

This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: Housing and Mortgage Markets in Historical Perspective

Volume Author/Editor: Eugene N. White, Kenneth Snowden, and Price Fishback, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-07384-X (cloth); 978-0-226-07384-2 (cloth); 978-0-226-09328-4 (EISBN)

Volume URL: <http://www.nber.org/books/fish12-2>

Conference Date: September 23-24, 2011

Publication Date: July 2014

Chapter Title: Lending to Lemons: Landschaft Credit in Eighteenth-Century Prussia

Chapter Author(s): Kirsten Wandschneider

Chapter URL: <http://www.nber.org/chapters/c12796>

Chapter pages in book: (p. 305 - 325)

Lending to Lemons

Landschaft Credit in Eighteenth-Century Prussia

Kirsten Wandschneider

9.1 Introduction

Landschaften¹ were cooperative mortgage credit associations, created in Prussia in the late eighteenth century. They facilitated the refinancing of loans to Prussian noble estates by issuing covered bonds—Pfundbriefe²—that were jointly backed by the member estates. Landschaften were public institutions that did not have a profit motive and, except for reserve funds, did not hold their own capital. Their emergence is an interesting example of successful financial innovation in historical mortgage markets, illustrating an important alternative to the financial products at the center of the recent mortgage market disaster.

The collapse of the housing bubble and ensuing 2008 financial crisis has induced American financial institutions and policymakers to search for alternate ways to finance mortgages and reduce their dependence on the asset-backed securities market. The superior experience of covered mortgage bonds has drawn considerable attention. Covered bonds are secured directly by a pool of collateral, typically consisting of mortgages or public

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I thank Timothy Guinnane and Larry Neal for comments and discussions throughout this project. I also thank participants at the 2010 Utrecht workshop for Intermediation and Financial Markets, the 2010 EHA meetings, the Berlin Colloquium in Economic History, the UCLA Economic History Proseminar, and the NBER-URC Conference on Housing and Mortgage Markets in Historical Perspective. Parts of this chapter were completed while in residence at the Humboldt University in Berlin. Support from the Prussian State Archive is gratefully acknowledged. For acknowledgments, sources of research support, and disclosure of the author's material financial relationships, if any, please see <http://www.nber.org/chapters/c12796.ack>.

1. *Landschaft* (sing.) is the German name for the Prussian cooperative mortgage credit associations discussed in this chapter.

2. *Pfundbrief* (sing.) is German for covered mortgage bond.

sector debt. They remain on the balance sheets of the issuing institutions, as opposed to the off-balance sheet transactions for unsecured mortgage-backed securities. Covered bonds carry a dual recourse feature, since they are backed by the collateral pool, as well as the issuers' creditworthiness (Packer, Stever, and Uppner 2007). They therefore often receive the highest credit ratings, and are considered an alternative investment to government securities. For the US mortgage market, they have also been discussed as an alternative to replace the federal guarantees in the housing market. A bill to introduce covered bond legislation was proposed in the United States in 2010 (H.R. 4884 and H.R. 5823), but it narrowly failed to be included in the 2010 Dodd-Frank financial overhaul law. A similar bill was reintroduced in 2011 (H.R. 940) and was recommended by the House Financial Services Committee, but it failed to advance to a House vote.³ In spite of the absence of a comprehensive covered bond framework for the United States, individual banks have introduced covered bonds, and foreign banks have expanded their US denominated covered bond offerings.⁴

In this ongoing debate, it is valuable to examine covered bonds—called Pfandbriefe in German. Covered bonds could only be found until recently in Germany and Denmark, and to a lesser extent in Austria and Switzerland (Packer, Stever, and Uppner 2007). In the 1990s, covered bonds gained popularity with the introduction of covered bond bills in most of Europe. By 2011, the size of the European covered bond market had grown to 2.7 trillion euro, with the German market taking up about one third.⁵ Covered bonds have remained stable investment options throughout the recent crisis. Yet few economists know about their origins and why they proved to be such successful and safe financial instruments. This chapter sheds light on the origins of the German Pfandbrief, which served as a template for modern covered bonds.

The current study is primarily focused on the five “old” Landschaften as Pfandbrief issuers: the Silesian Landschaft founded in 1770, the Kur- und Neumärkische Ritterschaftliche Kreditinstitut (1777), the Landschaft of Pomerania (1781), the Landschaft of West Prussia in Marienwerder (1787), and the Landschaft of East Prussia in Königsberg (1788) (Hecht 1908, 10). However, throughout the nineteenth century the concept of the Landschaften spread to other German regions.⁶ While the old Landschaften were

3. For news coverage on the legislation compare, for example, “An Effort to Adapt a European-Style Tool to US Mortgages” *New York Times*, November 3, 2010, and “Geithner Backs New Financing Approach for Mortgages” *New York Times*, March 16, 2011.

4. See the US Covered Bond Investor Forum: <http://www.euromoneyconferences.com/uscoveredbonds.html>.

5. European Covered Bond Council, www.ecbc.hypo.org. The German Pfandbrief-market is the largest individual bond market in Europe (Mastroeni 2001).

6. Other examples of Landschaften established outside of Prussia were the Ritterschaftliches Kreditinstitut des Fürstentums Lüneburg in Celle (1766/1790), the Hamburgische Landschaft (1782), the Landschaft of Schleswig-Holstein (1811), Mecklenburg (1818 and 1840), Posen (1822), Württemberg (1825), Calenberg, Grubenhagen and Hildesheim (1825), Bremen und Verden (1826), and the Hannoversche Landes Kreditanstalt (1840) (Frederiksen 1894).

closed down at the end of World War II, others were folded into modern Pfandbrief-issuing banks and some smaller institutions exist to this day.

From today's perspective, the study of *Landschaften* is relevant for several reasons:

First, as mentioned earlier, *Landschaften* provide the first institutional example of how safe bonds could be based on land (Frederiksen 1894). They are the only mortgage-lending institutions prior to the emergence of private mortgage banks in the mid-nineteenth century. While mortgage credit had been an important element in European finance since the Middle Ages, previous attempts at issuing mortgage-backed debt, including John Law's "système," failed.⁷ The Pfandbriefe of the *Landschaften* therefore present an example for successful innovation in financial markets.

