fact, it appears to confirm a picture with loans pushing up the market rate and driving demand towards DNB, rather than one of DNB keeping its rate low deliberately. I found only one reference to a request by the King to DNB to keep the rate low. This indicates that keeping the rate low at times of issuing public loans was not systematically part of DNB's interest rate policy. It also further adds to the picture of DNB being a complement to the money market, a lender of last resort, if you like, rather than for fiscal purposes.

[54] In Appendix 1 the data and the methodology are more elaborately discussed. I used the historical data as much as possible and did not make the methodology more complex than OLS regression, so that the results should be seen as a first quantitative exploration.

Conclusion

This chapter intended to identify what policy objectives DNB pursued with its credit policy. Was DNB a profit maximiser, or did it pursue a public policy objective? And if the latter, what policy objective? According to its Charter DNB's objective was to 'stimulate trade'. From a modern perspective it is tempting to read more into this: stimulating sounds like something the Government could do to boost a depressed economy. Stimulating trade should not be read as monetary policy in the modern sense. Given the fixed exchange rate and free capital flow, the bank could not pursue anything like a modern monetary policy.[55]

In order to understand the development of DNB as a central bank, modern concepts in a nineteenth-century context may sometimes be misguiding. DNB did not pursue macroeconomic goals. It played a complementary and useful role in the Amsterdam money market. It had no control over that market, and had to tread carefully. Lending was the main source of income for DNB. It earned interest over the advances on collateral and discounts. It did so in a competitive market where borrowers normally had options. But when market conditions turned sour, DNB continued lending. When business volumes increased to where DNB found its note issue expanding too much in relation to its metal reserves, it had to take measures to limit lending. This was done by raising the interest rate. As long as there was a legal cap on the interest rate, growing demand forced DNB to ration credit: it would rather have continued to lend at higher rates. After 1857, when the last legal limit on the rate of interest was removed, DNB no longer rationed credit (in the period under discussion).

The bank rate was considered as the best instrument to manage credit. In order to facilitate trade DNB kept its rate low and stable in normal times. Clearly, market conditions determined much of the demand for credit at DNB and DNB reacted quite mechanically to changing market conditions. Still, even though DNB acted fairly conservatively, this mitigated the deflationary consequences of 'scarcity of money'. The stability of the Amsterdam money market was never really tested in the first half of the nineteenth century, but this may well reflect the presence of DNB. Perhaps its benefits could have been greater, had the acceptance of banknotes grown more quickly. But could DNB be trusted while King Willem I was in power? He had established DNB as an institution along the lines of Gogel's proposal, aiming to prevent deflation, but also with a fiscal motive which became apparent in 1823. It was due to DNB's high level of independence, that it managed to resist the

(continued)

[55] I have not analysed the macroeconomic implications or effects of DNB. This was not my purpose.

King. It did not keep the rate low for long. Early in 1824, after the Amortisatie-Syndikaat's loan had been issued, the rate had to be raised to avoid overstimulation.

Prudent management assured that convertibility never became an issue in the nineteenth century, and DNB's large reserves showed that it was clearly willing to forego profit so as to be able to lend in a tight market. Still, until 1848 the reserve was a factor the Governing Board took into account when making interest rate decisions. After 1848 banknotes had become so widely accepted that the metal cover no longer had a significant effect on interest rate decisions. There does not seem to have been a lot of debate on the behaviour of DNB until the 1860s, which stands in stark contrast to the heated debates in other countries. In the US this led to the demise of the First Bank of the United States, while in the UK it resulted in a drastic limitation of the central bank's remit in 1844.) Experiences of overissue and inflation of government-sponsored banks in other countries did not help the case of the central bank. The Dutch case stands out as a fortunate exception. This may be helped by the fact that severe crises did not really hit the Amsterdam money market during the period from 1814 to 1852.

The conclusion is that 'stimulating trade' meant two things: (1) In normal times the Bank should lend at moderate rates and (2) In times of crisis DNB should act as a complement to the market, or, lender of last resort. Raising the rate of interest followed from prudence and generally did not harm profits. If anything harmed profit, it was reducing the rate. Yet keeping large excess reserves was also bad for profit, as lending them out would have generated interest income. Clearly, the Bank never aimed to maximise profits. The analysis of the discount rate policy makes it clear that DNB was setting its own discount rate, but it could not afford to diverge from the market systematically. Competition in lending clearly was strong in normal times. It was especially in times of rising rates (increasing liquidity) in the money market that lending volumes grew at DNB.

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Chapter 9
Summary and Conclusion

This thesis presents an analysis of the extent to which De Nederlandsche Bank (DNB) developed into a central bank during the first four decades of its existence and explains the reasons for that development. In order to address the question of how DNB developed into a central bank, first a definition of a central bank is necessary. Normally central banks are defined by what they do. The defining functions of a central bank in the early nineteenth century were that of being: (1) the monopolist issuer of banknotes, (2) the government's bank and (3) the lender of last resort. The general theoretical picture (outlined in Chap. 2) is that over time, either by political decision or through market forces, the phenomenon and role of a bankers' bank emerged, which towards the end of the nineteenth century became a reserve bank, thus enabling it to play a role in the management of exchange rates under the gold standard. The monopoly of central banks as issuers of banknotes is generally emphasised by proponents of the free banking school. For Goodhart last resort lending is the defining function of a central bank. Lending of last resort required the central bank to give up profit maximisation because it had to hold excess reserves and it had to be non-competitive in order to solve potential conflicts of interest. That is why government should play a role in establishing this central bank function.

Nowadays central banks are responsible for monetary policy, aiming to achieve macroeconomic objectives, such as price stability or full employment and they operate an interbank payment system. The conduct of monetary policy derived from their prior role of the central bank in the payment system, ensuring liquidity in the system. Only after they had become the reserve bank of the system, with the banks pyramiding on the central bank, they could start influencing the money supply. In Goodhart's words: micro functions preceded macro functions. This was clearly also the case for DNB.

