5.
Fiscal statistics for Sweden, 1670–2011[*]

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5.1. Introduction

This chapter presents data on central government fiscal measures in Sweden, starting in 1670. Annual data on central government debt are presented from 1670, and on expenditures and revenues from 1719. The aim is to construct measures that are broad, meaningful, and widely used. In practice, this means constructing measures according to the principles in Sweden's current budget system.

Sweden is well suited for this attempt. First, it has been territorially and politically stable to an unusual degree since 1719, when a new instrument of government (*regeringsform*) was adopted with a representative government. Second, annual data are available in printed form for the whole period. We use Simonsson (1918) for the data on debt in 1670–1718. For the period 1719–1809 we use Åmark's (1961) monumental study based on archival material. For the period 1810-20 we use Rathsman (1855). From 1821 onwards we use government publications.[1] The sources are listed in "Data sources" at the end of the chapter.

The chapter is organized as follows. Section 2 presents the definitions used in the calculations. Section 3 describes the flow variables (expenditures, revenues and deficits), section 4 the construction and evolution of debt for the fiscal branch of the central government. Section 5 presents consolidated measures for the fiscal and monetary branches of the central government, including seigniorage. Section 6 concludes. A companion working paper, Fregert and Gustafsson (2005), describes the data in more detail in a series of appendices, as well as the institutional setting. The connections between Sweden's fiscal and monetary histories from 1668 to 1931 are analysed in Fregert and Jonung (1996).

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[*]   The chapter is an update of Fregert and Gustafsson (2008).
[1]   International data on government debt are tabulated in Reinhart and Rogoff (2009, appendix A.2).

5.2. Definitions[2]

5.2.1. The territory

Swedish territory has been constant since 1809. From the mid-1600s, the Swedish state ruled over Estonia, Livonia and Ingria, Pomerania, Wismar and Finland.[3] Estonia, Livonia and Ingria were lost in 1721, i.e. before our series of expenditures and revenues start. Separate budgets for Pomerania and Wismar were drawn up by their administrations and had to be approved by the Swedish Parliament. Occasionally, funds were transferred from Sweden to Pomerania, but not the other way. These expenditures appear in the Swedish budgets as "payment to fill the state deficit in Pomerania". Separate budgets for Finland were drawn up in Sweden from 1722 to 1792; however, as we cannot distinguish Sweden from Finland in the period 1793–1809, Finland is included in the figures for 1722–1809.[4] Furthermore, the year 1809 also represents a break in the data sources. From 1815 to 1905 Sweden was in a union with Norway with the Swedish king as head of state; each country had its own administration and budget but foreign policy was run by Sweden and the cost of the Swedish Ministry of Foreign Affairs was shared.

5.2.2. The central government

The central government is a part of general government, which in turn is a part of the public sector, as outlined in Figure 5.1 in accordance with the UN System of National Accounts (SNA) 2008. The defining characteristic of the central government relative to public corporations and social security is that it is financed mainly by taxes. A practical definition of the central government is the activities that appear in current official budgets. Thus, we do not include either public corporations, such as the national railway system and the social security system, or local and regional government. However, the public corporations' net revenues are included because they are owned by the central government.

In official government accounts, the central bank is treated like any other public corporation, such that only its transfers to the treasury enter the budget and borrow-

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2 See Blejer and Cheasty (1991) for a general discussion of definitions and measurement problems.

3 Finland was ceded to Russia in 1809 after a war. Pomerania was occupied by France in 1807 and ceded formally in 1815. Wismar was "lent" to Mecklenburg in 1803 against a down payment to Sweden; Sweden had the right to repurchase Wismar after 100 years at the price of the down payment compounded at 3 per cent annual interest; in reality this was a sale, since neither party foresaw a return to Sweden.

4 The size of the Finnish budget varied over the years but was usually less than 10 per cent of the total budget; the annual average in 1722-92 was 8.2%. Incomes and expenditures are given separately for Finland and Sweden in Åmark (1961, Table 1, pp. 130-141).

ing at the central bank is lumped together with other borrowing. This concept of the central government may be labelled the central government's fiscal branch. Since the central bank has a special position as a source of finance for the central government's fiscal branch, for some macroeconomic purposes it may be preferable to consolidate the central government's monetary and fiscal branches, which we do in section 6.