Second, *Landschaften* constitute a nonbank financial institution taking on the role of a delegated monitor.⁸ In this function, they enrich the understanding of German financial history, which has predominantly been focused on the success of the large universal-style credit banks.⁹ *Landschaften*, as nonbank financial intermediaries, were successful in recapitalizing the impoverished Prussian estates, for whom they provided credit and liquidity.

Third, by connecting the landholding Junker class to the financial market in Berlin, *Landschaften* enabled Junkers to increase their leverage using their estates, helping to solidify their economic dominance. However, as *Landschaften* were extended to include farmers and nonnoble landholders in the mid-nineteenth century, they expanded credit access beyond the nobility and eased the transition from serfdom to peasant proprietorship (Frederiksen 1894). Given the size of the market, Pfandbriefe constituted an attractive investment choice for investors.¹⁰ *Landschaften* thus played an important role in the economic, political, and social development of Prussia and later the German Reich.¹¹

This chapter focuses on the first of these aspects—how the *Landschaften* created a market for covered mortgage bonds. It describes the common operational features of the *Landschaften* and demonstrates how they served as financial intermediaries. Concentrating on the institutional details, the stability and relative success of the *Landschaften* can be traced back to their specific design, which helped overcome adverse selection, moral hazard, and auditing and enforcement problems related to lending. The chapter also briefly outlines the role and function of the *Landschaften* for the Prussian economy. To begin, this chapter describes the economic conditions in

7. Compare Hoffman, Postel-Vinay, and Rosenthal (2011).

8. Compare Stiglitz (1990).

9. For a review of recent developments in research focusing on German financial history compare, for example, Burhop (2006), Guinnane (2002), and Fohlin (2007).

10. For a more recent discussion, refer to Schiller (2003) and Hess (1990).

11. Compare Gerschenkron (1946) for a discussion of the role of the Prussian Junker class for German economics and political development.

Prussia at the time of the creation of the *Landschaften*. The next section discusses the features of the *Landschaften*, with special attention to how *Landschaften* overcame the informational problems related to lending. The fourth section examines their spread and performance by looking at the number of estates that borrowed, the number of *Pfandbriefe* issued, and their yields. The last section concludes with a discussion for possible future research.

9.2 Economic Conditions in Prussia and the Creation of the *Landschaften*

Prior to 1848 Prussia was a monarchy, ruled by the king and supported by the bureaucracy and the landed aristocracy—the Junkers. Prussian society was organized by a feudal class system, with the Junkers controlling local affairs through manorial courts and police powers. The Junkers dominated economic activity and have often been portrayed as being preoccupied with the status of agriculture and their estates and showing little interest in furthering industry (Schiller 2003; Hess 1990).

At the end of the Seven Years' War in 1763, Prussia emerged as a political and economic power in central Europe. However, economic conditions were bleak. The war had disrupted trade and economic activity. Areas east of the Elbe River had suffered from military operations and enemy occupation. Farms were neglected and landowners, farmers, and peasants were short on horses, cattle, sheep, fodder, and seed (Henderson 1962). To restore agricultural production, both landowners and farmers were in need of long-term credits at affordable rates.

Before the war, landowners had relied on private credit intermediaries who had offered loans at about 6 percent interest plus 1/2 to 1 percent commission. Traditional sources for loans included family, local merchants, and the Church (Enders 2008, 611). Loans were usually granted up to half of the last sale price of the estate and would often be secured by an entry into the district court's land registry (Mauer 1907, 19). The foundation for the formal use of land as collateral for loans had already been laid with the 1722 Prussian bankruptcy law, which stipulated the publication of liens in the land registry (Jessen 1962, 36). Revisions of the Prussian mortgage laws in 1748 and 1750 established a ranking for the seniority of debt, where secured debt was given the first lien (Weyermann 1910, 64). These legal changes improved creditor rights and facilitated the verification of collateral, setting the stage for lending on security of an estate's land.

During the Seven Years' War, the credit limit had been raised above the traditional threshold of 50 percent of the estate's last sale price, contributing to the high indebtedness of the manors by the end of the war (Mauer 1907, 20). Given this higher leverage, the postwar economic recession triggered a wave of defaults on estate loans.

The agricultural credit crisis coincided with a financial depression and

general credit crunch in 1763. At the end of the war, speculative trading activities that had been profitable in wartime collapsed, leading to bank failures, notably of the bank house De Neufville in Amsterdam. The financial crisis was transmitted through bills of exchange from Amsterdam via Hamburg to Berlin, putting pressure on creditors. Distressed creditors started calling in previous estate loans to raise funds. Interest rates rose and available credit was restricted. This put additional pressure on borrowers, especially on those already experiencing financial strain. The credit market began to resemble a lemons market, as described by Akerlof (1970). At rising rates, only the high-risk borrowers that had an immediate need for credit remained in the market. This in turn discouraged liquid creditors from loaning out funds. Shrinking loan supply led to a complete credit collapse. That the drying up of credit was worsened by a lemon's problem and cannot solely be explained by the overall tightness of credit can be seen in the quick recovery of the market after the creation of the *Landschaften*, which helped match lenders and borrowers and verified collateral.¹² Similarly, some lenders relied on the *Landschaft* to carry out the estate's assessment but would then negotiate a private credit contract in place of the *Landschaft* loan (Ucke 1888).

To aid the landholders, King Frederick II had tried to halt the crisis's transmission to Berlin through the refusal of *Wechselstrenge* (holder in due course) and bailouts. However, both measures only heightened creditors' perception of risk, as the king colluded with the landed nobility, increasing pressure on lenders and worsening the credit crunch (Schnabel and Shin 2004). In 1765, Frederick II passed a three-year general moratorium on principal and interest payments for all outstanding debts, which only alienated creditors further. At the end of the moratorium in 1768 many estates went into foreclosure, and liquidations of estates in which less than half of the outstanding debt could be recovered were common (Weyermann 1910, 66). Land as collateral no longer sufficed to attract individual loans, and creditors shied away from all rural investments.