Histories of central banking have suffered from three shortcomings. First, theories about the development of central banking have been, and often still are, largely based on studies of the Bank of England, rather than on international comparative analysis. It is, however, very likely that the English case is the

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exception rather than the rule, considering England's political and economic predominance in the nineteenth century. My study aims to contribute to wider international comparative research on the development of central banking. Second, economic theory has had a tendency to take insufficient account of actual historical context and developments. Too often, economic developments are viewed in isolation from wider but relevant changes, particularly those of a political or legal nature. With regard to the development of central banking, in particular, this has led to a time-gap between two periods addressed by competing theories explaining the emergence of central banks and their role. On the one hand, in the pre-modern era lasting up until the early years of the nineteenth century the emergence of large national issuing banks was explained in terms of the Government's desire to abuse the institution for fiscal purposes (cheap lending or creating inflation). On the other hand, it was during the latter half of the nineteenth century (at the earliest) that theories emphasised the role of central banks as lenders of last resort in response to market failure in the banking system. But what can be said of the development of central banking in the intervening period from the early to mid-nineteenth century?

My study contributes to the understanding of the development of central banking by adding a case study that spans the missing years of the first half of the nineteenth century—a period for which I think more comparative work needs to be done. The Dutch case is interesting as an example of a relatively small and open economy that underwent fundamental political and economic changes during the decades leading up to 1860. In Chap. 3 the main political and economic developments in the Netherlands from 1800 to 1860 were discussed. Two key political institutions emerged in those years: a constitutional monarchy and the unitary state. In addition, the constitution of the Netherlands underwent dramatic change in this period, progressing from autocratic to democratic rule. On the economic front, it was during these years, in particular during the liberal decades from 1840 to 1860, that the foundations for later modern growth were laid. Elsewhere economic growth accelerated from the 1840s onwards and the Dutch economy stagnated precisely then. What furthermore set the Dutch financial system apart from its European counterparts was the breadth and depth of the money market centred on Amsterdam, as well as the relatively late arrival of commercial banking in the Netherlands.

In Chap. 4 I have analysed the establishment of De Nederlandsche Bank (DNB). The establishment of DNB was the first step in King Willem I's ambitious programme to promote economic development in the Netherlands. An overview of the theoretical literature and international comparison indicate that there are two reasons for establishing national banks. The first of these is 'fiscal' in nature, identifying the introduction of a national bank as a means towards helping a government obtain cheap finance. The second reason is to address shortcomings in payment systems. In fact the establishment of DNB was the result of a combination of both these factors. Indeed, earlier problems with the payment system—'scarcity of money' (with its deflationary effects)—had already led A. Gogel to propose the foundation of a national bank even before the turn of the nineteenth century. Nothing came of his proposal because at the time executive power at the national level was insufficient to overcome resistance to the idea from different

sides. Later, Willem I's autocratic powers (under the unitary state) were sufficient to push through the foundation of a national bank. To make the proposal interesting for himself, however, the King adjusted the original provisions of the payment system to fit his personal ambitions for the country, thus making it possible for DNB to support government finance (a fiscal role). This way the establishment of DNB can be regarded as a joint production of the private interest of the King combined with the public good in the support to the payment system.

Chapters 5–8 present an analysis of the development of DNB after its establishment in order to see whether it met its objectives. DNB was initially chartered as a private company for a period of 25 years, which made it independent of the Government. The governance of DNB is discussed in Chap. 5, where the conclusion is drawn that DNB was not a private company focused on benefitting its shareholders, but, instead, to safeguard its independence from the Government. The influence of shareholders in DNB was in fact limited. For example, they had no possibilities for pushing for higher dividends. The bank was managed largely in an autonomous fashion, for the most part free from either shareholder or government influence. The management of the bank remained in office for long periods of time and accountability was limited. Indeed, DNB only started publishing its balance sheet in 1852; before that its business performance was a secret. Only the members of its supervisory board received an annual report. Ordinary shareholders only received dividend.

Contrary to expectation, however, DNB proved of little use to the Government from a fiscal perspective (see Chap. 6, which examines the relationship between DNB and the Government). DNB serviced payments and receipts for the Government in Amsterdam, and it administrated the Amsterdam current accounts for public authorities. That made DNB the Government's cashier, but not yet the Government's banker, because that would mean lending to the Government as well. The credit facility that DNB was willing to provide was limited, certainly compared to that of the Bank of England. The principle of not at all lending to the Government was honoured by DNB for two decades. Even after 1834, DNB's lending to the Government remained fairly limited, both in the light of developments in government expenditure and as compared to the extent to which other means of financing expenditure were used by King Willem I. Once, in 1823–1824, DNB was explicitly asked by the Minister of Finance, on behalf of the King, to facilitate the issue of a very large loan issued by the Amortisatie-Syndikaat, by keeping its lombard rate at a moderate level of 4 %. That way subscription to the loan was facilitated, because subscribers had relatively cheap access to liquidity. There was no money in the market to be borrowed because the subscription payments had drained the market. This was the only instance I found in the source material that DNB actually took to the desires of the King into account when deciding on the rate. The quantitative evidence analysed in Chap. 8 do not show clear effects on the bank rate during the reign of Willem I. Taking everything into account, although the fiscal motives may have been important in the establishment of DNB, the practical outcome in terms of fiscal facilities to the Government when DNB was in business were fairly limited during the period I analysed.

There are several explanations for the limited fiscal use of DNB by the Government. To start with, DNB was chartered as a private company for a period of 25 years, which made it independent of the Government. It was only allowed to engage in short-term lending, so long-term finance was out of ruled out from the very start. Furthermore, DNB's central objective was 'to stimulate trade'. Lending to the Government entailed the risk of crowding out lending to the private sector. Also, some degree of conservatism of the Amsterdam-based board may have played a role. DNB had to tread carefully in the Amsterdam money market. Distrust of the Government was hardly surprising under an opaque financial administration and given fresh memories of the state's default in 1810. Perhaps more surprisingly, the Government respected DNB's independence. Even though it did have several formal instruments at its disposal for exerting direct influence on DNB, the Government rarely used them. For instance, the bank's management was appointed by the King. Would the King have wanted to do so, he could have changed the Bank's Governing Board within 3 years of the bank's founding, but this never happened: members of the Governing Board stayed on until they decided themselves to step down. Apparently, the Government was well aware of the impact of overt interference on DNB's reputation and effectiveness, hence the remarkable restraint shown.