Figure 5.1. *The public sector*
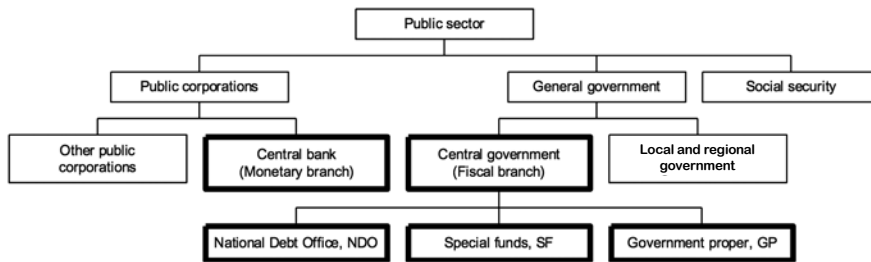
Much of the practical work is done on the consolidation of entities that today constitute the central government's fiscal branch but earlier were separated institutionally and therefore had separate "off-budget" accounts. Figure 5.1 and Table 5.1 give an overview of how revenues and expenditures have been consolidated.

The central government proper (*Statsverket*), with its own budget and accounts, has always been a subset of our concept the central government. The official budget has been consolidated gradually. The split was largest before 1809, when a number of special funds existed (see Table 5.2). The special funds and the National Debt Office had their separate budgets and earmarked revenues. In 1809, the special funds disappeared as separate agencies, and the National Debt Office's accounts were included in the official budget. An ancient agency, the National Board of Trade (*Kommerskollegium*), had previously been financed within the budget but appeared off budget from 1809 to 1874.[5] It has been included, though the numbers are insignificant.

After 1809, the only major item outside the budget has been government lending to public corporations for investment purposes and later also to private companies (private railways) and individuals (mortgage lending and student loans). Most of the lending was undertaken by the National Debt Office, though the government proper occasionally also lent some means. The traditional term for this lending has been net lending.[6] In 1912–1937 and from 1997, net lending was included in the budget. For the periods 1854–1911 and 1938/39–1995/96 we add net lending to the expenditure side.

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5   From 1809, *Konvojfonden* and *Krigsmanhuskassorna* were included in the government proper (*Statsverket*), while *Manufakturfonden* was administered by the National Board of Trade.

6   This is the term used in Blejer and Cheasty (1991), see also below on the definition of the deficit.

Table 5.1. *Consolidation of the central government 1722–2003*

Years	Revenues	Expenditures
1722–1766	GP + NDO + SF	GP + NDO + SF
1766–1788	GP + SF	GP + SF
1789–1809	GP + NDO + SF	GP + NDO + SF
1810–1853	GP + SF	GP + SF
1854–1911	GP + SF (1854 – 1873)	GP + SF (1854 – 1873) + NL (1854 – 1911)
1912–2011	GP	GP + NL (1938/39 – 1995/96)

Note: GP = Government proper, NDO = National Debt Office, SF = Special Funds, NL = Net lending.

Table 5.2. *Special funds.*

Name in Swedish	Explanation	Years	Maximum revenue, dsm (year)	Maximum debt, dsm (year)
Generalförrådskassan	Funding of temporary military needs	1721–1775	114,795 (1766)	46,887 (1740)
Krigsmanshuskassorna	Pension fund for retired military	1722–1809	109,284 (1809)	74,982 (1729)
Konvojfonden	Military convoys to escort Swedish ships, financed by export and import duties	1726–1809	440,550 (1778)	2,107,253 (1776)
Landhjälpsfonden	Subsidized lending to manufacturing, financed by import duties	1727–1739		
Manufakturfonden	Successor to Landhjälpsfonden	1739–1766	373,346 (1750)	3,380,381 (1757)
Manufakturdiskont-fonden	Lending agency for manufacturers	1756–1776		
Slottsbyggnadsfonden	Tax financing of the new royal castle in Stockholm	1728–1777	114,828 (1756)	
Kommerskollegium	National Board of Trade	1809–1874		

Source: Åmark (1961).

