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RODNEY EDVINSSON, TOR JACOBSON, AND  
DANIEL WALDENSTRÖM (EDS.)

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# The Swedish Bond Market, 1835–2020

Daniel Waldenström

## Introduction

Bonds play a major role in government and corporate finance and have done so for several centuries. The bond market consists of two parts. In the primary bond market, states, local governments and private-sector institutions issue bonds to finance their investments and other activities. In the secondary bond market, investors exchange bonds and set market prices that guide the pricing of stocks and bank loans and work as vehicles for facilitating the issuance of new bond loans.

The previous research literature on the history of bond markets has mainly focused on questions related to secondary market developments, compiling long time series on government bond yields or risk premia for investing in financial-sector or corporate bonds. Defaults and repudiations, especially on government debt, have also attracted much attention.<sup>1</sup> By contrast, there are relatively few studies of the amounts raised or borrower composition in the primary markets, that is, of new bond issues or bonds in circulation. One possible explanation for this relative disinterest in the primary bond market could be a lack of data. While market prices have been published regularly in media and stock exchange listings and government debt repudiations are political events receiving considerable attention, detailed information about new bond issues or the amounts of bonds in circulation is less accessible.

In this chapter, a new database on the historical evolution of Sweden's primary bond market is presented for the period from its emergence in the 1830s to the present day. The main focus will be on the compilation and presentation of the new database, which consists of time series over aggregate amounts of new bond issues and bonds in circulation. The new data cover the universe of bond borrowing by the Swedish government, municipalities, different kinds of financial institutions, and corporations. The series cover both domestic debt issued to Swedish investors and denominated in Swedish kronor, and external debt issued to foreign markets and denominated in foreign currency.

What is missing in the new database is information about individual bond issues.

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1 For overviews of this international literature, see Reinhart and Rogoff (2010) and Flandreau and Zumer (2014). For analyses of the Nordic countries, see Klovland (2010) and Waldenström (2014).

Instead, the series build on previously published aggregate market compilations. Constructing a database based on individual bond loan data would require more effort than the present project allowed. However, such a project would not be impossible, since most of the necessary source materials are available, as discussed below.

When looking at the evolution of the Swedish primary bond market, a strong feature is its close association with the activities of the borrowing institutions. Mortgage institutions were the first in Sweden to issue bonds as a structured means to generate financing, mainly for agriculture in the nineteenth and twentieth centuries. The mortgage associations and credit institutions based most of their lending to farmers on bond financing, but in the twentieth century, loans to housing became more important. The state and municipalities started issuing bonds in the middle of the nineteenth century. Government bonds soon became central to the bond market, both in terms of their increasing share of the primary market and because government bond yields in the secondary market evolved into references for risk-free rates of return. The National Debt Office (*Riksgäldskontoret*) was a key organiser of the issue of government bonds and thus the leading actor of the Swedish national debt policy in both domestic and foreign bond markets. In fact, the entire Swedish government debt was in the form of bonds in the late 1850s, a large portion of which financed expansion of the state railway network. The state-controlled Mortgage Bank was another major actor that later became important, especially for financing agriculture alongside private actors.

During the twentieth century, there were a number of important changes that affected the bond market. Due to the rapid growth in the Swedish economy in the 1910s and the turmoil of the First World War, the Swedish government was able to repurchase most of its foreign debt. During this decade, the country in effect went from being capital importer to capital exporter. The Second World War led to a number of capital market regulations that put most of the primary bond market under the direct control of the government and the Riksbank. Most of these regulations were lifted in the 1980s and 1990s, which laid the ground for an increase in private-sector bond issues. This trend continued after the turn of the millennium.

The remainder of the chapter is organised as follows. Section 2 presents the historical sources for the bond data and how the series have been constructed. Section 3 shows the main trends in the issue of new bonds and the amount of bonds in circulation. The outcomes are presented separately for different sectors and places of issuance. The section also discusses the role of bonds in the financing of the private corporate sector. Section 4 concludes and highlights questions for future research.

## Data and measurement

A bond is a fixed-interest debt security where the borrowers promise to follow certain repayment forms in relation to the lenders. Its primary function is to serve as a financing instrument for institutions in need of credit, for example, the state, municipalities or industrial firms. The analysis of this chapter focuses on bonds and debentures (*förlagslån*), both of which are debt securities with longer maturities. Money market instruments such as treasury bonds (*statsskuldsväxlar*) or bank certificates have shorter maturities, at most one year, and are not studied here.

Bonds started being issued in Sweden in the 1830s. This was in the early stages of the formal credit market, in which bank lending and other forms of borrowing were still limited. Bonds emerged as a simple loan form for both lenders and borrowers, guaranteeing repayment and often being backed by secured collateral and mortgages. This new format reduced risk premia and gave lower interest rates. As a consequence, the traditional short-term credits of companies could be extended as time passed.



Swedish government bond loan of 1934, 3 percent coupon, issued by the Government Debt Office (Riksgäldskontoret). This was the last government “consol”, that is, a loan without a specified maturity date, and it was therefore called “the eternal three” (*eviga trean*).

The earliest bond loans issued in the 1830s–1850s often came without predetermined maturity dates. Instead, they carried certain expiration terms in the form of dates set in advance for the earliest termination of the loan. The termination date functioned as a guarantee mainly so that the borrower was not forced to repay the loan without due notice. Government and municipal loans were often exempt from these rules and could not be terminated by lenders. In the 1860s, the indeterminate running time of bonds was replaced with predetermined expiration dates, maturities, which were often set to a period between 10 to 40 years after the loan issue. At maturity, the loans were redeemed in the printed nominal value. However, repayment sometimes took place through partial payments in special redemptions, which were drawn from the loan amount. Some government loans remained as “perpetual” loans, or consols, that had no final maturity date. By the middle of the twentieth century, these government consols had finally vanished from the market and were replaced by bonds with fixed maturities.

### *Sources for bond data*

Historical data on the primary bond market in Sweden are available in various market compilations published since the late nineteenth century. The first such compilation is Cervin (1875), produced by the private banker C. G. Cervin who was one of Sweden’s most active bond underwriters in the nineteenth century. His compilation listed all bonds in circulation around 1875 that had been issued by the central government, municipalities, mortgage institutions and corporations, the latter being mainly railway companies and manufacturing firms. The listing provided information about each loan, covering variables such as date of issue, amount issued, currency denomination, maturity information (terms of repayment), name of underwriting banks, coupon interest rate and coupon payment schedule. Updated listings were published in Cervin (1884) and Håkansson (1901). Flodström (1912) compiled this evidence into annual time series across borrowers and currency between the first bond loan in 1835 and 1908.

The main modern source for the Swedish primary bond market was the Swedish Banking Association’s “bond catalogue”, which was published tri-annually from 1911 until 1997. The bond catalogue became the official publication for bond market information, listing the same characteristics about each bond loan as in earlier publications but also compiling the evidence in national and sectoral summaries of issued and outstanding bonds.

The later post-war period also saw Statistics Sweden and the Riksbank publishing summary statistics on the Swedish bond market. This offers valuable complementary aggregate evidence about the market up until the present day. Specifically, Statistics Sweden has different sources for the bond market data. Its Statistical Yearbook published aggregate series up until 2012 (but was discontinued in 2014). The Statistics Sweden website contains a spreadsheet with monthly data for 1997–2013 and monthly evidence from March 2013 as part of its online database.

The image shows two pages from a historical bond catalogue. The left page is titled "Svenska Statens och Sveriges Allmänna" and the right page is titled "Hypoteksbanks Obligationstjän". Both pages contain detailed tables of bond issues. The tables have multiple columns, including loan size, coupon rate, dates of coupon payments, and maturity. The text is in Swedish and the tables are organized in a grid-like format with various sub-sections and headings.

*Bond issue data from the bond catalogue, issued by the Swedish Bankers' Association since 1911. The catalogue reported information about all bonds issued in Sweden. The information concerned the loan size, coupon rate, dates of coupon payments and maturity, underwriting banks and other loan-specific features.*

The main sources used to compile the evidence for this study are as follows. For the nineteenth century and early twentieth century, series come primarily from the compilations in Flodström (1912) and with some complementary information in Cervin (1875). The period from 1911 until the 1980s is based on data in the bond catalogues issued by the Swedish Bankers' Association. Finally, from the early 1980s until the present day, series published by Statistics Sweden and the Riksbank comprise the main source.

### *Measurement*

There are several aspects to account for when measuring the value of bonds over historical periods. Two main bond variables will be reported and analysed: the value of new bond issues and the value of bonds in circulation. These two variables comprise the most relevant aspects of the primary bond market. New bond loans show the credit flow to borrowers at each point in time. Bonds in circulation show the current stock of bond loans that exist in the capital structure of borrowing institutions. There are no comprehensive data available on the number of bonds newly issued or in circulation.