To illustrate the situation, a 1771 study of estates in the Kur- and Neumark reveals that the average level of indebtedness of the estates was 53 percent of their value, but about 15 percent of estates held debts over 100 percent, and some as high as 200 percent of the estate's value (Pr. Br. Rep 23B, Neumärkische Stände, Nr. 635). In addition, mortgage rates for the safest mortgage loans had climbed to 10 percent and the commission increased to 2 to 3 percent, substantially increasing the cost of credit (Frederiksen 1894).

Landschaften were created in this credit vacuum. The design of the *Landschaften* was based on a proposal made by a Berlin merchant, Diederich Ernst Bühring, in 1767. Bühring had spent the early years of his career in Amsterdam, trading bills of exchange that were used to finance eco-

12. Borchardt (1961) also shows that the lack of credit in Germany was in fact not a problem of supply, but rather of insufficient matching between creditors and debtors.

conomic activities of the Dutch colonies. Growing up in Bremen, he was also acquainted with Bremer “Handfeste-Urkunden,” private bearer bonds that were backed with a claim on real estate belonging to the debtor (Jessen 1962, 40–41). Knowledge of these various financial instruments clearly influenced his thinking about mortgage credit, just as other innovations of mortgage securitization had been influenced by existing securities.¹³ Bühring’s plan combined these types of financial instruments and the creation of a general mortgage institute for Prussia, the “General Landschaftskasse,” that would collectively hypothecate all of Prussia’s noble estates. This Landschaftskasse would issue bearer bonds at 4 percent and would guarantee the convertibility and punctual payment of interest rates. Estate holders could join this mortgage bank and would pay 4.5 or 5 percent interest on their loans. The interest rate differential would be used for administrative funds and to assemble a reserve fund for emergencies.¹⁴

Bühring’s proposal was presented to King Frederick II in February of 1767, who forwarded it to his minister of finance, Etat-Minister von Hagen. Von Hagen rejected the plan in March of 1767. But in 1768, Johann Heinrich Casimir von Carmer—the new finance minister and minister of justice—proposed a Landschaft for all of Prussia, similar to Bühring’s original idea. Von Carmer stipulated that all noble estates would be mandatory members of this new organization. The Landschaft would issue covered bonds up to half the value of all estates and guarantee the interest payments as well as the principal, backing the Pfandbriefe with the joint liability of all member estates. Furthermore, Pfandbriefe should circulate as quasi-money to alleviate the general shortage of credit.

It is uncertain whether Bühring’s plan served as the template for von Carmer’s proposal. However, since Bühring’s ideas laid out the key details, he is often referred to as the conceptual father of the Landschaften (Jessen 1962, 38). In 1777, after the first two Landschaften had already been established, Bühring was officially credited with the original concept of the Landschaften (Jessen 1962, 44).

Based on von Carmer’s ideas but organized into regional Landschaften rather than one single institution for all of Prussia, King Frederick II signed a cabinet order to found the first of the Landschaften, the Silesian Landschaft, in August of 1769. In the summer of 1770 the statutes of the Silesian Landschaft were ratified by the general assembly of the Silesian feudal class, and in December of 1770 the first Pfandbriefe were issued (Jessen 1962, 47).

The creation of the Silesian Landschaft took up important elements of Bühring’s as well as von Carmer’s original plans. As von Carmer had suggested, the noble estates of Silesia were combined in a mandatory credit

13. See Frehen, Rouwenhorst, and Goetzmann on the development of Dutch bonds (chapter 8, this volume).

14. Compare Bühring’s original plan, as cited in Maurer (1907, 190–95).

association and would jointly back all Pfandbriefe issued by the Landschaft. The key concept of the Pfandbrief went back to Böhming's original plan, with the Landschaft guaranteeing the interest payments as well as limited convertibility. Lenders could therefore rely on the Landschaft rather than on individual borrowers for their payments. They would purchase standardized Pfandbriefe rather than negotiating private loans with individual borrowers. Lenders also benefitted from reduced transaction costs and an emerging secondary market. The benefit of Landschaft credit for landholders was that it was long term and relatively low cost. Loans could not be called in by the lender, providing additional stability and security for the debtors.

9.3 The Design of the Landschaften and Their Lending Mechanisms

The key features of the Pfandbriefe can be seen in the example of a Pfandbrief issued by the Silesian Landschaft on June 24, 1774, shown in figure 9.1. The picture displays a Pfandbrief over thirty Reichstaler Courant, at fourteen Reichstaler per mark fine silver. It is made out for the estate named "Jaschkowitz" in the district of Tost in Upper Silesia, and it is backed by all combined estates in Upper Silesia. Interest was payable in cash in Cosel or Breslau and the coupons for the biannual interest payments were stamped on the Pfandbrief. Interest payments were payable through 1923 (noted on the back, not shown). In 1929, this Pfandbrief was stamped worthless and exchanged for a new gold Pfandbrief.



Fig. 9.1 An example of a Pfandbrief
Source: Courtesy of Auktionshaus Tschöpe.

9.3.1 The Design of the Landschaften

To obtain a loan, a landholder and member of the Landschaft would place a request with the Landschaft. The local assessor, who was also a member of the Landschaft, would estimate the value of the estate and determine a credit limit that was either based on the net profit of the estate (Grundsteuerreinertrag) or its last sale price. After the credit was granted, the Pfandbriefe were handed to the estate holder the following Christmas or Johanni (St. John the Baptist's Day, June 24). Estate holders could present these bonds to the Landschaft and ask to be paid in cash after a period of six months. Alternatively, estate holders could sell the bonds directly in the open market. Bonds were initially issued at 4 percent and borrowers had to commit to paying biannual interest payments in cash to the Landschaft, plus an added 1/2 to 1 percent for administrative purposes.¹⁵

To raise funds, the Landschaft sold Pfandbriefe to creditors, especially urban merchant bankers that were seeking investment opportunities. Pfandbriefe paid 3.5 to 4 percent interest to the lenders and were initially sold at their nominal value. With rising popularity their prices increased so there was an equivalent reduction of 1/4 to 1/2 percent, and it became easier for landholders to sell them directly to investors rather than cashing them in with the Landschaft. Figure 9.2 describes the transaction, assuming that the Landschaft was presented with the Pfandbrief, and figure 9.3 describes how borrowers could sell their Pfandbriefe directly. In both cases the Landschaft remained responsible for coupon payments to the lender and the borrower made regular biannual interest payments to the Landschaft, so that the creditor would always interact with the Landschaft and not have to seek out individual borrowers for payment.