5.2.3. Government accounts and deficit measures

Until 1980 the government accounts have been presented in the form of financial statements divided into two equal-value columns of sources and uses of funds. This corresponds to the one-period central government budget constraint, which shows sources of funds as being equal to uses:

$$\underbrace{T_t + CBT_t + L_t}_{\text{Sources}} = \underbrace{G_t + I_t + i_t B_{t-1} + \Delta A_t + AM_t}_{\text{Uses}}, \tag{1}$$

The sources of funds consist of: T_t the government's revenues from taxes, income from public corporations and sales of real assets (privatizations), CBT_t revenue transfers from the central bank, and L_t new loans. Uses of funds consist of: G_t current expenditures (consumption and transfer payments), I_t real investments and long-term financial investments (net lending), $i_t B_{t-1}$ nominal interest payments on government debt B_t, ΔA_t changes in short-term financial assets, and AM_t amortization of debt (buy-backs and principal payments).

The change in government debt in turn is equal to new loans, L_t, minus amortization of government debt, AM_t, so (1) may be written:

$$\underbrace{T_t + CBT_t + \Delta B_t}_{Sources} = \underbrace{G_t + I_t + i_t B_{t-1} + \Delta A_t}_{Uses} \,. \tag{2}$$

We calculate the *total* budget deficit as total expenditures minus total revenues, also commonly labelled the government's borrowing requirement. Rearranging (1) and (2) gives the link between the total deficit and its financing:[7]

$$DEF_t = (G_t + I_t + i_t B_{t-1}) - (T_t + CBT_t) = L_t - AM_t - \Delta A_t = \Delta B_t - \Delta A_t \,. \tag{3}$$

A positive deficit is thus financed by increasing government debt or by selling financial assets.[8] An increase in debt that exceeds required borrowing, DEF_t, leads to an increase in short-term financial assets, ΔA_t. If the government is running a surplus, it amortizes debt or accumulates financial assets.

Changes in financial assets arise naturally from the uneven timing of revenues, expenditures and borrowing operations. They can also arise from the planned delay of expenditures from one year to the next as some revenues are allocated for use over more than one fiscal year. These means are then carried across years as "unspent balances" or "reservations". The change in short-term financial assets is usually small and consists mostly of changes in the National Debt Office's and the central government proper's checking accounts at the central bank.

The source-use account statement is presented in Table 5.3. Identifying the deficit involves separating revenues and expenditures, on the one hand, from financing operations, on the other. By convention, expenditures and revenues, the left-hand side of equation (3), are said to appear "above the line", and financing operations, the right-hand side, appear "below the line", where the line is the total deficit line drawn in Table 5.3.

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7   This is not a true accounting identity, since it leaves out changes in debts and assets unrelated to transactions. With real data accounting errors must also be added.

8   Financing by high-powered money does not appear explicitly as all new debt, whether sold to the public or the central bank, is included for the fiscal branch (the official budget). When the fiscal and monetary branches are consolidated, high-powered money appears explicitly as shown in section 5.

Table 5.3. *The government budget and the total deficit line*

Sources	Uses	Net: Uses– sources
Revenues: taxes, sales of real assets, income from public corporations, T_t	Current expenditure, G_t	
Transfers from the central bank, CBT_t	Investment, I_t	
	Interest payments, $i_t B_{t-1}$	
Subtotal	Subtotal	Total deficit: borrowing requirement
New loans, L_t	Short-term financial asset accumulation, ΔA_t	
	Amortization, AM_t	
Subtotal	Subtotal	Total surplus
Total Sources	Total Uses	0

The table can be simplified by netting sources and uses below the line and putting the resulting net amount, that is, the total deficit, on the source side, as in Table 5.4. From a practical point of view, calculating the deficit as expenditures minus revenues from the source-use statement amounts to identifying items above the line and ignoring the rest.

Table 5.4. *The government budget and the total deficit line with the budget deficit on the source side.*

Sources	Uses	Net: Uses– sources
Revenues: taxes, sales of real assets, income from public corporations, T_t	Current expenditure, G_t	
Transfers from the central bank, CBT_t	Investment, I_t	
	Interest payments, $i_t B_{t-1}$	
Subtotal	Subtotal	Total deficit: borrowing requirement
Total deficit: borrowing requirement		Total surplus
Total Sources	Total Uses	0

5.2.4. Conversion to a common currency unit

We present nominal amounts in thousands of SEK (krona), Sweden's currency unit since 1873. The currency units used in the original sources before 1873 and their conversion rates into SEK are presented in Table 5.5.