Since the actual fiscal benefits for the Government were not very large, the question remains as to what DNB's objective actually was and for what purpose the Government refrained from interfering in DNB. DNB's charter broadly stated that it had to 'facilitate and stimulate trade.' What did that mean? Even though the Government tried repeatedly to force DNB to open up for business outside Amsterdam, DNB refused to branch out until 1864. Until that time the only activity in which it was really cooperative with the Government was the area of currency operations, initiated by the Government.

DNB's role beyond its role as cashier in the payment system has been analysed in Chap. 7. DNB's business was defined as short-term lending, funded mainly through the issue of notes, a concept developed by Gogel at the end of the eighteenth century. The Amsterdam payment system had become prone to shocks to confidence in the second half of the eighteenth century, bringing with them decidedly negative systemic effects. The main source of liquidity in the Amsterdam market was provided by the on-call money market (prolongation). Harnessing the widespread possession of securities, into which most savings were channelled at the time, liquidity was generated by lending based on collateral (i.e. securities). This proved to be a flexible and successful system, but when prices of securities declined, "due to, for example, war," or revolution, there was an immediate need for liquidity to pay margin calls. That could then force the sales of assets, which would further reduce their trading price. The core functionality of the bank as proposed by Gogel was to prevent just this kind of deflationary spiral. Such functionality was also central to DNB's charter: to issue money to solve problems of money shortage by acting as a kind of 'lender of last resort' to the Amsterdam money market. Against this background, 'to stimulate trade' meant primarily to support the money market by continuing to lend during shocks to confidence. Due to the small scale of the cashiers, they were unable to increase their lending very much. Therefore, the

supply of money was relatively inelastic. DNB's scale and Charter for combining lending with note issue, allowed it to make the money supply more elastic. This was a relatively modest role, complementary to that of the money market. In order to be able to fulfil this role, DNB had to maintain ample reserves and have a large capital base, which was precisely what it had. It also had to abstain from competition, which it did under its first Charter.

DNB's ability to play this role depended to a large extent on the acceptance of its banknotes. The circulation of DNB banknotes grew only slowly. There were several reasons for this. First, these banknotes could be used for payments to the Government, but their use was never compulsory and they were not legal tender. Acceptance depended on voluntary uptake in the market. However, the fact that DNB notes were always convertible into specie and that the bank could call on an unrivalled capital base helped over time to build up confidence. Nevertheless, it was a long process that could not be forced. Certainly up until about 1840, the market looked upon DNB with suspicion. Any sign of government interference would have raised fears of depreciation of DNB banknotes and hurt their acceptance.

The fact that there was an alternative means of payment available also helps explain the slow growth of the circulation of banknotes. The cashiers with their current account facilities and mutual clearing processes had improved the Amsterdam payment system and they also lent to their clients. In this manner the cashiers had in a natural way developed their own system of fiduciary money that was more efficient than using coin and which provided a degree of flexibility. Although, individually, the cashiers operated on a relatively small scale and without a large capital base, through their clearinghouse processes they were able to provide payment services to the entire Amsterdam market. Their small scale made them vulnerable, however, particularly because there was always the risk of a run on their cash reserve. A consolidation process in the market for cashiers seems to have been underway before DNB was established, but it petered out. The Government, under the renewal of the bank's charter in 1839, no longer prevented DNB from entering into competition with the cashiers: DNB was allowed to offer current account facilities to private customers. DNB charged much lower commissions than the cashiers and this resulted in a conflict which was won by DNB. Clearly, this was not just a case of 'natural' outcome of market forces, but clearly initiated by the change in the Charter as proposed by the Government. Following Goodhart's logic that it requires government intervention to establish an institution that can act as a lender of last resort, this sounds quite paradoxical. But the Government forced DNB to enter competition. Ultimately scale was decisive, as DNB could afford to continue the conflict, whereas the cashiers could not. The cashiers failed to effectively organise in a club, unable to safeguard their collective reputation. From that point on, DNB was effectively, although not *de jure*, the monopolist issuer of fiduciary money. This first defining function of central banking had become a fact (without explicit privileges supporting it) in 1840.

Soon after, the abdication of King Willem I in 1840 permanently removed any sources of suspicion with regard to DNB. Efforts made to establish a new, liberal

constitution triggered confidence in the Government and, as an extension of that, in DNB as the Government's agent. This paved the way for DNB's accession to the centre of the money market. The final step in changing perceptions about DNB was the currency overhaul that began in 1847. After this, DNB's reputation for being a reliable issuer, was established once and for all and banknote circulation grew rapidly from then on. It emerged as the country's reserve bank after the de facto monopolisation of banknote issue and the currency overhaul undertaken in the late 1840s. By 1852, DNB's activities clearly distinguished it from other financial institutions. It started to consciously amass reserves of specie and bullion by buying silver at a price fixed at such a level that it was more attractive to sell to DNB than to have the silver minted. Its banknotes started to be used by other financial institutions as their own liquidity reserve. This started with the *Crediet-Vereeniging* of 1852, which began lending to its clients, maintaining liquidity through facilities at DNB. All things considered, by 1852 DNB was firmly in position as the central player in the nation's money market. No longer was it just a large complementary body to the market: it was set to become trusted key player.