Landschaften reduced transaction costs as they pooled loans and created a uniform debt instrument. They could realize economies of scale and scope by including up to 2,500 borrowers and reaching deeper into the pool of creditors.¹⁶ As the Pfandbriefe were standardized, this offered creditors an emerging secondary market that increased liquidity. Pfandbriefe of the Prussian Landschaften were quoted on the Berlin Bourse and were available to a wide audience of investors.

9.3.2 Adverse Selection

Adverse selection is an *ex ante* informational problem where under certain conditions only borrowers that are a poor credit risk will be attracted into a market. In response, lenders will not be willing to supply capital to this

15. Here, the 4 percent interest rate was adjusted later to 3.5 percent, then raised again. Over their lifespan, most Landschaften created different issues of bonds, all priced between 3.5 percent and 5 percent.

16. By the early twentieth century, the East Prussian Landschaft had included over 15,000 Pfandbrief-issuing estates.

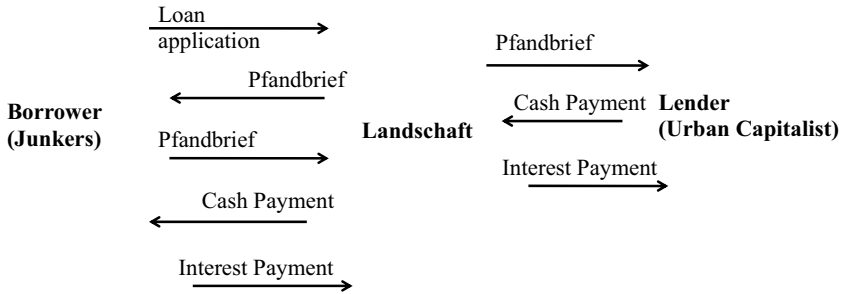


Fig. 9.2 Borrowing intermediated by the Landschaft—version 1

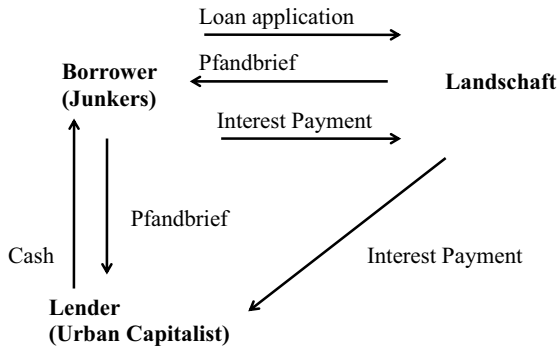


Fig. 9.3 Borrowing intermediated by the Landschaft—version 2

pool of “lemons.” As described in section 9.2, this corresponds to the period following the Seven Years’ War and the credit crisis of 1763. To overcome adverse selection, the old Landschaften, except for the Landschaft of the Kur- und Neumarkt, automatically included all noble estates situated within the Landschaft’s geographic region.¹⁷ This gave all estates, even Junkers in dire circumstances, equal access to credit at fixed interest rates. Since all estates that were part of the Landschaft had joint liability, landowners had an incentive to actively participate in the management of the Landschaft, improving its quality and thereby increasing the supply of credit.

In exchange for the compulsory membership, all members of the Landschaften held a “right to credit” so the Landschaft could not discriminate against individual estates. Therefore, a key to prevent adverse selection was

17. Landschaften were built on the history of earlier financial functions of Prussian feudal organizations, which had provided banking services to its members. Most of these old credit banks had been shut down by a decree of the king in 1717. Only the “Kreditwerk der Churmärkischen Landschaft” survived as the last of these old credit banks. It functioned as the credit institute for the Prussian upper class and remained in operation until 1820, issuing bonds that were traded on the exchanges of Berlin and Vienna (Jessen, 1962, 48).

the determination of the credit limit and the correct assessment of the estate to guarantee collateral. The assessment of the member estates prior to granting a loan followed two different procedures. Starting from the last sale price of the estate, the landholder could obtain a loan up to one quarter, one third, or one half of this price, depending on when the sale had taken place. Alternatively, the net profit of the estate (*Grundsteuerreinertrag*) was assessed by a tax commissioner, and the estate holder could then obtain a loan of fifteen to twenty times the assessed amount (Altrock 1914, 25).¹⁸ Though in practice, the majority of the loans were based on previous sale prices, extending loans based on the net profit guaranteed that the cash flow of the estate would be sufficient to cover the interest payments on the loan, regardless of the value of the estate. To ensure a conservative assessment, the assessor could even be held personally liable for losses in the case of a too generous assessment (Weyermann 1910, 86).

Pfandbriefe were entered into the land registry and took precedence over all other outstanding debt, holding the preferred first debtor position. In cases where existing debt could not be extinguished prior to the *Landschaft's* loan, the amount of capitalized debt was subtracted from the maximum loan value. But often landholders could exchange Pfandbriefe for existing debt up to the credit limit (Altrock 1914, 60–61). Pfandbriefe were also used to service standing obligations such as rent payments or payments resulting from inheritance or estate settlements (*Ritterschaftliche Haupt Direktion*, Rep 23A *Kurmärkische Stände*).

9.3.3 Moral Hazard

Moral hazard constitutes an interim problem in the lending process in which borrowers that have received funds engage in risky behavior; for example, choosing a more risky investment project. Moral hazard can be avoided through improved incentives and monitoring. Moral hazard is also reduced when borrowers have to put up significant collateral. Without micro-data on individual loans, it is hard to verify to what extent moral hazard presented a problem for the *Landschaften*. Generally, funds are described as being put to productive use, such as for the purchase of new agricultural machinery or construction or renovation of houses and barns on the estates. A case study of the East Prussian *Landschaften* finds limited evidence for moral hazard on the part of large landholders (Wandschneider 2013).