Table 5.5. *Conversion of units in government accounts into SEK*

Period	Currency unit in accounts	Conversion rate, account units to kronor
1718–1776	Daler silvermynt (dsm)	1 dsm = 1/6 rdr sp = 1/6 SEK
1777–1789	Riksdaler specie (rdr sp)	1 rdr sp = 1 rdr rgs* = 1 SEK
1789–1803	Riksdaler specie (rdr sp)	Floating exchange rate rdr sp and rdr rgs**, 1 rdr rgs = 1 SEK.
1803–1809	Riksdaler specie (rdr sp)	1 rdr sp = 1.5 rdr rgs = 1.5 SEK
1809–1857	Riksdaler banco (rdr bco)	1 rdr bco = 1.5 rdr rgs = 1.5 SEK
1858–1873	Riksdaler riksmynt (rdr rmt)	1 rdr rmt = 1 rdr rgs = 1 SEK
1873–2011	SEK (Krona)	

*rdr rg = riksdaler riksgäld.

** Floating exchange rate from Edvinsson (2010, Table A4.5, p. 209, column "This study").

Table 5.5 gives the conversion factors used to convert the original amounts into SEK. Since parallel units of accounts were used in some periods, conversion into a common unit of account over time can follow different paths depending on which particular unit of account is chosen for a given period. We follow the practice of choosing the units of account that are deemed to have been most prevalent in actual use. The construction is described in Edvinsson (2010, p. 189) following Jörberg (1972, pp. 78–85), who in turn built on Heckscher (1942). The nominal SEK series thus constructed can be deflated with the consumer price index according to Edvinsson and Söderberg (2010, pp. 417–418) or with nominal GDP according to Edvinsson (2014), since they follow the same sequence of units of account.

The monetary units in the government accounts follow another sequence of units of account. Hence the amounts in the government accounts have first been converted into the most prevalent unit of account and then converted into SEK. Conveniently, the units of account in prevalent use between 1777 and 1873 link one to one to SEK according to: 1 riksdaler specie (1777–1788) = 1 riksdaler riksgälds (1789–1854) = 1 riksdaler riksmynt (1855–1872) = 1 SEK (1873-). Thus, from 1777 the procedure amounts to translating the nominal amounts to the one-to-one series of units of account. Before 1777 the main unit of account was daler silvermynt, which has been translated into SEK using the official conversion rate: 6 daler silvermynt = 1 riksdaler specie.[9]

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9   "Daler silvermynt" were originally units of silver coins but became units of account for copper coins and copper plates in the 17th century and units of account for Riksbank notes in the early 18th century. The Riksbank notes were irredeemable from 1745. Thus "daler silvermynt" is a generic term for in reality separate units of account such as: "daler silvermynt in copper coins" or "daler silvermynt in irredeemable Riksbank notes". The generic term "daler silvermynt" is appropriate as a reference to the prevalent unit of account. In addition, when the specific unit of account changed, its relation to the old one was initially one to one. For example, copper coins were originally stamped with "daler silvermynt" according to the relative value of copper to silver.

From 1789 until 1803 the nominal amounts in riksdaler specie have been translated into riksdaler riksgälds, and hence into SEK, by using the floating exchange rate between them according to the exchange rate in Edvinsson (2010, Table A4.5, p. 209, column "This study"). In 1803, the riksdaler riksgäld became convertible into riksdaler specie at 1.5 riksdaler riksgäld per riksdaler specie. When the riksdaler notes denoted in riksdaler specie became inconvertible in 1808, they were relabelled riksdaler banco, still with the exchange rate 1.5 riksdaler banco per riksdaler riksgäld. Thus the nominal values given in riksdaler specie and riksdaler banco in the government accounts from 1803 to 1857 have been multiplied by 1.5.

5.3. Expenditures, revenues, and deficits

We present aggregate revenues and expenditures from 1719 as potential measures of the central government's claims on the total economy. We do not present any disaggregated data because the classification schemes in the government accounts have varied over time and that poses a number of difficulties in the creation of consistent long series.