In Chap. 8, DNB's credit policy has been analysed in order to discover what drove decision-making on its interest rates. Lending by DNB was regulated by its charter: it could discount bills and advance on collateral consisting of securities, commodities or bullion and specie. DNB was only allowed to engage in short-term lending based on collateral of the highest quality, so long-term financing was ruled out from the very start and the assumption of more risk was also impossible. In order not to be sitting around idle when the money market was functioning normally, DNB was allowed to lend at moderate rates of interest, but only for short-term, low-risk loans. In 1828 it went so far as to lower its interest rate to 1.5 % undercutting the market. This policy was abandoned in 1830 as it was in conflict with other responsibilities, which was to prevent 'overstimulation' by lending too much at rates that were too low. Only when, due to the expanding issue of notes, the cover of its liabilities (mainly banknotes) declined to critical levels DNB did raise its interest rate. As long as there was a legal maximum rate of interest, the bank had to ration credit in cases where demand was not curbed at the legal maximum level of interest. After the maximum rate was abolished (in 1857), the bank rate was used to manage credit demand and lending at Bagehotian 'penalty rates' became possible.

DNB had no control over the market, but rather went with the flow. It was not intended that the bank was to maximise profits through taking more risk. Indeed, under the bank's governance structure shareholders did not have sufficient influence to be able to force DNB to increase profits by behaving less risk-averse. In fact, however, the Government forced DNB to take on more risk by allowing it to discount promissory notes (paper of lesser quality than bills that had previously been allowed in discounting) under the renewed Charter. All in all, DNB under the first Charter fits the description of the 'Goodhartian' central bank, i.e. it was non-competitive and did not aim to maximise profits. Under the renewed Charter it became more of a normal commercial bank, entering competition and extending the reach of its lending business.

So, what have I found out about how DNB developed as a central bank? I present my findings here in terms of the three functions mentioned in the definition of a central bank.

(1) During the first half of the nineteenth century DNB was not legally a monopolist issuer of banknotes. I have already argued that after 1840 DNB became the *de facto* monopolist as the cashiers crumpled in the face of competition from DNB, but this did not constitute a legal monopoly.
(2) DNB was the government's banker, mainly with respect to the payment facilities it provided the Government and public authorities. Only to a limited extent did DNB engage in lending to the Government, which made it in this respect more a cashier than a banker to government.
(3) DNB's role as a banker's bank was fairly limited, mainly because there were hardly any banks that were willing to pyramid on DNB. Only after 1852, with the Rotterdam cashiers and the Crediet-Vereeniging, did this division of labour emerge. Interestingly, however, this did not stand in the way of the bank's role as a lender of last resort. The role had been one of DNB's primary objectives from the start, forcing it to keep a close eye on its reserves and convertibility, and accept a modest, complementary role in the market.

Finally, I want to return to the different economic theories on the evolution of central banking. The free banking school explained the emergence of monopolist issuers of banknotes as the outcome of political processes, and historical accident. Clearly to some extent 'historical accident' played a role: it required King Willem I and his autocratic powers to establish DNB—for fiscal purposes. But the fiscal was certainly not the only motive, as DNB was also intended to mitigate the problem of shocks to confidence that could trigger deflation, by providing liquidity should shocks to confidence occur. At the same time, DNB was well aware of the possibility of 'overstimulation' and tried to keep a balance. To be accurate, DNB was not effectively a monopolist issuer of notes; acceptance of its banknotes was not forced upon the market. And despite the fiscal motives for its establishment, the Government did not realise the fiscal benefits envisaged. Rather, the Government was remarkably careful and did not undermine DNB's independence. The market context of the day and the marginalisation of the cashiers can also, to some extent, be said to be the result of historical accident (i.e. misunderstanding of their business by the legislator), but was above all the result of their small scale and vulnerability. All in all, the case of DNB does not seem to provide much evidence to support free banking theory.

In the Dutch case, there is one problem with Goodhart's 'evolutionary' theory to be found and that is his strong emphasis on the specific vulnerability of *banking*. In the Netherlands in the first half of the nineteenth century there were no banks, but still the financial system also needed a lender of last resort. The money market in Amsterdam was vulnerable to shocks to confidence and, at such moments, evaporating liquidity. A large issuing bank could under those circumstances contribute to the stability of the system. Indeed, this should preferably be provided by a government-sponsored bank that was not obliged to maximise profits and otherwise

avoided competition in the market. Interestingly, under its original charter DNB fitted this description well. Under the renewed charter of 1839, however, it was allowed to compete with the cashiers. From 1839 onward it was also allowed to expand business by taking on more risk, by discounting promissory notes. These changes, however, originated with the Government, which promoted competition and reduced privileges. The cashiers failed to organise as a club and were driven out of the market. Clearly, the development of central banking was certainly not just a spontaneous, 'evolutionary' process driven by market forces alone.

The starting point for my research was the challenge to central banking coming from the free banking school. As I concluded DNB was established for fiscal reasons, but also from the point of view that government intervention could improve the functioning of the money market, particularly if faced with liquidity shocks. Throughout the first half of the nineteenth century DNB successfully resisted the Government's attempts to borrow and was able to gradually expand its banking business. All in all, the evolutionary perspective with a positive role for government seems to fit best to the Dutch case. The free banking argument cannot be maintained for the Dutch case. Although distrust of government may prove a fruitful position to take in many debates, it should not stand in the way of open-minded, fact-based analysis. After all, government is part of the fabric of society, so if one aims to understand society, it should not be wished away.

Annex 1: Granger Causality Test, Market Rate & Bank Rate

A Granger causality test on whether the historical values (lagged values) of a variable are helpful in explaining another variable.[1] This is not the same as causality, but without Granger causality, actual (economic) causality is highly unlikely. The results are not so clear when I use one lag; only the null hypothesis that PROL does not Granger-cause DISRATE is significant (F-value > 3.98) at the 5 % level. If I use two lags, both null hypotheses are significant.

1814–1870/2 Lags[2]

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
DISRATE does not Granger-cause PROL	679	7.09810	0.0009
PROL does not Granger-cause DISRATE		8.02764	0.0004

[1] I gratefully acknowledge Bastiaan Overvest's help.

[2] Two lags are chosen on the basis of the lowest value of the AIC information criterion.