Moral hazard may not have been fully eliminated as some landholders used the proceeds of the *Landschaften* loans to buy additional land, which could then be mortgaged. Contemporaries worried that the *Landschaften* set off a speculative boom in real estate. Changes in ownership of estates were frequent between 1780 and 1806 and the noble estates were consolidated in the 1780s and 1790s (Mauer 1907, 21). In 1789 the king passed a law for

18. The same net profit measure was also used to determine tax liability of individual estates.

Silesia that limited the extent at which new estates could be purchased with Pfandbriefe. However, this law was difficult to enforce and was abolished in 1791. While the *Landschaften* failed to set up an effective mechanism to eliminate the speculative use of their funds, the practice appears to have been limited. Wandschneider (2013) finds little systematic estate enlargement for East Prussia between the years 1806 to 1834.

The key mechanism for *Landschaften* to address moral hazard was collateral and the principle of joint unlimited liability. Issuing the Pfandbrief, two legal obligations were incurred, which mirror the dual recourse feature of today's Pfandbriefe (Mauer 1907, 3–4). First, the owner of the Pfandbrief held a claim against the estate to which the Pfandbrief was tied. This claim was against the land on which the estate was situated, not against any private property or assets of the owner. Second, the Pfandbrief constituted a claim against the *Landschaft*, meaning that the Pfandbrief was backed by all liquid assets of the *Landschaft* as well as all land of the member estates of the *Landschaft*, whether they had borrowed money or not. This dual recourse can also clearly be seen on the Pfandbrief example, shown in figure 9.1.

The joint liability feature of the Pfandbrief resembles group-lending contracts used in modern microfinance groups, as well as the design of the credit cooperatives founded in mid-nineteenth-century Germany by Friedrich Raiffeisen and Hermann Schulze-Delitzsch.¹⁹ While joint liability appears to have never been called on in practice, suggesting that there were adequate reserves, it served as an important signal of the safety of investing in a Pfandbrief, at least in the early years of the *Landschaften*'s existence. It also increased the incentive for neighbors to monitor each other (Hagedorn 1978, 58). Since *Landschaften* were relatively large institutions, local monitoring was not always easy. But all members of the *Landschaft* belonged to the same social class, making the group fairly homogeneous and conscious of social stigma. Moreover, *Landschaften* built on the existing political and social order, continuing and often replacing the organization of the "Stände," which had historically ensured representation of the nobles. This reinforced the relationship between the *Landschaft* and the preexisting social structure. One more important feature was the fact that the *Landschaften* were subdivided in smaller regional groups for administrative purposes. For example, the *Landschaft* for East Prussia was split into three administrative regions (Angerburg, Königsberg, and Mohrunge), each of which again was divided into three to five districts.²⁰ These smaller administrative units reinforced monitoring, as the joint liability first covered the district, then the

19. A detailed discussion of the Raiffeisen credit cooperatives can be found in Guinnane (2001, 2002).

20. The Prussian administrative units of "Department" and "Kreis" are frequently translated as administrative district and county, respectively. Eddie (2008) argues that the terms administrative region for Department and district for Kreis are more accurate representations. Also, the *Landschafts* Departments and Kreise do not exactly follow the administrative units.

administrative region, and finally the Landschaft as a whole. This structured monitoring gave the Landschaften an advantage over private lenders.

9.3.4 Auditing and Enforcement

To help with auditing and enforcement, Landschaften relied heavily on local expertise and used local officers to inspect the estates and set the maximum loan amount.²¹ Landschaften were self-governed, with elected officials coming from the membership of estate holders. Landschaften were managed by the “General-Landschaftsdirektion” (board of directors), headed by the Generallandschaftsdirektor (general director), elected for six years. Next to the director worked a corporate counsel, who had judicial powers to carry out foreclosure of delinquent estates. In addition, three “Generallandschaftsräte” with full voting rights were part of the board of directors. These had to be estate holders in the Landschaft and be fully employed in agriculture. In contrast to the director and the counsel, which were employed by the Landschaft, all other positions had no compensation. By relying on voluntary labor, Landschaften kept administrative costs to a minimum and reinforced the role of Landschaften members as stakeholders of the institution.

The board of directors carried out the important decision making and the day-to-day operations of the Landschaft. Members of the directorship were elected by a supervisory board called “Landschaftsausschuss,” that represented the membership of the Landschaft. It included twenty to twenty-five members, and met at least once a year to supervise the activities of the board of directors (Jessen 1962, 119). Over time Landschaften supplemented the Landschaftsdirektion with additional tax and accounting committees that assisted with assessing the estates and supervising financial matters.

To strengthen their enforcement mechanism and provide a tool to address defaulting estate holders, Landschaften had the right to directly foreclose on estates whose payments were in arrears. The foreclosure process provided a credible threat, even if it was infrequently used. Due to the relatively conservative valuations for estates, Landschaften were usually able to recover the amount of the outstanding loan by selling the property (Wandschneider 2013).

9.3.5 Additional Measures

Additional mechanisms, which boosted the safety of the bonds issued by the Landschaften, were the accumulation of reserve funds, and over time, the introduction of amortization schedules. In addition to the land provided as collateral for the Pfandbriefe, Landschaften built reserve funds that were used

21. Landschaften refrained from valuing livestock early on, as it was found that livestock was difficult to value and estate owners sometimes “borrowed” livestock when an assessment was forthcoming (Frederiksen 1894).

to cover unexpected operating costs or losses. Over time, all *Landschaften* built sizable reserve funds; however, these assets were only used for emergencies and not to issue credit. The capital accumulated by the *Landschaften* resulted from the interest differential paid by the borrowers, as well as capital injected by the crown. For the Silesian *Landschaft*, for example, King Frederick II provided initial capital in the form of a loan of 200,000 Talers at 2 percent interest (Frederiksen 1894). However, not all *Landschaften* received this form of direct assistance. Moreover, the *Landschaften* did not depend on these loans for their day-to-day operations, but only counted on official support in times of crisis. The close relationship between the king and the *Landschaften* thus added an extra layer of security. It also served as a form of “bail-in” by the king who had an interest in supporting the Junkers. This support for the *Landschaft* also benefitted the creditors.