Measuring the value of new bond issues is relatively simple for most years in the studied period. Compilations were possible to make since information about new loans was published in media together with documented details of the loan (issue terms, interest rates, underwriting banks, repayment clauses, earliest and final repayment dates and so forth). An exception in data availability is the post-1982 period, when official statistics about the bond market deteriorate, especially concerning foreign loans. As a consequence, the series for newly issued bonds to foreign markets or in foreign currency is not complete in the early 2000s.

Historical data on bonds in circulation are scarcer, available only for certain periods. The reason is that there are few examples of contemporary surveys or reports on the stock of outstanding loans. Before the comprehensive assessment by Flodström (1912) of the stock of bonds in circulation in 1908, there are no estimations of the bonds still in circulation. From 1911, the Bankers' Association estimated the stock of outstanding bonds every three years, and this was done annually from the 1980s onwards.

In order to estimate the stock of bonds in circulation prior to 1908, annual rates of repayment (as a share of accumulated bond issues) are calibrated so as to match the levels of 1908. There is scattered information about actual repayment schemes that could be used to estimate the stock of bonds from the reported bond issues. In some cases, repayment follows a pre-defined schedule. For almost all loans, there is also a final maturity date at which the entire loan will be reimbursed to lenders according to plan. However, it is reasonable to believe that repayment has sometimes been slower or quicker than scheduled, for example, during the 1910s when many Swedish foreign bond loans were repurchased at a very high rate. This eliminated Sweden's external debt balance within a couple of decades. Several loans do not have a pre-defined repayment plan except for the maturity date, which makes it necessary to assume an average repayment rate (more about this below).

Because of risk-related institutional differences, repayment rates, that is, the share of the outstanding loan stock that was amortised annually, varied across borrower categories and also across domestic and foreign debt. The repayment rates are not directly observed but have to be assumed based on the observed levels in 1908 and the flows of loans issued before then. The following repayment rates were estimated using this method: central government loans were repaid at between 1.5–3 percent in the pre-1908 period, municipalities at 1.2–2 percent, railway companies at 1.5–3 percent, industrial corporations at 5.5–6 percent and other private non-financial institutions at 7 percent. It should be noted that the actual annual variation in repayment rates may differ from these assumed rates, which means that the true stock of bonds in circulation deviates from the one presented here. Having said this, the levels in 1908 are credible and the data on new issues before that are also credible.

Domestic and foreign bond issues represent an important dimension when analysing the primary bond market. Sweden industrialised during the latter half of the nineteenth century and a long-standing discussion in the research literature is to



what extent the financing of Swedish investments were based on foreign or domestic funds.<sup>2</sup> In the statistical sources, bonds are often reported separately as being domestically or foreign-issued. The main variable used to make this distinction is the currency denomination of the loan, being Swedish kronor (SEK) for domestic loans and foreign currency (German marks, British pounds, US dollars, euros etc.) for foreign loans.<sup>3</sup> In the nineteenth and early twentieth century, foreign currency-denominated bonds were generally also underwritten by foreign financial intermediaries, mainly in Germany, France and the UK. In the twenty-first century bond market statistics, loans are divided in terms of issued currency between SEK, euros, US dollars and other currencies.

A problematic aspect concerning the measurement of the amount of domestic and foreign bonds in circulation is that we know too little about cross-border flows in the secondary market when it came to single bonds. For example, the repurchases of Swedish foreign-issued government bonds during the 1910s was recorded internally by the National Debt Office (Franzén, 1998) and the numbers are incorporated in the series used here, but this information is not published in any of the publicly available bond market sources. After the capital account liberalisations in the late 1980s and early 1990s, securities have been transferred freely across country borders. As a result, this study's estimation of bonds in circulation either domestically or abroad is based on the loans' original place of issuance rather than the actual location of their bearers.

The sectoral division of borrowing institutions is centred around four main groups: 1) state (central government), 2) municipalities (local government), 3) financial institutions and 4) corporations. These four groups are relatively consistent over time, but they contain a relatively broad range of actors that are not identical in all periods. The state, or the national sovereign, and the municipalities are quite homogeneous throughout the studied period, representing the same institutional functions and societal entities. By contrast, the financial institutions have changed in nature during the period. Mortgage associations have been the central actors in this category throughout the period, but they have gone from being separate organisations to being owned by commercial banks since the post-war era. Banks, credit institutions and other financial market actors started issuing bonds in the early twentieth century and they are also included in the broad category of financial institutions.<sup>4</sup> Corporations have been mainly manufacturing firms and railway companies, but this cate-

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2 See, for example, Gårdlund (1947) and Schön (1989).

3 In the post-1997 series at Statistics Sweden, currency denomination is the only way in which bond issues are separated geographically.

4 In the post-1970 listings, the statistical sources list bonds issued by banks, credit market companies, investment companies, housing finance institutions, housing institutions, municipal and business institutions, pure business institutions, insurance companies and other financial market actors.

gory also includes other private non-financial institutions such as canal companies and various associations and foundations.

## Evolution in the Swedish bond market

This section presents the main trends in the Swedish primary bond market, from the first bond issue in 1835 up to 2020. The presentation begins with a description of aggregate values of new bond issues and the stock of bonds in circulation. Thereafter, the analysis shows divisions between domestically and foreign-circulating bonds. Finally, there is a discussion of the role of bonds in corporate finance among Swedish industrial firms and railway companies.

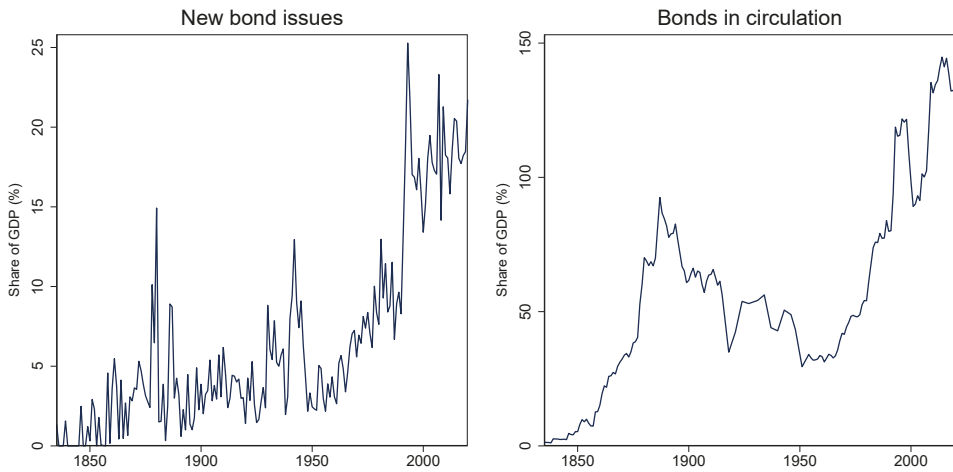
### *Main trends*

Figure 4.1 shows the long-run evolution of Swedish bond issues and bonds in circulation over the entire 185-year period since 1835. The economic importance of bonds appears to have increased over the period, although at a somewhat different pace across different eras. The left panel shows the annual flow of new bond issues as a share of GDP. The flow hovered around 5 percent until the 1970s after which it increased significantly up to 15–20 percent in the 2000s. There are several notable wartime and crisis-related spikes which will be discussed further below. The right panel shows the stock of bonds in circulation as a share of GDP. It exhibits a similar increasing long-run time trend as the bond issues, but with a more distinct periodisation in the trends. Two periods were clearly expansionary for the bond market, the pre-1890 and post-1980 periods, and in between there was a stable, or even slightly stagnant, period.

Evidence on the creditors to Swedish bond issuers is relatively scarce. Kock's (1961) study of interwar credit market notes that savings banks, insurance companies, funds and other types of financial associations were the largest bond purchasers. The state, industrial companies and mortgage institutions were the most active borrowers in the 1920s.<sup>5</sup>

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5 Kock (1961): pp. 35 ff.

**Figure 4.1:** Bonds issued and in circulation in Sweden, 1835–2020 (% of GDP)

A more detailed picture of the long-run patterns is offered in Figures 4.2 and 4.3, in which the series are disaggregated across borrowing institutions. This disaggregation sheds new light on a number of historical patterns.