While the possibility that we have missed some transactions altogether cannot be ruled out, we believe this is a minor problem. A potentially greater problem lies in changes in the degree of netting between incomes and revenues. Ideally, all revenues and expenditures should be recorded gross. The nettings have occurred in particular in transfer systems, which are financed by special taxes and only net contributions have appeared in the budget. A significant modern example of netting is transfers to local governments financed by central government personal income taxes, where only the net revenues are recorded in the budget. In recent years, the budget has gradually moved towards gross numbers for all transfer systems.

We have calculated the net revenues for government corporations (*affärsdrivande verk, uppdragsverksamhet hos myndigheter*) in 1810–1911 in order to conform to the data thereafter. The rationale is that these expenditures are truly benefit financed and therefore should be treated as commercial activities. Finally, it should be noted that netting does not alter the deficit calculations as it affects revenues and expenditures by the same amount.

Another problem is the degree to which the budget has been recorded on a cash or an accrual basis. This is a minor problem, since only the timing, not the amount, is affected. Our overall impression, documented below, is that the budget-makers strove for cash-based accounting until 1993. Major differences occur on the expenditure side. Transfer payments were generally on a cash basis, while other expenditures were often on an accrual basis. An explicit attempt to use cash-based accounting also for the expenditure side was introduced in 1917.

We divide the whole period into four sub-periods, corresponding to different source materials. In the first period, 1721–1809, only ex ante budget data for expenditures and

revenues exist.[10] The second period is 1810–20. The third period is 1821–1911 when the first official closed budget accounts were published. The final period covers 1912 until today. Figure 5.2 shows expenditures and revenues as shares of nominal GDP.

Figure 5.2. *Central government expenditures and revenues 1722–2011 as shares of nominal GDP*
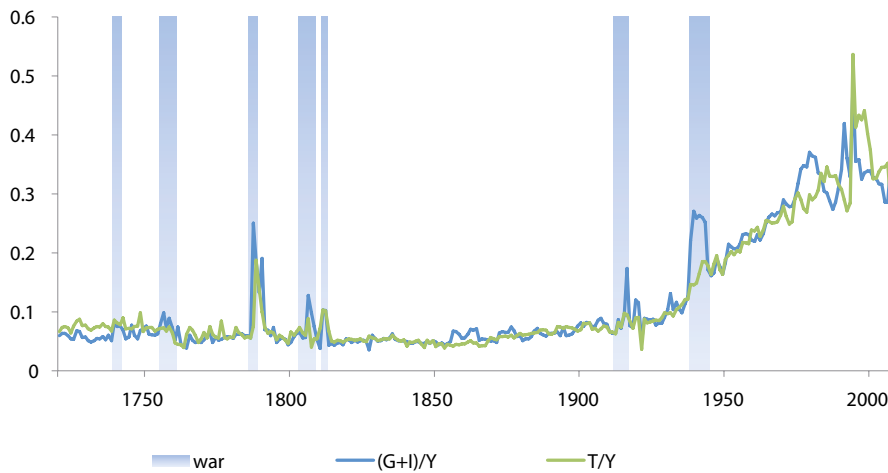
Sources: Expenditures and revenues: data appendix; nominal GDP: Edvinsson (2014, Table A4.1: Current prices, GDP by activity); wars: Wikipedia, "List of wars involving Sweden".
Note: The nominal GDP values 1722–1776 in daler kopparmynt have been converted into SEK by applying the exchange rate 18 daler kopparmynt equal to 1 SEK, as explained in Edvinsson (2010, p. 189). World Wars I and II are marked but it should be noted that Sweden was neutral, not a belligerent.

5.3.1 The period 1722–1809

The general format of the government budget (*Riksstaten*), that is, ex ante measures, is given in Åmark (1961, Tables 1, 16 and 26). It is a statement in the form of sources and uses of funds, constructed such that sources equal uses. The terms used were requisitions (*rekvisitioner*) for sources of funds and "orders" (*anordningar*) for uses. The residual, whereby the two sides balanced, is the accounting item "State deficit" (*statsbrist*); it represents the means that were lacking when the budget was

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10 The first general ex post account for the whole central government in Sweden was constructed for 1622 by a Dutchman, Abraham Cabeljau. General accounts were constructed almost annually until 1677 and between 1688 and 1711. The increasing size and complexity of the government, in combination with the mix of monetary and in-kind payments, led to the abandonment of general accounts. Attempts to reestablish them recurred through the 18th century, but without success. In 1810 the Riksdag decided to create general accounts and the first one was published for 1821. See Stuart and Rystedt (1905, Chapter 1) and Åmark (1961, pp. 72–75).

drawn up but are anticipated to be provided through some combination of loans, increased revenues or decreased expenditures.