Landschaften varied to the extent to which the borrowers had to amortize their existing debt. While the *Landschaften* originally paid out the principal of the loans to the borrowers on demand, the individual borrowers were only obliged to make regular interest payments to the *Landschaft* and the “old” *Landschaften* did not carry provisions for how the existing debt should be retired. Only over time did *Landschaften* introduce obligatory amortization schedules (Frederiksen 1894). Between 1770 and 1777 borrowers could opt to retire their debt through *Pfandbrief* repurchases as well as cash payments to the *Landschaft*. In 1777 the bylaws of the Silesian *Landschaft* stipulated that debts could only be extinguished with *Pfandbriefe* having similar interest schedules. After 1785, cash payments were permitted again. The lack of amortization was seen as a structural weakness of the *Landschaften* since extinguishing outstanding debt was cumbersome. In the design of the subsequent *Landschaften*, in Posen in 1818, for example, provisions to pay off the debt were included from the start (Mauer 1907, 168). For the “old” *Landschaften*, however, estate holders resisted amortization, especially during the agrarian crisis of the 1820s. But as economic conditions improved, the West and the East Prussian *Landschaften* began creating amortization funds to extinguish some of the existing *Pfandbriefe*. In 1832, the East Prussian *Landschaft* even raised the interest payments for the estate holders by 1/6 percent (Mauer 1907, 169). But in practice, these funds were nothing but expanded reserve funds for the *Landschaft* as they were never used to pay off the principal. Mandatory amortization by the estate holders was only introduced in the 1920s (Jessen 1962, 78).

9.4 Empirical Evidence

The following section presents empirical evidence on *Landschaften* membership, the number of loans and *Pfandbrief* yields that is consistent with the previous description of the credit market, and highlights the importance of the institutional features of the *Landschaften*.

Data are scarce and often inconsistent, but they show that the *Landschaften* were successful in providing credit to the Prussian nobility. Contemporaries describe the *Landschaften* as averting liquidations of Junker estates and stabilizing economic conditions. For example, Frederiksen (1894) mentions that King Frederick II claimed in his memoirs that the Silesian *Landschaft* saved 400 of the best families in the province from ruin. The *Landschaften* lowered the cost of credit for agricultural estates from about 8 percent before the Seven Years' War to below 5 percent, and *Pfandbriefe* circulated widely soon after their issue. In Silesia interest rates in 1770 had been 6, 8, and 10 percent, while rates averaged 4.66 percent in 1777 and 4 percent in 1787 (Jessen 1962, 67). Homer and Sylla (1996, 258) show that interest rates in Prussia throughout the nineteenth century were consistently lower than in neighboring regions.

Pfandbriefe were deemed extremely safe investment choices, often at par with government securities. They also increased the value of the estates that could be used as collateral and brought a stabilization of and eventual rise in the price of land. In 1770 the value of all noble estates in Silesia was estimated to be sixty million Reichstaler, which were indebted for twenty-two million Reichstaler. By 1790, the value of the estates had doubled and *Pfandbriefe* valued at fifteen million Reichstaler were in circulation (Jessen 1962, 68).

The number of estates that borrowed through the system of the *Landschaften* (figure 9.4) rose steeply, especially from the mid-nineteenth century onward, and the totals for the *Pfandbriefe* increased (figure 9.5), emphasizing their popularity in financial markets. *Pfandbriefe* were also purchased by foreign investors, and the government worried about interest payments paid to foreigners and tried to curb foreign sales (Franz 1902, 26).

The steep rise in the number of estates for the Silesian and East Prussian *Landschaften* and the rising amount of *Pfandbriefe* issued corresponded to the changes in regulations of the *Landschaften*. Over time, they expanded to include smaller estates and farms. For example, in 1808 the East Prussian *Landschaft* decided to include nonnoble estates that belonged to the *Köllmer*, a group of free farmers. Beginning in 1849, the East Prussian *Landschaft* included all estates of a minimum tax value of 1,500 marks (Altrock 1914, 108). But the effect of the *Landschaften* for these smaller farms remained limited, as more large estates took advantage of the *Landschaft* credit than smaller ones. In the second half of the nineteenth century the system of *Landschaften* expanded not just in terms of members but also in terms of financial services offered. Many *Landschaften* added *Darlehnskassen* (savings and loan associations) and insurance companies (mostly fire and life insurance). In 1860, for example, the East Prussian *Landschaft* added the *Landschaftliche Darlehnskasse* to encourage savings by its members.

The central organization also expanded over time. Similar to the central organizations of the *Raiffeisen* credit cooperatives, a Central-*Landschaft*

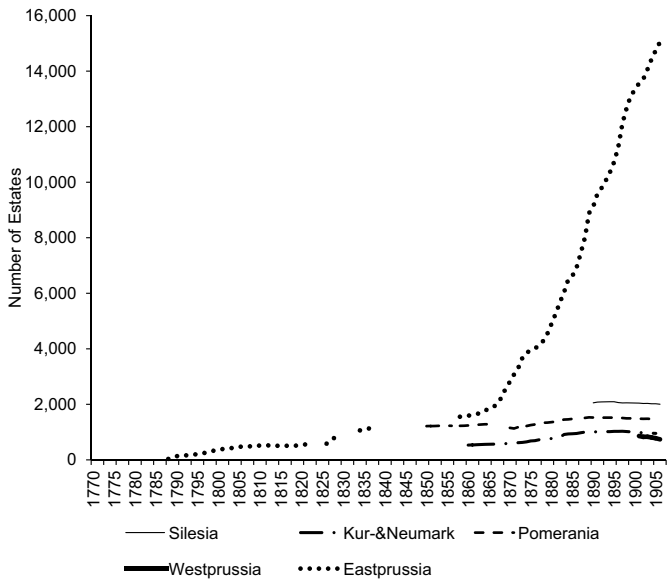


Fig. 9.4 Number of estates that issued Pfandbriefe

Sources: Hecht (1908), Kur- und Neumärkisches Landschaftliches Kreditinstitut: Tableau der mit Pfandbriefen belegten Domänen (1817), and Brämer (1867).