Looking first at bond issuances, several notable spikes appear in the data series. The first occurs around 1880 in connection with the rapid expansion of railways in Sweden and a large increase in the issuance of bonds by private railway companies. These were bonds with 10–30 years to maturity, promising regular coupon payments around five percent and marketed by private banks and banking firms to domestic investors. The railway bond expansion of the 1860s and 1870s was an international phenomenon, linked to technological developments in the automation and railway industries across Europe. After an international recession in the early to mid-1870s, several railway companies started getting less traffic and lower revenues, making it difficult for them to keep up their coupon payments to creditors. This, in turn, instigated a financial crisis in the latter half of the decade that affected several banks and financial intermediaries that had kept railway bonds in their own portfolios. As a consequence, some actors went bankrupt and some were salvaged by emergency loans from the Riksbank or by making new bond issues of their own. The series shows that the crisis was succeeded by a few large financial and government bond issues.

In the early 1930s and through the Second World War, government bond issues increased to meet the strongly increased financing need for public investments and defence spending during this turbulent period. Interestingly, there was no equivalent bond financing activities during the First World War, which instead was a period when the Swedish government exported capital to the continent through repurchases of previously foreign-issued bonds.



*A poster from 1941 advertising one of the Swedish government's three government bond loans issued during the Second World War with the aim to fund the country's military mobilization. The slogan says "For defence and work. The second defence loan".*

After the Second World War, the Swedish bond market contracted and underwent a compositional change. New bond issues decreased for corporate borrowers and to some extent for financial institutions while government bonds continued to be issued. Overall, however, the first post-war decades saw a contraction of the bond market relative to GDP. The amount of bonds in circulation fell to its lowest level since the 1860s. This contraction had several causes, one of the most important being the new credit and capital market regulations that were introduced during the war and retained afterwards. These restrictions implied among other things that all new bond issues had to be approved by a supervisory board at the Riksbank, which effectively channelled resources from private issuers to the government bond issues.

In the 1980s, credit and capital market regulations were gradually phased out. Along with a general economic recovery after the structural crisis of the 1970s, this led to a revival in the bond market. There are two notable spikes in government bond issuance during the post-1980 period. The first was in the early 1980s, and the other was after the major Swedish economic crisis of the early 1990s. After the 1990s, government bond issues started to decrease in relative importance and this is also reflected in the bonds in circulation (see Figures 4.4 and 4.5). One explanation for the reduction in government bond issues is the new fiscal policy framework that came into force in the 1990s, in which smaller budget deficits and public debt ceilings were introduced.

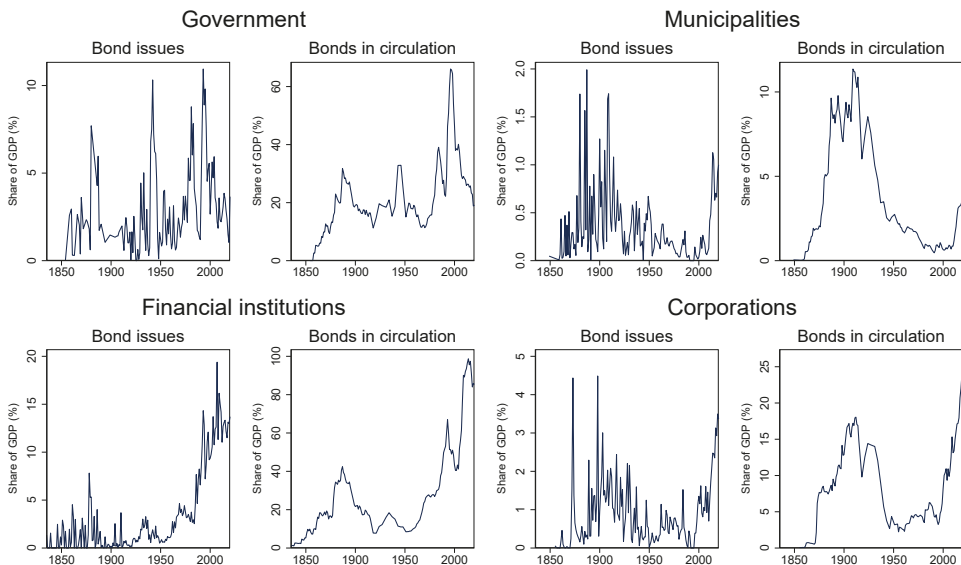
Municipalities have been active borrowers on the Swedish bond market since the

middle of the nineteenth century. Their bonds represented up to ten percent of all bonds in circulation from the late nineteenth century up to the mid-twentieth century. During the post-war period, municipalities almost stopped issuing bonds and most of their bonds went out of circulation. Around 2010, municipalities again started issuing bonds which could be associated with the tightening of legal balance requirements for municipal budgets.

Financial institutions have been the main bond-issuing sector in Sweden since the emergence of the bond market in the 1830s. Figure 4.3 shows that they dominated the bond market in the nineteenth century and after the Second World War. After the market deregulations of the 1980s, there has been strong growth in the issuance of mortgage-backed bonds in particular. There are notable spikes in the mid-1990s and in 2007. While these are temporarily associated with the financial crises, they also reflect the expansion of the Swedish housing market (Lundgren, 2021).

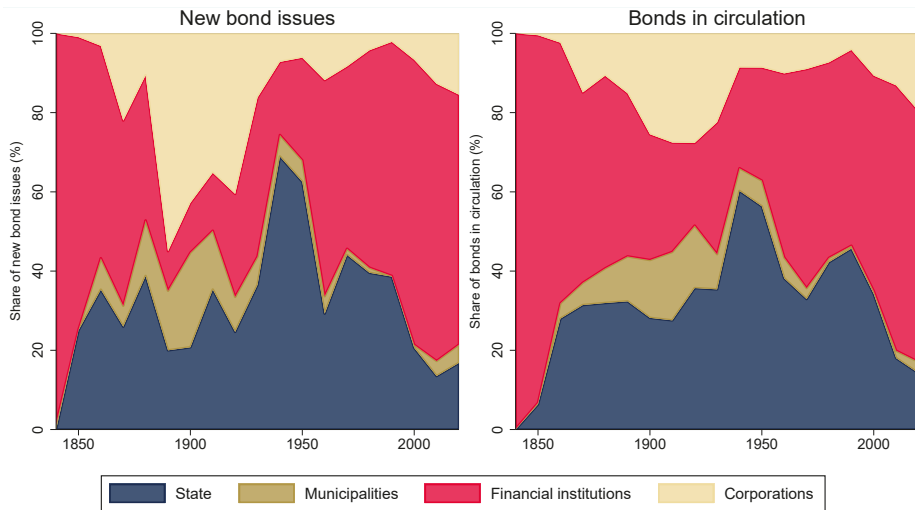
Corporations have long since played a quantitatively small role as borrowers throughout most of Sweden’s bond market history. However, starting with the railway bond boom during the 1860s and 1870s and extending over the industrial expansion in the late nineteenth century and early decades of the twentieth century, Sweden had a relatively lively corporate bond market. Around 1900, half of all new bond issues came from the corporate sector. The increased regulatory pressures during the Second World War and the post-war era put an end to Swedish corporate bond activities. New issues almost ceased altogether for several decades and not even the deregulated 1980s and 1990s sparked a revival. Since the 2000s, the Swedish

**Figure 4.2:** Bond issues by Swedish borrowing institutions, 1835–2020 (% of GDP)



corporate bond market has grown steadily. In the 2010s, corporate bonds represented 10–15 percent of all new bond issues. Bonthron (2014) shows that the expansion is largely driven by bond issues from the car industry and companies in the real estate and construction sectors.

**Figure 4.3:** *Share of issued bonds by borrower category, 1835–2020*



### *Domestic and external debt*

The geographical location and currency denomination of the issued bonds constitute an important dimension for both debtors and creditors. Governments have in different eras been able to deflate away loans by repaying them through money-printing. Some borrowers may not be internationally renowned enough to float loans abroad. The home country may not be rich enough to offer sufficient capital for new bond loans, and borrowers are forced to turn to foreign creditors.