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Annex 2: Ordered-Probit Regressions

Using an ordered-probit model the impact of relevant variables on discrete changes in the bank rate can be identified.[3] This analysis identifies the marginal effect of several variables on the probability of one of three possible changes (rate goes down, up or stays unchanged) taking place.

Factors explaining interest rate changes

- Discount rate in the previous month (disrate L1)
- Discounted volume at the end of the month (disvol)
- Banknotes in circulation, end of month figure (notes)
- The value of the metal reserve end of month figure (Metal)
- Month dummies

Below the results are reported first for the entire period from 1814 to 1870, the marginal effects in case of no change, a decline of the rate and then a raise of the rate is shown. Then the same is done for two subperiods, until 1848 and after 1848.

The coefficients estimated are relatively meaningless. What is indicated by a significant coefficient, is that the variable has a significant influence on the probability of the movement of the rate (1 = up, 0 = unchanged and −1 = down).

The results are quite robust. Also with alternative time trends the coefficients and the standard errors remained largely the same (at the same level of significance). Finally, the standard errors have been adjusted for heteroskedacity.[4]

Eichengreen et al. use this methodology to check for profit motive in interest rate decision, assuming that 'asymmetry' in the decisions, might point at profit maximising behaviour if the Bank might be quicker to raise the rate and slower the lower the rate.[5]

[3] I am grateful to Sandra de Pleijt (University of Utrecht) for her help in making these estimates.

[4] No testing for autocorrelation (e.g. Durbin Watson test) has been included.

[5] Eichengreen et al. (1985), pp. 725–745; and Davutyan and Parke (1995), pp. 1099–1112.

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In the data for DNB this asymmetry was not found. This can be because of several reasons. Firstly, of course, because if there is no asymmetry. But, secondly, it is well possible that the asymmetry is not found, because the data is not fit for this purpose. The data used here is monthly data and it might be necessary to approximate interest rate decisions more by using weekly data. So, no conclusion can be derived from this analysis in this way.

Main Results:
- significant effects with the right sign for months in which the rate was raised or lowered for discount volume (+), notes (−) and metal (−). Also the rate the month before (if high) increases the probability of the rate being lowered. Finally there is a seasonal effect as some months have significant effects.
- There are no significant coefficients for months that the rate does not change. These results are not shown below.
- The main difference between the two periods is that in the period after 1848 metal is no longer significant.

Whole Period 1814–1870

```
oprobit dis_rate l.disrate disvol notes metal dmonth*, robust
note: dmonth1 omitted because of collinearity
note: dmonth12 omitted because of collinearity
Iteration 0:   log pseudolikelihood = -362.18971
Iteration 1:   log pseudolikelihood = -314.69159
Iteration 2:   log pseudolikelihood = -313.05899
Iteration 3:   log pseudolikelihood = -313.05275
Iteration 4:   log pseudolikelihood = -313.05275
```

Ordered probit regression	Number of obs	=	624
	Wald chi2(14)	=	99.89
	Prob > chi2	=	0.0000
Log pseudolikelihood = -313.05275	Pseudo R2	=	0.1357

	Robust					
dis_rate|	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
disrate						
L1. |	-.4790642	.0775914	-6.17	0.000	-.6311406	-.3269878
disvol |	.0000466	.0000104	4.49	0.000	.0000263	.000067
notes |	-7.41e-06	6.74e-06	-1.10	0.272	-.0000206	5.80e-06
metal |	-7.04e-06	5.33e-06	-1.32	0.186	-.0000175	3.40e-06
dmonth1 |	0	(omitted)				
dmonth2 |	-.4445657	.2528656	-1.76	0.079	-.9401732	.0510419
dmonth3 |	-.2136878	.2923239	-0.73	0.465	-.786632	.3592565
dmonth4 |	-.2898525	.2424455	-1.20	0.232	-.765037	.185332
dmonth5 |	.2766936	.2250182	1.23	0.219	-.164334	.7177212
dmonth6 |	-.2206024	.2318096	-0.95	0.341	-.6749408	.2337361
dmonth7 |	-.0294706	.2697516	-0.11	0.913	-.5581741	.4992329
dmonth8 |	.0271076	.2741195	0.10	0.921	-.5101568	.564372
dmonth9 |	.1888036	.2783091	0.68	0.498	-.3566723	.7342795
dmonth10 |	.5650707	.2711635	2.08	0.037	.0336	1.096542
dmonth11 |	.7094313	.2570524	2.76	0.006	.2056179	1.213245
dmonth12 |	0	(omitted)				
/cut1 |	-2.943365	.3379032			-3.605643	-2.281087
/cut2 |	.2091545	.3102558			-.3989357	.8172448

```
. testparm dmonth*
( 1)  [dis_rate]dmonth2 = 0
( 2)  [dis_rate]dmonth3 = 0
( 3)  [dis_rate]dmonth4 = 0
( 4)  [dis_rate]dmonth5 = 0
( 5)  [dis_rate]dmonth6 = 0
( 6)  [dis_rate]dmonth7 = 0
( 7)  [dis_rate]dmonth8 = 0
( 8)  [dis_rate]dmonth9 = 0
( 9)  [dis_rate]dmonth10 = 0
(10)  [dis_rate]dmonth11 = 0

           chi2( 10) = 36.80
         Prob > chi2 =  0.0001
```