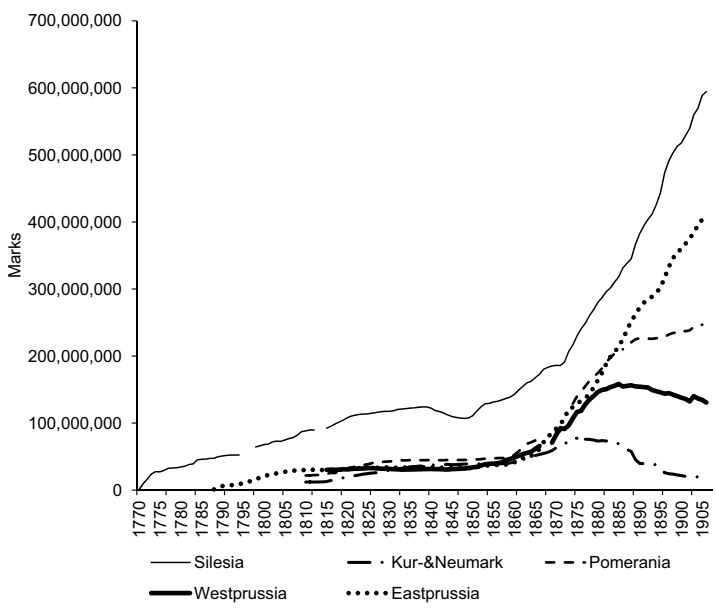


Fig. 9.5 Pfandbriefe outstanding (in marks)

Sources: Hecht (1908) and 125 Jahre Ostpreussische Landschaft (1913).

for all Prussian states was founded in 1873.²² This central organization was a cooperation of twelve regional *Landschaften*. The Central-*Landschaft* issued unified Central-Pfandbriefe, which were thought to be more appealing to a wider group of buyers. However, since the individual *Landschaften* still issued their own Pfandbriefe alongside the Central-Pfandbriefe, the Central-*Landschaft*'s success remained below expectations (Jessen 1962, 92).

In practice, *Landschaften* issued two different kinds of Pfandbriefe. First, "Capitalsbriefe" (capital bonds), which constituted 90 percent of the total share of all Pfandbriefe and second, "Realisationsbriefe" (realized bonds, 10 percent of the total). Realisationsbriefe could be exchanged on demand at the *Landschaft* into Prussian Taler. They were issued in smaller denominations of 20–100 Talers, while Capitalsbriefe were denominated up to 10,000 Talers. For Capitalsbriefe there was a six-month exchange period, after which the Pfandbriefe could be cashed in by the estate owner (Jessen 1962, 72). The *Landschaft* thus needed to hold reserves in the amount of all issued Realisationsbriefe. At an exchange rate of fourteen Talers to a mark of fine silver, Pfandbriefe were directly tied to the monetary base, but backed by land rather than specie. They helped expand the money supply similar to the early eighteenth-century US land banks, which had issued bank notes tied to mortgages (Thayer 1953). Often borrowers could pay obligations directly with the acquired Pfandbriefe, without cashing them in at the *Landschaft*.

Zöllner writes in his "Letters about Silesia" in 1793, describing the function of the Pfandbriefe as quasi-money:

Und im Grunde war es für die Provinz so gut, as wenn 14 Millionen Taler bares Geld in dieselbe gekommen wäre, weil diese Summe in Pfandbriefen vorhanden war, deren man sich zu allen Zahlungen eben so sicher und mit noch grösserer Bequemlichkeit als der Klingenden Münze bedienen konnte. (Zöllner 1793, 399)

In effect, it was as if fourteen million Taler in cash had entered the province, as this sum was available in Pfandbriefe, which could be used for all payments with the same security and even greater convenience as coins.

Figure 9.6 shows the development of Pfandbrief yields for the five old *Landschaften* in comparison with the 4 percent Prussian sovereign bond. The movements of these yields reflect the major economic and political events of Prussia at the time, but their peacetime overall stability also speaks to the success of the *Landschaften*. As can be seen from the graph, Pfandbriefe frequently traded at par with or above the Prussian state bonds.

All *Landschaften* initially issued 4 percent Pfandbriefe, which were converted to 3.5 percent in the 1830s to follow general market trends. From the 1830s forward, *Landschaften* issued a broader selection of Pfandbriefe with

22. Compare Guinnane (1997) on the Raiffeisen centrals.

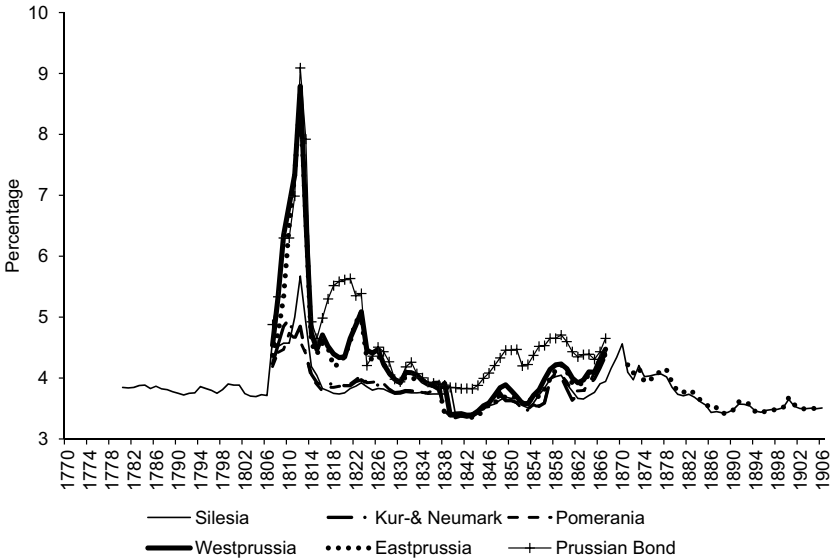


Fig. 9.6 Maximum yields of Pfandbriefe for the five old Landschaften and the Prussian 4 percent government bond

Sources: Hecht (1908) and Meitzen (1868).

varying interest rates (3.5 percent to 5 percent) to compete with changing conditions in the credit markets.

The yields of the Silesian Landschaft remained below 4 percent from the outset and were stable until the beginning of the Napoleonic Wars, when the yields of all Landschaften spiked. The wars halted agricultural productivity in Prussia. They also burdened East Prussia with approximately 260 million marks in wartime costs (Altrock 1914, 110). In response, Landschaften members were granted extensions on their interest payments between 1807 and 1818 (Ristau 1992). Also, after 1807, both the Silesian Landschaft and the East Prussian Landschaft incorporated territories of the Prussian state (Domänen) as member estates. This allowed the Prussian state to request Pfandbriefe backed by these territories and raise funds to pay off war debts. Both the Silesian and East Prussian Landschaften were used to increase the state's capacity to borrow, and the debt with the Landschaft was not amortized until 1900. However, other Landschaften refused to accept state territories as members, thus assuring their independence from the Prussian state (Jessen 1962, 74).