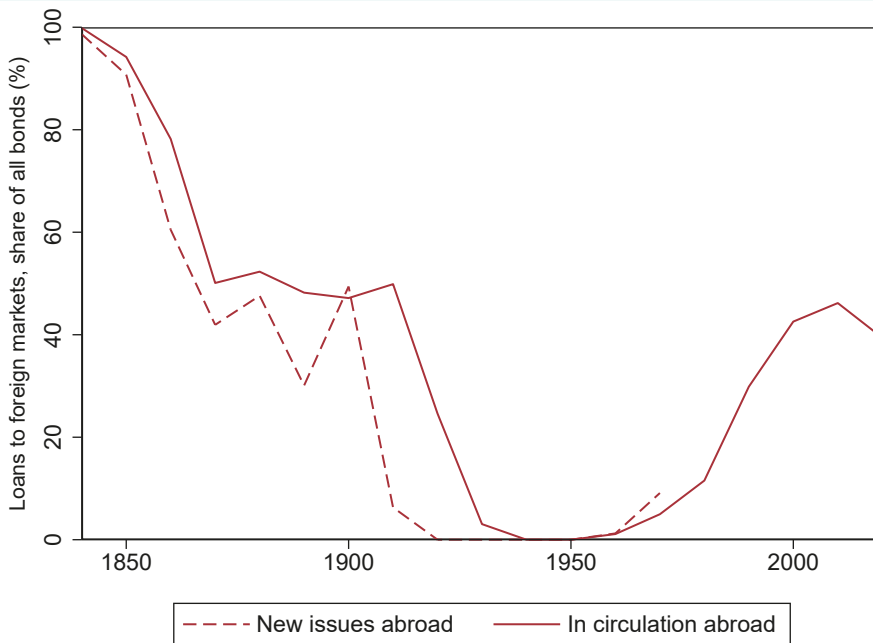
Swedish economic history shows how the country went from being relatively poor in the nineteenth century to relatively rich in the twentieth century. This development is reflected in the evolution of the country's primary bond market. Figure 4.4 shows the share of foreign, or external, bond loans, which here refer to loans sold to foreign markets and (or) being denominated in foreign currency, of all newly issued or circulating Swedish bond loans. The figure shows that Swedish bonds were initially only issued to foreign markets up until the 1870s. Thereafter, domestic creditors started to purchase bonds between 1870 and 1920, when about half of all bonds were floated abroad and half was floated domestically. According to the listings in Cervin (1875), practically all foreign-issued bonds in Sweden up to the 1870s were

placed in Germany, with banking houses Bethmann and Erlanger in Frankfurt am Main, and the North German Bank in Hamburg and the banking firms Salomon Heine and Warburg. Later in the nineteenth century, Swedish bonds started being placed not only in Germany but also in other countries, predominantly Great Britain, France and Denmark. Prominent underwriting banking firms in the listings of Håkansson (1901) include Hambro, Rothschild and Carnegie in London, Rothschild and Credit Lyonnais in Paris, and Den Danske Landmansbank and Hypotek- og Vekselbank in Copenhagen.

In the early twentieth century, domestic creditors became more important. This development was particularly accentuated regarding government debt. Sweden stayed neutral in the First World War, and, as an indirect consequence, the country could accumulate funds to repurchase foreign government bonds and went from being capital importer to capital exporter. Studies by Kock (1961) and Franzén (1998) show that the share of foreign bondholding of the state's total funded debt went from about 90 percent in 1913 to about 21 percent in 1922 (Kock 1961, Franzén 1998).

From the 1920s and up until the 1980s, Swedish bond issuers were only active on the domestic capital market. There are several partial explanations for this develop-

**Figure 4.4:** Domestic and foreign shares of bonds in circulation, 1835–2020

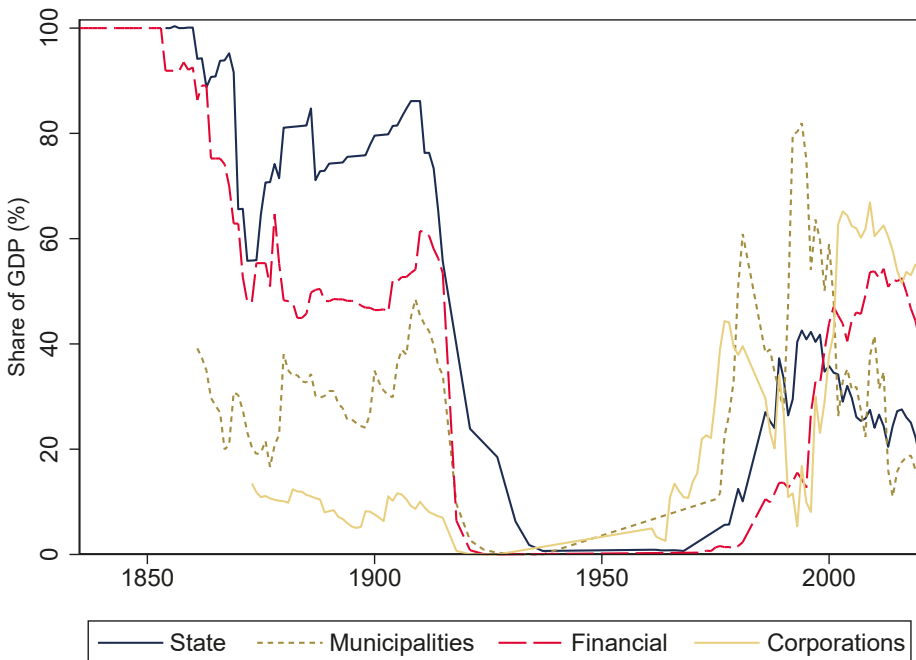


*Note:* There is a lack of data on foreign-issued bonds for some years in the post-1980 period which explains the missing points for that period.

ment. Sweden was industrialising rapidly and domestic investors were able to accommodate new bond issues during this era. The post-war period brought strict capital account regulations that restricted cross-border capital flows. Furthermore, credit and capital market regulations implied that Swedish financial institutions were required to overtake new bond issues, especially those of the public sector. The 1980s and 1990s came with deregulations of most financial markets, and some institutions started issuing bonds abroad. In the 2010s, the foreign share of bonds in circulation was around 40 percent, which is close to the levels seen a century before.

Figure 4.5 decomposes foreign bond issue activities across borrower categories. The figure shows that in the nineteenth century, mortgage associations and the central government placed almost all of their bond loans in foreign markets. By contrast, bonds issued by municipalities and corporations were mostly issued to the domestic market in the early historical era. The shift to domestic creditors in the twentieth century is clearly noticeable in the figure and all borrower categories were affected by it. It is interesting to note that the post-1980s reversal into more foreign borrowing is the most marked for municipal and corporate bonds.

**Figure 4.5:** *Share of foreign bonds of all bonds in circulation, by borrower category.*





### *Bonds and corporate finance*

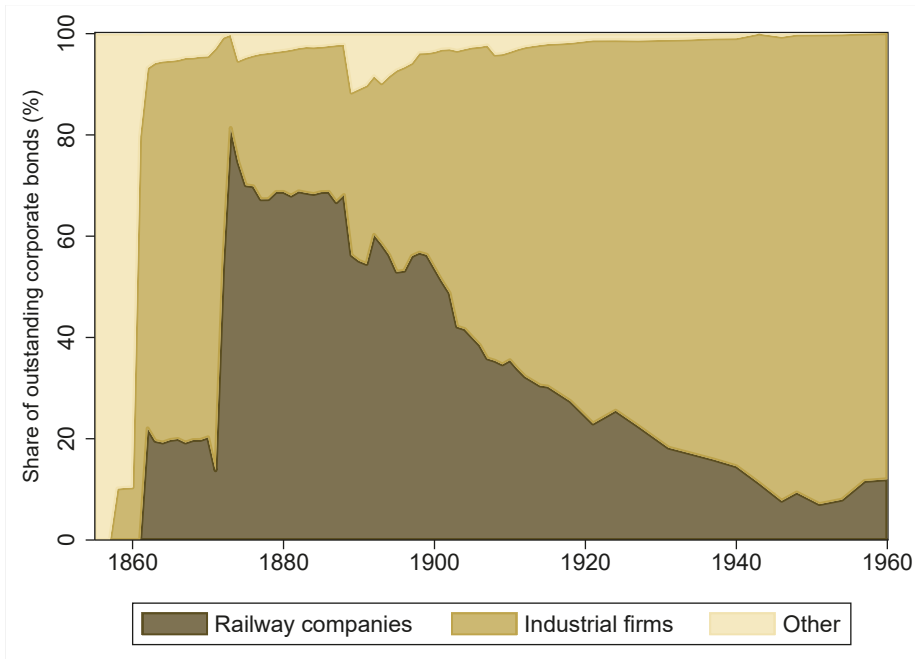
What role did bonds play in the financing of Sweden's industrial revolution in the nineteenth and early twentieth centuries? How has its role developed during the twentieth century, and what does it look like now? Questions about how bonds contributed to industrialisation have been studied in the Swedish economic history literature, but it is fair to say that consensus has not yet been reached. For example, Gårdlund (1947) is an important study of industrial finance in Sweden up to the 1910s. This study presented hand-collected balance sheet information of Swedish industrial firms and examined the main sources of external finance, as presented in Table 4.1. The evidence suggests that bond loans went from being quantitatively unimportant in 1870 to being the major source of external finance in 1910.

**Table 4.1:** *The capital structure in the industrial sector 1870–1910 (%)*

	Promissory note loans	Debenture loans and advances	Bank loans	Bonds	Total
1870	39	25	33	4	100
1890	48	6	33	13	100
1910	21	3	39	37	100

*Note:* The figures are taken from Gårdlund's study of industrial companies. Source: Gårdlund (1947, p.161).