Factors Explaining Lowering the Rate (Entire Period)

```
. mfx, predict(outcome(-1))
   Marginal effects after oprobit
         y = Pr(dis_rate==-1) (predict, outcome(-1))
           = .06227521
```

variable|	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e|	.0587519	.01064	5.52	0.000	.037899	.079605	3.2476
disvol|	-5.72e-06	.00000	-4.47	0.000	-8.2e-06	-3.2e-06	17136.9
notes|	9.09e-07	.00000	1.08	0.280	-7.4e-07	2.6e-06	48774.1
metal|	8.64e-07	.00000	1.35	0.177	-3.9e-07	2.1e-06	48643.1
dmonth2*|	.0714377	.05138	1.39	0.164	-.029273	.172148	.089744
dmonth3*|	.029931	.04663	0.64	0.521	-.061463	.121325	.089744
dmonth4*|	.0425186	.04209	1.01	0.312	-.039968	.125005	.089744
dmonth5*|	-.0284966	.01945	-1.47	0.143	-.066609	.009615	.091346
dmonth6*|	.0310145	.0373	0.83	0.406	-.042095	.104124	.091346
dmonth7*|	.0036816	.03433	0.11	0.915	-.063595	.070958	.091346
dmonth8*|	-.0032683	.03246	-0.10	0.920	-.06688	.060343	.091346
dmonth9*|	-.0205546	.02653	-0.77	0.438	-.072553	.031443	.091346
dmonth10*|	-.0486489	.01559	-3.12	0.002	-.079208	-.018089	.091346
dmonth11*|	-.0560184	.01339	-4.18	0.000	-.082254	-.029783	.091346

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation:
- A relatively high interest rate in the previous month (t − 1) increased the probability of a downward adjustment of the rate.
- Increases in discount volume lowered the probability of a downward rate adjustment.
- Notes and metal do not have any effect (marginal effect is insignificant).
- There are seasonal effects, because the probability of a downward rate adjustment is higher in April than in March (see coefficient of dmonth4 and dmonth3).

Factors Explaining Raising the Rate (Entire Period)

```
. mfx, predict(outcome(1))
    Marginal effects after oprobit
        y = Pr(dis_rate==1) (predict, outcome(1))
          = .05298567
```

variable |	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e |	-.0517409	.00876	-5.91	0.000	-.068902	-.03458	3.2476
disvol |	5.04e-06	.00000	3.80	0.000	2.4e-06	7.6e-06	17136.9
notes |	-8.01e-07	.00000	-1.08	0.282	-2.3e-06	6.6e-07	48774.1
metal |	-7.61e-07	.00000	-1.32	0.188	-1.9e-06	3.7e-07	48643.1
dmonth2*|	-.0358079	.01503	-2.38	0.017	-.065256	-.006359	.089744
dmonth3*|	-.0200249	.02323	-0.86	0.389	-.065562	.025512	.089744
dmonth4*|	-.0258285	.01777	-1.45	0.146	-.060658	.009	.089744
dmonth5*|	.0357917	.03416	1.05	0.295	-.031165	.102748	.091346

(continued)

dmonth6*|	-.0205908	.01886	-1.09	0.275	-.057563	.016381	.091346
dmonth7*|	-.0031215	.028	-0.11	0.911	-.057992	.051749	.091346
dmonth8*|	.0029806	.0307	0.10	0.923	-.057199	.06316	.091346
dmonth9*|	.0230785	.03834	0.60	0.547	-.052064	.09822	.091346
dmonth10*|	.0873491	.05535	1.58	0.115	-.021134	.195832	.091346
dmonth11*|	.1191946	.06011	1.98	0.047	.00139	.237	.091346

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation:
- Having a relatively high interest rate in previous month (t − 1), decreased the probability to adjust interest rates upwards.
- Increases in discount volume added to likelihood of adjusting interest rate upwards.
- Notes and metal do not have any effect (marginal effect is insignificant).

Subperiod 1: 1814–1848

oprobit dis_rate l.disrate disvol notes metal dmonth2 dmonth3 dmonth4 dmonth5 dmonth6 dmonth7 dmonth8 dmonth9 dmonth10 dmon
> th11 if year<1848, robust
Iteration 0: log pseudolikelihood = -157.06733
Iteration 1: log pseudolikelihood = -120.43821
Iteration 2: log pseudolikelihood = -116.23133
Iteration 3: log pseudolikelihood = -116.19396
Iteration 4: log pseudolikelihood = -116.19396

Ordered probit regression	Number of obs = 371 Wald chi2(14) = 65.51 Prob > chi2 = 0.0000
Log pseudolikelihood = -116.19396	Pseudo R2 = 0.2602

	Robust					
dis_rate|	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
disrate|						
L1.|	-.8235144	.1293436	-6.37	0.000	-1.077023	-.5700056
|						
disvol|	.0001339	.0000305	4.39	0.000	.0000741	.0001937
notes|	.0000135	.000023	0.59	0.556	-.0000315	.0000585
metal|	-.0000755	.0000171	-4.41	0.000	-.0001091	-.000042
dmonth2|	.0665021	.3460111	0.19	0.848	-.6116671	.7446714

(continued)

dmonth3|	.3448664	.4405116	0.78	0.434	-.5185205	1.208253
dmonth4|	-.6249515	.3542898	-1.76	0.078	-1.319347	.0694438
dmonth5|	.413478	.2710201	1.53	0.127	-.1177116	.9446675
dmonth6|	.375054	.2354932	1.59	0.111	-.0865042	.8366122
dmonth7|	-.1390926	.4364011	-0.32	0.750	-.994423	.7162377
dmonth8|	-.0420135	.4169874	-0.10	0.920	-.8592938	.7752669
dmonth9|	-.0215178	.4294892	-0.05	0.960	-.8633013	.8202657
dmonth10|	.2205522	.2463326	0.90	0.371	-.2622509	.7033553
dmonth11|	1.102142	.3396348	3.25	0.001	.4364696	1.767814
/cut1|	-4.767015	.6215498			-5.98523	-3.5488
/cut2|	-.4907684	.497053			-1.464974	.4834376

Factors Explaining Lowering the Rate (1814–1848)