The years 1807 to 1815 were years of agricultural reform for Prussia. Following the proposals by Karl August von Hardenberg and Heinrich Friedrich Karl Freiherr von Stein, the old feudal system was abolished and farmers were liberated (Jessen 1962, 84). As part of the reforms, noble estate

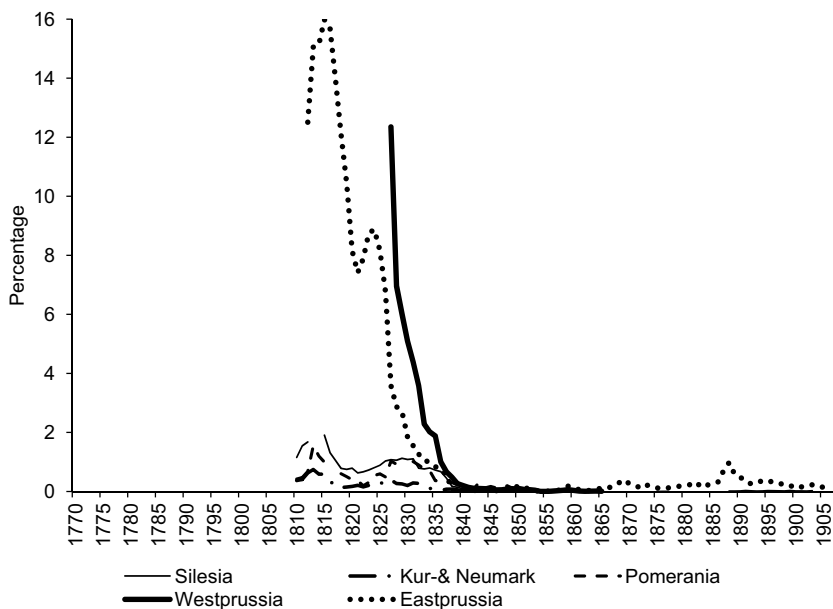


Fig. 9.7 Interest payments in arrears as share of the total Pfandbrief volume

Source: Hecht (1908).

holders were compensated for the loss of agricultural labor with part of the land that had belonged to farmers. The effect of these reforms on the value of the estates and on the value of the Pfandbriefe was unclear at first. The loss of workers reduced the productivity of the estates, but the additional land could be used as collateral for the issue of new Pfandbriefe (Mauer 1907, 52).

The Pfandbrief yields for all five Landschaften recovered with the end of the Napoleonic Wars, with the exception of spikes for East and West Prussia in the early 1820s, which were related to the agricultural crisis and the loss of British grain exports. They remained stable until the 1848 revolution. Beginning in the 1840s, the Landschaften struggled to attract capital due to competition from the demands from industry, especially railroads and mining, for credit (Altrock 1914, 113). Frequent Pfandbrief conversions also lowered their popularity in the 1860s. However, prices steadily recovered again after the German unification of 1871, trading close to par in the 1880s and 1890s.

Another measure for the stability of the Landschaften are data on interest arrears that the Landschaften accumulated as distressed borrowers failed to make regular payments (figure 9.7). The outstanding interest arrears mirror the changes in the yields. Arrears are generally low for the period after the 1830s, speaking to the Landschaften's stability and their overall successful monitoring of loans. Arrears spiked, especially for the Landschaft of East

Prussia, in the years before 1815 because the Crown ordered a suspension of payments during the war. They rose again, predominantly for East and West Prussia, during the early 1820s, mirroring other yields and reflecting the agricultural crisis that affected the estates (Ucke 1888).

With rising interest arrears, *Landschaften* made use of their right to take estates with nonperforming loans into receivership and ultimately foreclose on them to recover the outstanding loan amounts. Systematic data on estates in receivership and foreclosures are lacking, but for the time period 1806 to 1829 the Acta of the Königl. Oberpräsident of Prussia (XX.HA Hist. StA, Königsberg, Titel 22, Nr 46) list a total of 257 foreclosure sales in East Prussia (Wandschneider 2013). Data on West Prussia for the period after 1870 shows that *Landschaften* used this enforcement mechanism and foreclosed on two to twenty-three estates every year after 1870 (Hecht 1908). The seizure of estates was no empty threat and speaks to the effective design of the *Landschaften* to address moral hazard.

9.5 Conclusion

Landschaften were public nonprofit institutions that issued covered bonds, establishing the mortgage market in Prussia, beginning in the second half of the eighteenth century. They were effective in providing credit to Prussian noble estates. By demonstrating how bonds could be safely backed with land, they served as an early predecessor for credit cooperatives as well as private mortgage banks. They proved extremely durable, establishing an asset class of mortgage-backed securities—*Pfandbriefe*—that has remained popular to this day.

Landschaften assumed an important financial intermediary function by connecting the landholding but cash-poor Junker class with credit sources in Berlin. *Landschaften* reduced transaction costs for lenders and borrowers and relied on dual recourse, joint liability, local monitoring, and forced membership to avoid problems of moral hazard and adverse selection. They cooperated with the Crown, with some *Landschaften* mortgaging Crown lands, directly supporting government finances. Through the *Landschaften*, Junkers could easily take on large amounts of debt that were available long-term at comparatively cheap rates. The creation of a standardized debt instrument created a growing secondary market that increased the liquidity of mortgage loans. Issued in various denominations, *Pfandbriefe* circulated as cash equivalents.

Then as now, the value of the *Pfandbriefe* was anchored by their one-to-one correspondence to an underlying asset, which was guaranteed by the institution of the *Landschaften*. The dual recourse feature, which gave bondholders the double security of the underlying asset and the guarantee of the *Landschaft*, remains the key feature of *Pfandbriefe* today. The historical example highlights successful financial innovation, but also shows

which institutional features made covered bonds successful. Future research to investigate the details of the loan portfolios of individual *Landschaften* will provide additional evidence and quantify the effects of the *Landschaften* on the economic and political development of Prussia.

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