Table 5.6. *The government budget (Riksstaten) 1719–1809.*

Sources (rekvisitioner)	Uses (anordningar)	Net: Uses–Sources
This year's means, TYM_t (*Löpande årets medel*)	Primary expenditures, PE_t	
	Interest payment part of debt service, $i_t B_{t-1}$ (*Skuldfordringsstaten*)	
Subtotal	Subtotal	Total deficit
Last year's means, LYM_t (*Förra årens medel*)	Amortization part of debt service, AM_t (*Skuldfordringsstaten*)	
Kept from last year, KLY_t (*Behållet till första kvartalets behov (1722–1792)*) (*Behållet i statens kassor (1793–1809)*)	Last year's state deficit, $LYSD_t$ (*Fyllnad i föregående års statsbrist*)	
New loans, L_t (*Lånemedel*)	Kept to next year, KNY_t (*Behållet till nästa års stat*)	
State deficit, SD_t (*Statsbrist*)		
Subtotal	Subtotal	Total surplus
Total Sources	Total Uses	0

Note: Debt service appears as a sum in the budgets and its division has to be estimated as described in the text. Primary expenditures are the sum of the categories: Civilian (*Civila behov*), Military (*Försvarsväsendet*), Court (*Hovet*) and Payments to Pomerania (*Fyllnad i Pommerska staten*). Debt service is presented as a total in Åmark (1961, Tables 16 and 60).

To define the measures of the total and primary deficits, it is useful to formalize the bookkeeping identity. Using the abbreviations in Table 5.6, we have:

$$\underbrace{TYM_t + LYM_t + KLY_t + L_t + SD_t}_{Sources} = \underbrace{PE_t + AM_t + i_t B_{t-1} + LYSD_t + KNY_t}_{Uses}. \quad (4)$$

The sources of funds consist of this year's total funds ($TYM_t + LYM_t + L_t + SD_t$) plus funds carried over from last year (KLY_t). The uses of funds consist of primary expenditures (PE_t) plus debt service ($AM_t + i_t B_{t-1}$), that is, amortization and interest payments, payment for last year's state deficit ($LYSD_t$) plus the means kept for next year (KNY_t).

If the projected state deficit is covered by borrowing, the total deficit, computed as expenditures minus revenues, is:

$$DEF_t = (PE_t + i_t B_{t-1}) - (TYM_t + LYM_t) =$$
$$= L_t + SD_t - AM_t - LYSD_t - (KNY_t - KLY_t) \quad (5)$$

The right-hand side gives the deficit from the financing side, corresponding to $\Delta B_t - \Delta A_t$ as in equation (3). The budget only shows total debt service, which must be divided into amortization (not included in the deficit) and interest payments (included). For the period 1722–77 we have approximated interest payments on central government debt from known interest rates and debt amounts for the different classes of debt. From 1778, interest payments have been presented annually by the National Debt Office.[11]

The item "payment of last year's deficit" appears as a balancing item on the use side in some years between 1765 and 1792. We are not sure how this item should be interpreted. If it represents expenditures which were included in the previous year's expenditures but not paid for in that year, it constitutes arrears that should be booked above the line as true expenditures this year and subtracted from the previous year's expenditures. Compared to booking the item below the line, some of the deficit would be shifted forward in time to represent a cash, as opposed to an accrual, measure of the deficit. If, on the other hand, it represents new expenditures not accounted for in the previous year's budget, it should be added to this year without a deduction last year. The description in Åmark (1961, p. 166) of the term as a balancing item suggests the first interpretation and we have therefore not included it, that is, we have put it below the line as a purely financial transaction. The cumulative deficit in this case will be the same as if we had shifted it between the years.

Since the figures are ex ante, the calculated deficit will not be equal to the actual deficit. A priori, there is no reason to believe that the budget figures systematically under- or overestimate the actual deficit. First, in that the budget was a political document and thus likely to err on the optimistic side, the deficit may be underestimated. Second, the deficit may also be underestimated because revenues may be overestimated due to double counting between "this year's means" (TYM_t) and "last year's means" (LYM_t).[12] Finally, the deficit may be overestimated to the degree that the state deficit is covered by expenditure cuts or revenue increases, instead of by borrowing. A posteriori, the calculated budget deficits do not differ systematically from the change in debt, as shown in Fregert and Gustafsson (2008, section 5), which indicates that there were no systematic errors.