The bond data presented in this chapter could complement Gårdlund's study. Figures 4.2 and 4.3 showed that corporate bonds grew in importance during the end of the nineteenth century and that they remained relatively sizeable up until the Second World War. To gain further insight, Figure 4.6 presents a decomposition of the corporate bonds by distinguishing between three different kinds: railway companies, industrial manufacturing companies and other companies (mainly canal companies). These were reported as three separate categories in the historical sources up to the 1950s. The analysis shows that railway companies gained importance after the 1860s and 1870s and became the most important corporate bond issuer up until the 1910s when manufacturing firms gradually took over.

**Figure 4.6:** *Corporate bonds in circulation, by borrower category, 1855–1960.*

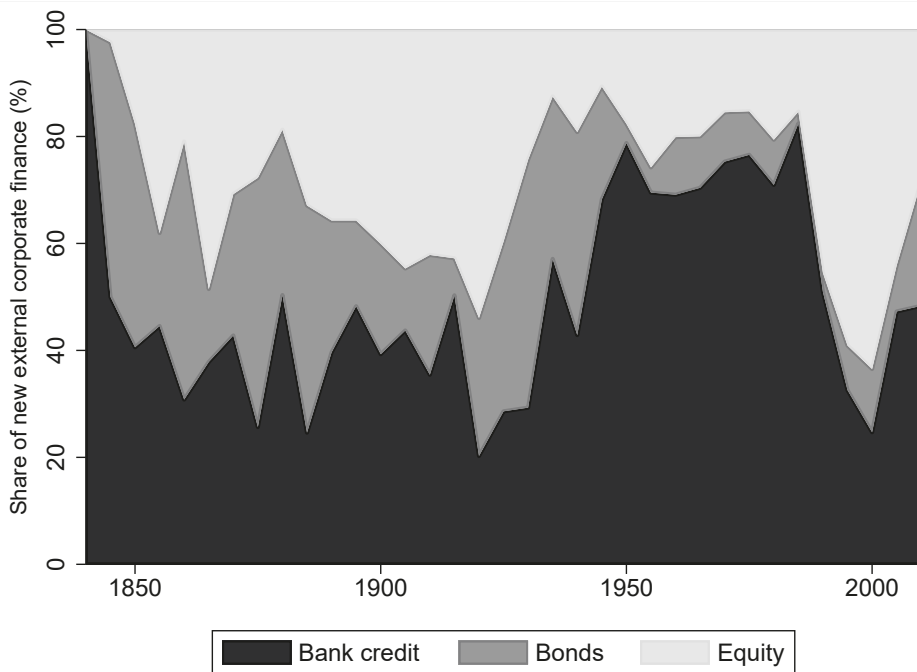
Another way to assess the role of bonds in industrial finance is to compare them with the other two main channels of external corporate finance: bank loans and share issues. Figure 4.7 provides a preliminary picture of this. It shows the relative shares of the flow of funds coming from bank credits, bond loans and new equity issues. Data on bank credit come from Ahnland (2022) and Fregert (2022), and the series is calculated by taking first differences of the stock of outstanding bank credit with mortgage credits removed in the post-war era.<sup>6</sup> Data on new equity issues come from Waldenström (2016) and includes all new corporate capital issued since the Corporate Law of 1848, including bonus issues. Bond issues come from this chapter’s new database.

The patterns in Figure 4.7 suggest that bank credit has been the overall most important source of external funding of firms over the past 185 years. In these series, bank loans represent between 40 and 80 percent of all new external funding to Swedish firms. New equity issues and bonus issues have also been important, representing between 20 and 40 percent. Finally, corporate bond issues have represented between 10 and 20 percent. A couple of things to note with these results. First, the picture

<sup>6</sup> The official statistics on private bank lending to firms is complicated by the fact that during most of the historical period, loans to firms and households are reported under one and the same category (“the public”). Despite this, the present analysis uses changes in the total bank lending up until 1945 when mortgage lending is removed.

may differ when we look at funds in circulation, that is, the outstanding amounts of bank credit, corporate equity and bonds. Second, some bank credits to firms may be funded by bond loans of banks and other financial intermediaries, which would suggest a larger role of bonds in Swedish corporate finance than the figure shows. These findings are largely in line with the evidence presented in Table 4.1 above, which was based on the examination of the corporate capital stock, that bank loans were particularly important for industrial firms throughout the industrialization era but that bonds became more important over time.

**Figure 4.7:** *External corporate funding: Bank credit, bonds and equity, 1835–2020.*



### *International comparison*

The past research literature on historical bond markets is relatively limited, particularly concerning international historical comparisons of primary bond markets. Reinhart and Rogoff (2010) and Flandreau and Zumer (2014) compile data on government debt, including central and local government and domestic and external debt. Using their databases, Table 4.2 compares the share of total government bond loans of GDP in Sweden with five other European countries for which data are available for single years between 1880 and 2020.

The international comparison shows that Sweden is a country that has had a rela-

tively low level of public-sector indebtedness throughout history. The selected years in the table suggest that over the past 140 years, Sweden's consolidated government debt hovered between 20 and 40 percent of GDP (with higher levels in single periods, especially the 1980s and 1990s). Furthermore, the table shows that the other Nordic countries also exhibit relatively low government debt levels today and historically (with the exception of Finland in 2020). By contrast, France has had much higher levels of public debt several times in the past, often in relation to wars. Germany has lower debt levels than France both historically and in 2020.

**Table 4.2:** *General government debt (% of GDP), 1880–2020.*

	France	Germany	Sweden	Denmark	Norway	Finland
1880	96	37	28	24	16	
1913	66	42	26	16	20	11
1938	161		19	17	26	10
1950	27	18	18	46	32	25
1980	21	30	23	35	47	11
2020	108	65	41	41	41	65

*Note and sources:* Table shows sum of central and local government debt issued both domestically and abroad. Data come from Reinhart and Rogoff (2010), Flandreau and Zumer (2014), Eurostat, and this chapter. Some years are not exactly as in the table: Finland 1914 not 1913, France 1931 not 1938 and Sweden 1951 not 1950.

## Concluding remarks

This chapter has presented a newly collected and compiled database on Sweden's primary bond market over the past 185 years. The main purpose has been to complement the picture of Sweden's economic history. Government and corporate borrowing have helped finance both public-sector investments in infrastructure and other institutions and private-sector investments in agriculture and industrial production.

The new time series cover both issues of new bonds and estimates of the value of outstanding bonds in circulation. A sectorial division was made to study where in the Swedish economy bonds have been used to finance activities. The extent of domestic and foreign borrowing and the relative importance of bonds in total corporate finance are two additional dimensions analysed.

Several interesting historical patterns emerge from the new data. In the nineteenth century, bonds were initially a way for farmers to attract funding through mortgage association bonds issued mainly in Germany. The state soon became a dominant

bond issuer later in that century. First, the purpose was to finance the state-led railway expansion, and later in the twentieth century, bonds have been used fund military armaments, especially during the World Wars, and later to finance the welfare state. Municipalities have used bond financing to fund larger investments as well as welfare-related expenditure. Looking at private-sector bond issues over the past two centuries, financial institutions, mainly banks, have used bonds to fund their lending, in recent decades in the form of mortgages. Corporations used bonds to finance their investments up to the interwar era, then stopped doing so due to the tightening of post-war regulations, but have again started issuing bonds on a larger scale since the 2000s.

The chapter's data are aggregate time series, offering a broad picture of the long-run developments and the overall role of bonds in the Swedish economy. However, a deeper understanding of the role of bonds requires richer data on individual loans across several dimensions. A richer database can indeed be constructed since the sources named in this chapter contain such individual bond loan information back to the 1830s, including details about interest rates, currency denomination, repayment clauses and involved actors. Hopefully, this chapter can inspire others to engage in such a research project that would shed even more light on the role of bonds in the development of the Swedish economy.