. mfx, predict(outcome(-1))
Marginal effects after oprobit

y = Pr(dis_rate==-1) (predict, outcome(-1))
= .02035121

variable |	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e |	.040466	.01128	3.59	0.000	.018352	.06258	3.14825
disvol |	-6.58e-06	.00000	-2.99	0.003	-.000011	-2.3e-06	8194.49
notes |	-6.64e-07	.00000	-0.61	0.545	-2.8e-06	1.5e-06	19134.1
metal |	3.71e-06	.00000	3.59	0.000	1.7e-06	5.7e-06	21710
dmonth2*|	-.0030907	.01521	-0.20	0.839	-.032903	.026721	.088949
dmonth3*|	-.0127874	.01177	-1.09	0.277	-.03586	.010285	.088949
dmonth4*|	.0520423	.04567	1.14	0.255	-.037479	.141564	.088949
dmonth5*|	-.014572	.00797	-1.83	0.067	-.030188	.001044	.091644
dmonth6*|	-.0136127	.00734	-1.85	0.064	-.028005	.00078	.091644
dmonth7*|	.0076832	.0276	0.28	0.781	-.046413	.06178	.091644
dmonth8*|	.0021384	.02206	0.10	0.923	-.041091	.045368	.091644
dmonth9*|	.0010766	.0219	0.05	0.961	-.041853	.044006	.091644
dmonth10*|	-.0090416	.009	-1.01	0.315	-.026672	.008589	.091644
dmonth11*|	-.0247017	.00907	-2.72	0.006	-.042483	-.006921	.091644

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation
- A relatively high interest rate in previous month (t − 1), increased the probability of a downward rate adjustment.
- Increases in the discounted volume lowered the probability of a downward rate adjustment.
- Notes do not have any effect (marginal effect is insignificant)
- Higher metal reserves increased probability of adjusting its rate downward.

Factors Explaining Raising the Rate (1814–1848)

. mfx, predict(outcome(1))
Marginal effects after oprobit

y = Pr(dis_rate==1) (predict, outcome(1))
= .01288375

variable	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e	-.0273541	.00864	-3.17	0.002	-.044288	-.01042	3.14825
disvol	4.45e-06	.00000	2.63	0.009	1.1e-06	7.8e-06	8194.49
notes	4.49e-07	.00000	0.59	0.553	-1.0e-06	1.9e-06	19134.1
metal	-2.51e-06	.00000	-2.62	0.009	-4.4e-06	-6.3e-07	21710
dmonth2*	.0023486	.01308	0.18	0.857	-.023283	.02798	.088949
dmonth3*	.0158149	.02744	0.58	0.564	-.037972	.069601	.088949
dmonth4*	-.0122859	.00557	-2.21	0.027	-.023195	-.001377	.088949
dmonth5*	.0201844	.01856	1.09	0.277	-.016189	.056558	.091644
dmonth6*	.01766	.01505	1.17	0.241	-.011846	.047166	.091644
dmonth7*	-.0040778	.01133	-0.36	0.719	-.026286	.01813	.091644
dmonth8*	-.0013434	.01276	-0.11	0.916	-.026358	.023672	.091644
dmonth9*	-.0007009	.01367	-0.05	0.959	-.027492	.02609	.091644
dmonth10*	.0089836	.01214	0.74	0.459	-.014819	.032786	.091644
dmonth11*	.0997337	.05871	1.70	0.089	-.015333	.2148	.091644

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation:
- Having a relatively high interest rate in the previous month (t − 1), lowered the probability of adjusting its interest rate upwards.
- Increases in discount volume increased the probability of an upward rate adjustment.
- Notes do not have any effect (marginal effect is insignificant)
- Higher metal reserves decreased probability of adjusting its interest rate upwards.

Subperiod 2: 1848–1870

oprobit dis_rate l.disrate disvol notes metal dmonth2 dmonth3 dmonth4 dmonth5 dmonth6 dmonth7 dmonth8 dmonth9 dmonth10 dmon
> th11 if year>1847, robust

Iteration 0: log pseudolikelihood = -192.67765
Iteration 1: log pseudolikelihood = -163.29645
Iteration 2: log pseudolikelihood = -162.5988
Iteration 3: log pseudolikelihood = -162.59612
Iteration 4: log pseudolikelihood = -162.59612

Ordered probit regression	Number of obs	=	253
	Wald chi2(14)	=	65.12
	Prob > chi2	=	0.0000
Log pseudolikelihood = -162.59612	Pseudo R2	=	0.1561

	Robust					
dis_rate |	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
disrate |						
L1. |	-.4887022	.1224803	-3.99	0.000	-.7287592	-.2486451
|						
disvol |	.000037	.0000119	3.11	0.002	.0000137	.0000602
notes |	-7.12e-06	7.03e-06	-1.01	0.311	-.0000209	6.66e-06
metal |	-.0000123	7.70e-06	-1.60	0.109	-.0000274	2.76e-06
dmonth2 |	-.8350929	.3874684	-2.16	0.031	-1.594517	-.0756688
dmonth3 |	-.6421584	.4242105	-1.51	0.130	-1.473596	.189279
dmonth4 |	-.1463896	.3639523	-0.40	0.688	-.8597231	.5669439
dmonth5 |	.1856639	.3749799	0.50	0.621	-.5492833	.920611
dmonth6 |	-.5404061	.3746719	-1.44	0.149	-1.274749	.1939373
dmonth7 |	-.0326233	.4213081	-0.08	0.938	-.8583721	.7931254
dmonth8 |	.0180033	.393079	0.05	0.963	-.7524173	.7884239
dmonth9 |	.2998184	.4107198	0.73	0.465	-.5051776	1.104814
dmonth10 |	.760685	.4530659	1.68	0.093	-.1273078	1.648678
dmonth11 |	.4825625	.3968283	1.22	0.224	-.2952066	1.260332
/cut1 |	-3.64885	.7453769			-5.109762	-2.187938
/cut2 |	-.9641907	.7314806			-2.397866	.4694849

Factors Explaining Lowering the Rate (1848–1870)