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## Appendix tables

Table A4.1: *New bond issues*

	<i>Total</i>	<i>Gov.</i>	<i>Municip.</i>	<i>Financial</i>	<i>Corp.</i>	<i>Railway</i>	<i>Industry</i>	<i>Oth. corp</i>
1835	6			6				
1836	0			0				
1837	0			0				
1838	0			0				
1839	8			8				
1840	0			0				
1841	0			0				
1842	0			0				
1843	0			0				
1844	0			0				
1845	0			0				
1846	13.333			13.333				
1847	0			0				
1848	0			0				
1849	6.942		0.275	6.667				
1850	1.872			1.872				
1851	17.733			17.733				
1852	14.839			14.839				
1853	0			0				
1854	13.188	0.282		12.906				
1855	0.5			0	0.5			0.5
1856	0.25			0	0.25			0.25
1857	0			0	0			
1858	38.631	21.841	0.1	16.62	0.07		0.07	
1859	1.358		0.07	1.288	0			
1860	32.58	26.667	0.58	5.333	0			
1861	52.248	3	4.16	43.188	1.9		1.9	
1862	36.551		0.245	31.806	4.5	1.5	3	
1863	4.35	3	0.35	0	1		1	
1864	40.541	9.891	0.94	29.41	0.3		0.3	
1865	4.575		4.575	0	0			
1866	27.092	26.486	0.5	0	0.106		0.106	
1867	6.72		3.82	2.5	0.4		0.4	
1868	31.319	20.7	0.619	10	0			
1869	29.484	4	5.334	20	0.15		0.15	
1870	40.34	40	0.34	0	0			
1871	41.11		2.038	36.272	2.8		2.8	
1872	69.997	24	3.868	21.741	20.388	14.188	6.2	
1873	73.895		4.565	0	69.33	63.53	5.8	

	Total	Gov.	Municip.	Financial	Corp.	Railway	Industry	Oth. corp
1874	62.717		2	38.417	22.3	10	6.3	6
1875	49.896	36.882	2.66	0	10.354	1.434	8.92	
1876	45.461	36.62	0.9	0	7.941	4.5	3.441	
1877	39.436		11.077	22.229	6.13	0.25	5.88	
1878	152.433	27.24	2.866	117.807	4.52	2.2	2.2	0.12
1879	93.759	9	4.93	76.344	3.485	3.25	0.235	
1880	230.105	118.746	26.81	82.108	2.441	0.856	1.575	0.01
1881	23.582		6.485	11.997	5.1	1.8	3.3	
1882	24.87		2.34	13.5	9.03	6.41	2.62	
1883	63.101		4.097	53.894	5.11	2.31	2.8	
1884	5.465		3.815	0	1.65		1.45	0.2
1885	40.127		25	8.197	6.93	4.4	2.35	0.18
1886	133.951	64.546	4.84	60.33	4.235	2.125	2.11	
1887	124.433	85.144	28.439	6	4.85		4.85	
1888	46.303	26.667	1.445	14.561	3.63	3.33	0.2	0.1
1889	69.16		3.595	28.24	37.325	6.25	15.575	15.5
1890	55.129	35.556	13.273	1	5.3		5.3	
1891	10.6		0.06	5	5.54	0.9	4.64	
1892	39.911		11.83	0.756	27.325	23.6	3.7	0.025
1893	17.384		4.794	0	12.59	2.95	5.71	3.93
1894	76.755	18	15.419	20.086	23.25	8.086	15.164	
1895	25.085			0	25.085	5.685	19.25	0.15
1896	19.69		4.32	2	13.37	5.82	7.55	
1897	36.812		3.751	8.421	24.64	18.08	6.41	0.15
1898	110.858		2.125	7.178	101.555	57.345	44.21	
1899	55.716	36	11.742	0.374	7.6	0.5	6.6	0.5
1900	97.455	36.32	32.025	5	24.11	2.7	20.91	0.5
1901	49.085		13.65	0	35.435	7.66	27.775	
1902	78.148		19.915	13	45.233	11.67	32.163	1.4
1903	91.051		6.149	6	78.902	6.59	68.172	4.14
1904	144.623	36	3.3	68.293	37.03	10.18	26.85	
1905	77.99699		31.71	5.097	41.19	6.28	34.91	
1906	116.586	43.2	22.332	14.304	36.75	3.65	32.4	0.7
1907	97.235	46.8	6.63	0	43.805	0	43.805	
1908	190.128	54.48	56.19	11.798	67.66	16.95	38.71	12
1909	101.667		57.424	7.693	36.55	3.7	31.25	1.6
1910	219.434		31.614	130.848	56.972	19.517	37.235	0.22
1911	164.476	72	14.95	2	75.526	10.025	65.501	
1912	92.622		11.858	8.514	72.25	8	64.25	
1913	123.781	24.48	26.401	29.5	43.4	1.5	41.9	
1914	189.612	77.521	46.3	22.451	43.34	0.9	42.44	
1915	215.764	121.177	23.098	38.249	33.24	3.2	30	0.04



	Total	Gov.	Municip.	Financial	Corp.	Railway	Industry	Oth. corp
1916	248.139	119.177	18.976	20.361	89.625	10.35	75.35	3.925
1917	298.533	72.629	32.75	19.467	173.687	52.632	121.055	
1918	288.527	98.192	71.099	32.336	86.9		86.9	
1919	352.481	190.112	48.816	16.768	96.785	5	91.425	0.36
1920	185.696	4.793	55.846	29.357	95.7	31	64.7	
1921	410.459	158.693	57.211	16.555	178	1	177	
1922	233.709	37.704	36.899	69.906	89.2	30.5	57.2	1.5
1923	433.776	207.737	16.794	84.245	125	24	101	
1924	222.231	118.248	6	83.183	14.8	11	3.8	
1925	128.812	0.416	27	53.696	47.7	3.4	42.8	1.5
1926	146.65	0.349	5	72.401	68.9	10.2	58.7	
1927	247.772	57.416		58.456	131.9		131.5	0.4
1928	341.462	7.079	17.766	110.815	205.802	11.652	193.55	0.6
1929	232.648	44.092	5.977	92.979	89.6		88.8	0.8
1930	869.673	437.525	25.098	194.285	212.765	27	185.765	
1931	548.001	227.612	27.521	170.202	122.666	3.6	119.066	
1932	464.645	151.111	34.47	259.064	20	20		
1933	669.658	428.081	49.577	179.668	12.332		12.332	
1934	494.656	162.782	48.967	224.91	57.997	9.197	48.8	
1935	506.423	59.505	10.444	331.323	105.151	10.116	95.035	
1936	617.063	317.323	35.037	221.333	43.37	1.17	42.2	
1937	731.3359	115.687	74.163	349.761	191.725	5.45	186.275	
1938	247.846	36.126	34.606	115.264	61.85	8.35	53.5	
1939	431.576	103.293	58.348	193.735	76.2	6.5	69.7	
1940	1181.052	1007.01	80.711	84.335	9	6	3	
1941	1537.431	1224.48	25	236.75	51.2	8.5	42.7	
1942	2332.459	1858.52	29.972	342.767	101.2		101.2	
1943	1763.159	1410.03	39.866	261.665	51.6		51.6	
1944	1501.098	1260.81	0.741	196.877	42.67		42.67	
1945	1918.491	1291.41	82.52	484.054	60.51		60.51	
1946	1526.844	1122.49	75	259.426	69.923	18.942	50.981	
1947	1149.875	338.918	131.148	345.918	333.891	64	269.891	
1948	640.368	31.983	125	316.385	167	0	167	
1949	1011.195	489.912	204.237	156.546	160.5	0	160.5	
1950	908.445	448.653	206.761	245.531	7.5	0	26	
1951	1055.5	380.1	231	397.4	47	0	146.5	
1952	1106.9	528.8	185	294.6	98.5	30	122	
1953	2580.6	2022.6	25	331.5	201.5	30	180.5	
1954	2635.4	2182.5		324.9	128	40	98	
1955	1732	1036	80	535	81	0	41	
1956	1373.6	566.6	179.4	499.6	128	12	116	
1957	2622.5	1599.8		808.7	214	83	131	

	Total	Gov.	Municip.	Financial	Corp.	Railway	Industry	Oth. corp
1958	2177.8	1089.2	150	783.6	155	30	125	
1959	3278	2320.3		823.7	134	0	134	
1960	2543.8	1211.3	140	936.5	256	30	192	
1961	2357	600	110	1332	315			
1962	5018	969	290	2658	1101			
1963	5930	3278	400	1687	565			
1964	5615	1354	445	3180	636			
1965	4349	778	290	2691	590			
1966	6477	1050	240	4502	685			
1967	9423	2524	275	5135	1489			
1968	11304	3915	385	5623	1381			
1969	12629	3523	305	8073	728			
1970	10876	2612	295	7239	730			
1971	14612	3995	400	8517	1700			
1972	14830	4977	470	7770	1613			
1973	20832	9427	525	9332	1548			
1974	21450	6745	490	12820	1395			
1975	28492	12545	433	12894	2620			
1976	27155	11513	420	12182	3040			
1977	25871	9168	300	13518	2885			
1978	46713	27311	365	16372	2665			
1979	43678	23897	283	16453	3045			
1980	45302	27268	222	16447	1365			
1981	84124	57005	270	24334	2515			
1982	65929	42864	715	19060	3290			
1983	91111	62323	1270	23498	4020			
1984	75244	36874	1975	22756	13639			
1985	85517	34803	1610	43782	5322			
1986	122818	33203	3302	81783	4530			
1987	77129	20000	1060	53664	2405			
1988	112465	20600	455	90510	900			
1989	134761	19000	500	115161	100			
1990	127544	18500	860	101316	6868			
1991	220063	76535	0	138210	5318			
1992	309151	130818	0	178333	0			
1993	418938	181417	0	237521	0			
1994	384033	157095	0	226938	0			
1995	324586	186956	0	137630	0			
1996	329789	149720	2795	169739	7535			
1997	329015	92820	1261	226888	8046			
1998	388415	112367	820	260403	14825			
1999	360547	125818	390	208574	25765			
2000	322974	64065	860	225557	32492			