. mfx, predict(outcome(-1))
Marginal effects after oprobit

y = Pr(dis_rate==-1) (predict, outcome(-1))
= .09270123

variable	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e	.0811197	.02291	3.54	0.000	.036214	.126025	3.39328
disvol	-6.13e-06	.00000	-3.14	0.002	-1.0e-05	-2.3e-06	30250
notes	1.18e-06	.00000	1.00	0.317	-1.1e-06	3.5e-06	92238.3
metal	2.05e-06	.00000	1.62	0.106	-4.3e-07	4.5e-06	88137.8
dmonth2*	.2052698	.12541	1.64	0.102	-.040539	.451078	.090909
dmonth3*	.1461101	.12372	1.18	0.238	-.09637	.38859	.090909
dmonth4*	.0262717	.07046	0.37	0.709	-.111833	.164376	.090909
dmonth5*	-.0278273	.05061	-0.55	0.582	-.127022	.071367	.090909
dmonth6*	.1176062	.10213	1.15	0.250	-.082564	.317776	.090909
dmonth7*	.0055114	.07242	0.08	0.939	-.136426	.147449	.090909
dmonth8*	-.0029593	.064	-0.05	0.963	-.128389	.122471	.090909
dmonth9*	-.0421597	.04807	-0.88	0.380	-.136367	.052048	.090909
dmonth10*	-.0828036	.02916	-2.84	0.005	-.139949	-.025658	.090909
dmonth11*	-.0612458	.038	-1.61	0.107	-.135728	.013236	.090909

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation:
- Having a relatively high interest rate in previous month (t − 1), increased the probability of a downward rate adjustment.
- Increases in discount volume lowered the probability of adjusting its interest rate downwards
- Notes and metal reserves do not have any effect (marginal effect is insignificant)

Factors Explaining Raising the Rate (1848–1870)

. mfx, predict(outcome(1))
Marginal effects after oprobit

y = Pr(dis_rate==1) (predict, outcome(1))
= .08685862

variable	dy/dx	Std. Err.	z	P>|z|	[95%	C.I.]	X
L.disr~e	-.0772873	.01977	-3.91	0.000	-.116028	-.038547	3.39328
disvol	5.84e-06	.00000	2.71	0.007	1.6e-06	.00001	30250
notes	-1.13e-06	.00000	-0.98	0.327	-3.4e-06	1.1e-06	92238.3
metal	-1.95e-06	.00000	-1.56	0.119	-4.4e-06	5.0e-07	88137.8
dmonth2*	-.0824715	.02487	-3.32	0.001	-.131212	-.033731	.090909
dmonth3*	-.0705224	.03067	-2.30	0.021	-.130631	-.010414	.090909
dmonth4*	-.021321	.04893	-0.44	0.663	-.117217	.074575	.090909
dmonth5*	.0324949	.07199	0.45	0.652	-.108598	.173588	.090909
dmonth6*	-.0628511	.03208	-1.96	0.050	-.125733	.00003	.090909
dmonth7*	-.0050662	.06422	-0.08	0.937	-.130941	.120809	.090909
dmonth8*	.0028758	.06342	0.05	0.964	-.121418	.127169	.090909
dmonth9*	.0557155	.08799	0.63	0.527	-.116747	.228178	.090909
dmonth10*	.1753748	.13541	1.30	0.195	-.090024	.440773	.090909
dmonth11*	.0982263	.09901	0.99	0.321	-.095825	.292278	.090909

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Interpretation:

- Having a relatively high interest rate in the previous month ($t - 1$), lowered the probability of an upward rate adjustment.
- Increases in discount volume increased the probability of adjusting its interest rate upwards
- Notes and metal reserves do not have any effect (marginal effect is insignificant)

Annex 3: A Monetary Policy Reaction Function for DNB 1814–1870[6]

In order to test what objectives DNB pursued I develop two models. In order to establish what factors affected discount rate decisions, a monetary policy reaction function is estimated for the 1814–1870 period in which the following elements are taken into account.

- Convertibility
- The market rate of interest
- State borrowing (issuing of loans)

Data

1) discount rate (%) and Lombard rate (end of month data)
2) cover ratio (COVLIAB) or BMS ratio (end of month data)
3) market rate of interest (*prolongatie*) (%) (end of month data)
4) government loans issued (KING, absolute value or dummy), (yearly data from 1815–1840)

Model 1: DISRATE = C(1) + C(2) * COVLIAB + C(3) * PROL + C(4) * KING

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	3.229742	0.246399	13.10777	0.0000
C(2)	−1.822918	0.253654	−7.186628	0.0000
C(3)	0.277379	0.025670	10.80539	0.0000
C(4)	−0.002649	0.000838	−3.159411	0.0017
R-squared	0.438547			

[6] I am grateful to Bastiaan Overvest (ACM) for his help in this exercise.

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Interpretation:
- The bank rate was negatively related to the cover ratio. This is expected.
- The bank rate was positively related to the market rate. This is expected.
- The bank rate was negatively related to the issue of loans in a given year, but the effect is very small. This seems to indicate that DNB tried to keep the rate low depending on the issue of public loans.

Model 2: DISRATE = C(1) + C(2) * COVLIAB + C(3) * PROL

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	3.266939	0.215519	15.15849	0.0000
C(2)	−1.753770	0.208366	−8.416780	0.0000
C(3)	0.311681	0.021883	14.24299	0.0000
R-squared	0.433137			

Interpretation:
For the whole period 1814–1870, the relationship between the cover ratio and the market rate of interest is of the right sign and significant.

Model 3: LOMRATE = C(1) + C(2) * DISVOL + C(3) * BMSRATIO + C(4) * KING

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	5.421148	0.125094	43.33663	0.0000
C(2)	−0.000124	1.40E-05	−8.910033	0.0000
C(3)	−2.901892	0.248028	−11.69987	0.0000
C(4)	0.001881	0.000727	2.587696	0.0101
R-squared	0.348489			

Interpretation:
- The same OLS regression, but now with the Lombard rate (LOMRATE), and market rate (PROL) gives largely the same results.
- Surprisingly, however, KING has a positive sign (even though the coefficient is small, it is significant). Which means that the Bank was not so much inclined to help the issue of a loan, but rather, would suffer from ‘shortage’ in the market, and rising demand, forcing it rather, to raise the rate in response.