	Total	Gov.	Municip.	Financial	Corp.	Railway	Industry	Oth. corp
2001	379392	102733	2506	245255	28898			
2002	468945	146432	6341	274004	42168			
2003	526660	127958	3487	370504	24711			
2004	503348.1	168034	7515	304782	23017			
2005	506542	105659	6245	363639	30999			
2006	532278	102454	5327	394037	30460			
2007	773680	73982	2556	643809	53333			
2008	483383	63198	2145	386453	31587			
2009	710878.7	119659	3165	539392	48663			
2010	652041	83339	4620	538957	25125			
2011	673404	82779	15595	529044	45986			
2012	591989	96640	18028	413302	64019			
2013	708613	117077	27015	485263	79258			
2014	820217	153671	44988	522744	98814			
2015	868286	150404	45069	568058	104755			
2016	796781	127395	27856	537743	103787			
2017	819356	109973	32541	531979	144863			
2018	879721	72237	32017	634041	141426			
2019	932562	52519	46695	656752	176596			
2020	1082617	182221	49839	682946	167611			

**Table A4.2:** *Bonds in circulation*

	<i>Total</i>	<i>Gov.</i>	<i>Municip.</i>	<i>Financial</i>	<i>Corp.</i>	<i>Railway</i>	<i>Industry</i>	<i>Oth. corp</i>
1835	6			6				
1836	5.88			5.88				
1837	5.762			5.762				
1838	5.647			5.647				
1839	13.534			13.534				
1840	13.264			13.264				
1841	12.998			12.998				
1842	12.738			12.738				
1843	12.484			12.484				
1844	12.234			12.234				
1845	11.989			11.989				
1846	25.083			25.083				
1847	24.581			24.581				
1848	24.089			24.089				
1849	30.549		0.275	30.274				
1850	31.811		0.27	31.541				
1851	48.907		0.264	48.643				
1852	62.768		0.259	62.509				
1853	61.513		0.254	61.259				
1854	73.471	0.282	0.249	72.94				
1855	72.501	0.276	0.244	71.481	0.5			0.5
1856	71.275	0.27	0.239	70.051	0.715			0.715
1857	69.814	0.265	0.234	68.65	0.665			0.665
1858	107.014	22.1	0.329	83.897	0.688		0.07	0.618
1859	106.178	21.636	0.393	83.508	0.641		0.066	0.575
1860	136.582	47.849	0.965	87.171	0.597		0.062	0.535
1861	186.022	49.844	5.106	128.616	2.456		1.958	0.497
1862	218.697	48.797	5.248	157.849	6.803	1.5	4.841	0.463
1863	218.392	50.772	5.493	154.692	7.435	1.455	5.55	0.43
1864	254.259	59.598	6.324	181.008	7.329	1.411	5.517	0.4
1865	253.433	58.346	10.772	177.388	6.927	1.369	5.186	0.372
1866	275.159	83.607	11.057	173.84	6.655	1.328	4.981	0.346
1867	276.063	81.851	14.656	172.864	6.692	1.288	5.082	0.322
1868	301.545	100.832	14.981	179.406	6.326	1.249	4.777	0.299
1869	324.679	102.715	20.015	195.818	6.131	1.212	4.641	0.278
1870	358.212	140.558	19.955	191.902	5.797	1.176	4.362	0.259
1871	391.817	137.606	21.594	224.335	8.282	1.14	6.9	0.241
1872	453.541	158.716	25.03	241.59	28.205	15.295	12.686	0.224
1873	517.534	155.383	29.094	236.758	96.299	78.366	17.725	0.208
1874	568.243	152.12	30.513	270.44	115.17	86.015	22.962	6.194
1875	604.532	185.807	32.562	265.031	121.132	84.868	30.504	5.76
1876	635.36	218.525	32.811	259.73	124.294	86.822	32.115	5.357



	<i>Total</i>	<i>Gov.</i>	<i>Municip.</i>	<i>Financial</i>	<i>Corp.</i>	<i>Railway</i>	<i>Industry</i>	<i>Oth. corp</i>
1920								
1921	4090.504	1423.465	712.784	744.853	1209.402	278.198	915.44	15.765
1922								
1923								
1924	4575.986	1669.001	725.679	955.981	1225.325	312.986	896.508	15.831
1925								
1926								
1927	4770.437	1706.851	681.896	1101.611	1280.079	287.87	975.138	17.071
1928								
1929								
1930								
1931	4898.202	1665.174	510.767	1455.873	1266.388	231.011	1019.92	15.46
1932								
1933								
1934	5305.671	1978.015	450.741	1739.767	1137.148	194.148	930.274	12.726
1935								
1936								
1937	5292.172	1840.815	412.616	1965.752	1072.989	170.575	892.383	10.032
1938								
1939								
1940	6347.221	2757.742	517.576	2227.371	844.532	122.983	713.974	7.575
1941								
1942								
1943	9865.398	6401.669	496.11	2232.469	735.15	82.794	652.356	
1944								
1945								
1946	11853.32	7970.58	566.732	2665.886	650.123	50.387	595.781	3.955
1947								
1948	12732.8	7451.223	756.669	3247.208	1277.695	119.9	1155.5	2.29
1949								
1950								
1951	13402.71	6841.4	1248	3853.4	1459.914	103.571	1354.12	
1952								
1953								
1954	18472.34	10781	1220.8	4674.4	1796.137	143.295	1650.66	2.17
1955	19070.1	11366.1	1255.7	5151.2	1297.1			
1956	20165.5	11387	1386.8	5571.8	1819.9			
1957	21578.3	12056.3	1340	6287	1895	221	1674	
1958	23018.2	12685.8	1386	7004	1942.4			
1959	25463.2	14433.4	1330.9	7743.7	1955.2			
1960	27302.6	15165.7	1414.8	8639.1	2083	250	1835	
1961	27912	14402	1465	9986	2059			
1962	31514	14639	1693	12146	3036			

	<i>Total</i>	<i>Gov.</i>	<i>Municip.</i>	<i>Financial</i>	<i>Corp.</i>	<i>Railway</i>	<i>Industry</i>	<i>Oth. corp</i>
1963	35668	16517	1976	13707	3468			
1964	39288	16628	2342	16385	3933			
1965	42020	16339	2542	18806	4333			
1966	46811	16199	2686	23127	4799			
1967	54125	17400	2860	27834	6031			
1968	62932	19552	3026	33199	7155			
1969	73048	21388	3214	40844	7602			
1970	80870	22117	3382	47289	8082			
1971	93093	24778	3646	55218	9451			
1972	105912	29339	3974	61978	10621			
1973	123728	37291	4303	70400	11734			
1974	141185	43336	4609	80600	12640			
1975	164030	52718	4817	91795	14700			
1976	185213	60741	4984	102456	17032			
1977	204778	65914	4983	114849	19032			
1978	245245	89551	5033	130025	20636			
1979	282963	110064	4987	145434	22478			
1980	320971	134090	4839	159680	22362			
1981	397096	187636	4721	181954	22785			
1982	480040	223174	6939	212443	37484			
1983	588296	298384	7516	240612	41784			
1984	679605	350019	8004	274709	46873			
1985	737622	357330	8274	319645	52373			
1986	843474	364597	9715	402377	66785			
1987	891768	356198	9834	454022	71714			
1988	976435	335628	9175	556500	75132			
1989	1172353	387468	8720.5	695722	80442			
1990	1229422	349994	8266	793111	78051			
1991	1318788	365635	7670	873651	71832			
1992	1548253	477842	9884	990395	70132			
1993	1967784	766800	15205	1109728	76051			
1994	2038072	898233	16643	1057070	66126			
1995	2205419	1148273	16002	979002	62142			
1996	2382695	1292540	15242	1004197	70716			
1997	2468302	1345374	21821	1003381	97726			
1998	2618402	1387627	20380	1099356	111039			
1999	2475229	1219693	16981	1099214	139341			
2000	2375010	1119622	15779	1041526	198083			
2001	2232228	951710	15570	1013929	251019			
2002	2340892	1002564	17160	1051650	269518			
2003	2518692	1030961	20831	1171105	295795			
2004	2586853	1135631	19789	1166901	264532			
2005	2969082	1101868	22871	1524110	320233			

	<i>Total</i>	<i>Gov.</i>	<i>Municip.</i>	<i>Financial</i>	<i>Corp.</i>	<i>Railway</i>	<i>Industry</i>	<i>Oth. corp</i>
2006	3126179	1042814	28679	1746186	308500			
2007	3400659	977361	28476	2036811	358011			
2008	4022687	965438	23574	2605304	428371			
2009	4521365	970288	28731	3010207	512139			
2010	4698908	1011258	30816	3187239	469595			
2011	5016389	1037672	44277	3435388	499052			
2012	5092410	969461	61491	3501124	560334			
2013	5389602	1007624	76744	3691048	614186			
2014	5780915	1050944	105131	3941610	683230			
2015	6014888	1078876	132435	4070860	732717			
2016	6373498	1137840	141290	4302042	792326			
2017	6419270	1079899	150193	4230701	958477			
2018	6382252	1103280	160506	4056007	1062459			
2019	6681535	951650	178504	4334130	1217251			
2020	6719305	955912	192585	4253327	1317481			



**Table A4.3:** *External debt (foreign currency denomination)*

	<i>New bond issues</i>				<i>Bonds in circulation</i>			
	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>
1835			6				6	
1836			0				5.88	
1837			0				5.762	
1838			0				5.647	
1839			8				13.534	
1840			0				13.264	
1841			0				12.998	
1842			0				12.738	
1843			0				12.484	
1844			0				12.234	
1845			0				11.989	
1846			13.333				25.083	
1847			0				24.581	
1848			0				24.089	
1849			6.667				30.274	
1850			1.872				31.541	
1851			17.733				48.643	
1852			14.839				62.509	
1853			0				61.259	
1854	0.282		7		0.282		67.034	
1855			0		0.276		65.693	
1856			0		0.271		64.379	
1857			0		0.265		63.092	
1858	21.841		16.62		22.101		78.45	
1859			0		21.659		76.881	
1860	26.667		5.333		47.893		80.677	
1861		2	31.988		46.935	2	111.051	
1862			31.806		45.996	1.96	140.636	
1863			0		45.076	1.921	137.823	
1864	9.891		1.109		54.066	1.882	136.176	
1865		1.2	0		52.985	3.045	133.453	
1866	26.486		0		78.411	2.984	130.783	
1867			0		76.843	2.924	128.168	
1868	20.7	0.25	0		96.006	3.116	125.604	
1869		3.114	0		94.086	6.167	123.092	
1870			0		92.204	6.044	120.631	
1871			0		90.36	5.923	118.218	
1872			0		88.553	5.804	115.854	
1873		0.25	0	13	86.782	5.938	113.536	13
1874			38.417	1	85.046	5.819	149.683	13.61
1875	36.882	0.6	0	0	120.227	6.303	146.689	13.202

	<i>New bond issues</i>				<i>Bonds in circulation</i>			
	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>
1876	36.62	0.9	0	1	154.443	7.077	143.755	13.806
1877		0.25	0	0	151.354	7.185	140.88	13.391
1878	27.24	2.35	113.562	0	175.567	9.392	251.625	12.99
1879		2	6.469	0	172.055	11.204	253.062	12.6
1880	118.746	17.6	8.173	0.045	287.361	28.58	256.173	12.267
1881			5	0	281.613	28.008	256.05	11.899
1882			5	4	275.981	27.448	255.929	15.542
1883		1.5	8.912	0	270.461	28.399	259.722	15.046
1884		0.26	0	0	265.052	28.091	254.528	14.566
1885		8	8.197	0	259.751	35.529	257.634	14.103
1886	64.546	3.4	52.33	0	319.102	38.219	304.812	13.655
1887	10	4	6	0	322.72	41.454	304.716	13.222
1888	26.667		8.5	0	342.933	40.625	307.121	12.803
1889		1.5	0	0	336.074	41.313	300.979	12.398
1890	35.556	5.4	0	0.6	361.547	45.886	294.959	12.607
1891			4.997	0.6	354.316	44.969	294.057	12.792
1892			0	0	347.23	44.069	288.176	12.356
1893			0	0	340.285	43.188	282.413	11.937
1894	18	0.673	8	0	351.48	42.997	284.764	11.533
1895			0	0	344.45	42.137	279.069	11.143
1896			0	0	337.561	41.295	273.488	10.768
1897			0	1.634	330.81	40.469	268.018	12.041
1898			1.135	14.689	324.194	39.659	263.793	26.333
1899	36	7.5	0	0	353.71	46.366	258.517	25.509
1900	36.32	25	0	0.02	382.956	70.438	253.346	24.732
1901			0	0.246	375.297	69.029	248.279	24.206
1902		3.01	6.853	0.351	367.791	70.659	250.167	23.794
1903		0.011	0	25.285	360.435	69.257	245.163	48.332
1904	36	0.012	67.206	0.127	389.226	67.884	307.466	46.226
1905		26	1.39	10.973	381.442	92.526	302.707	55.072
1906	43.2	15.018	12.2	3.087	417.013	105.693	308.852	55.376
1907	46.8		0	0.395	455.472	103.579	302.675	53.049
1908	54.48	44.613	10.798	0.078	503.12	146.121	309.841	50.975
1909		38.416	7.693	0.194	495.574	181.614	313.817	49.128
1910		2.912	122.4	13.03	488.14	180.893	432.451	60.217
1911			0	0	480.818	177.275	427.261	58.146
1912			0	0	473.606	173.73	422.134	56.177
1913			0	0	466.502	170.255	417.069	54.303
1914			0	0	459.504	166.85	412.064	52.52
1915			0		452.611	163.513	407.119	50.821
1916					445.822	114.459	194.218	25.411
1917					439.135	80.121	97.109	12.705



	<i>New bond issues</i>				<i>Bonds in circulation</i>			
	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>
1960								
1961				48	130			102
1962					130			102
1963					130			102
1964					130			102
1965				368	130			470
1966				176	130			646
1967				155	130			724
1968				60	130			779
1969								816
1970				336				1113
1971				421				1463
1972			222	934			222	2328
1973			294	414			513	2659
1974				233			511	2795
1975		505	728	1753		505	1234	4362
1976		86	432	2392		577	1647	6641
1977	3710	561		1961	3710	1124	1610	8439
1978	1399	224	305	876	5091	1335	1854	9095
1979	4918	339	87	61	9992	1642	1669	8872
1980	6738	877	1109	288	16712	2465	2545	8478
1981	2881	503	1957	1017	18941	2875	4254	9014
1982	9013	359	7996					
1983								
1984								
1985								
1986					98597	3715	42377	19785
1987					90198	3834	45022	16714
1988					80628	3175	64500	15132
1989			1000	1300	144468	2720.5	94722	27442
1990			400		116994	2266	108111	21051
1991			2125	300	96635	3670	110651	7832
1992			150		140842	7884	137395	8132
1993			1000	500	309800	12205	172728	4051
1994					382233	13643	151070	11126
1995				150	469273	12002	124002	6142
1996				500	546540	8242	270197	5716
1997		900			543414	13884	328908	29311
1998				300	579412	12165	356778	25628
1999					423754	8508	425359	40306
2000					400898	9306	457496	74943
2001					328728	7516	477006	105285

	<i>New bond issues</i>				<i>Bonds in circulation</i>			
	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>	<i>Gov.</i>	<i>Mun.</i>	<i>Fin.</i>	<i>Corp.</i>
2002					342856	4512	477433	169142
2003					299355	6845	513725.3	192793
2004					363831	6975	472614.5	170380
2005					327658	7162	678135	199738
2006					272417	9147	803236.9	191138
2007					247996	7798	930505	215385
2008					249410	5259.94	1283230	264867
2009					266514	10860.4	1614577	342648
2010					243467	12808	1714682	284061
2011					275626	13937	1804223	306896
2012					236648	21334	1901031	350254
2013	47791	0	79282	350	206179	12264	1876111	371009
2014	6516	0	54274	2533	256551	11546	2059695	394395
2015	14708	0	97659	1266	293868	20948	2113031	395176
2016	0	0	18649	395	313594	24810	2259791	408179
2017	0	0	8210	630	281311	27776	2108114	514471
2018	10366	0	46599	3248	276259	30221	1895005	563689
2019	39419	0	48818	1987	212566	28794	1924743	670100
2020	0	0	28465	1756	174556	26555	1721786	725297