Total revenues and expenditures are presented in the appendix and in Figure

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11 See appendix G in Fregert and Gustafsson (2005) for the exact calculations.

12 "This year's means" refers to expected revenues during the fiscal year emanating from taxes formally levied in the same year; "last year's means" refers to taxes levied in previous years but collected this year. According to Åmark (1961, p. 99), there may be some double counting because not all "this year's means" will actually be collected during the year and thus appear later as "last year's means". In principle, there should be no double counting because the instructions for the construction of the budget entailed estimating the likely actual collection based on previous experience. Åmark argued that the revenue calculation was more likely to overestimate than underestimate and thus there is probably some double counting.

5.3.[13] Large positive or negative deficits correspond to large changes in debt. Large positive deficits occurred in the periods of war in the early 1790s and in 1808–09. The negative deficit in 1803 is due to the revenue connected with the transfer of the debt in *riksgäldssedlar* to the Riksbank, as explained in section 4.3.

5.3.2. The period 1810–20

For 1810 to 1820 we use the figures in Rathsman (1855) and adjust them to be consistent with later periods. The closed account figures given in Rathsman cover only a subset of the activities used in the official accounts from 1821. For the overlapping year 1821, the sum of revenues in the official accounts is 40 per cent larger than in Rathsman. Since we lack information on the missing revenues, we chain Rathsman's series to the official figures by multiplying Rathsman's figures by 1.4. Regarding expenditures, Rathsman calculated them for 1810 but for the period 1811–20 he just submitted budget data, which contain only about half of the true expenditures in this period. Another complication during this period is the so-called "war fund" (1810–17), for which the exact timing of revenues and expenditures is uncertain. We use a summary printed in the official records of the parliamentary session of 1817–18, *Rikets ständers revisorer (1817–1818)*. To arrive at the central government's total expenditures, we sum the recalculated revenue figures from Rathsman, the revenues of the "war fund" and the revenues of the National Board of Trade (*Kommerskollegium*) and then add the change in government debt. That is, we calculate total expenditures residually as the sum of revenues plus the change in government debt ($G_t + I_t + i_t B_{t-1} = T_t + CBT_t + \Delta B_t$).

5.3.2. The period 1821–1911

The *Riksdag* of 1809–10 decided that a general ledger (*Rikshuvudbok*) of the total Swedish government was to be set up; the work was not completed until 1821, when the first account was constructed (published in 1822). We use the published closed accounts (*Capital-Räkning till Riks-Hufvud-Boken* 1821–1853*, Kapital-Konto till Riks-Hufvud-Boken* 1854–1911).

The published general ledgers were constructed as a combined balance sheet and expenditure-revenue statement called the Capital Account, which includes the government proper and the National Debt Office. It was set up as in Table 5.7.

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13   Separate data for the government budget and the sum of the National Debt Office, the special funds and other "off-budget" items are available in appendix H in Fregert and Gustafsson (2005).

Table 5.7. *The capital account from the general ledger (Capital-Räkning till Riks-Hufvud-Boken), 1821–1853*

Debit	Credit
Closing balance, credit t–1 = Opening balance debt, B_{t-1}	Closing balance, debit t–1 = Opening balance assets, $A^R_{t-1} + A^{NL}_{t-1} + A_t$
Expenditures, $G_t + i_t B_{t-1}$	Revenues, $T_t + CBT_t$
Closing balance assets, A^{Total}_t	Closing balance debt, B_t
Total debit =	Total credit =
$B_{t-1} + G_t + i_t B_{t-1} + A^R_t + A^{NL}_t + A_t$	$A^R_{t-1} + A^{NL}_{t-1} + A_{t-1} + T_t + CBT_t + B_t$

The two sides in Table 5.7 are equal according to the bookkeeping identity:

$$B_{t-1} + G_t + i_t B_{t-1} + A^{Total}_t = A^{Total}_{t-1} + T_t + CBT_t + B_t, \qquad (6)$$

where total assets at the end of period t, A^{Total}_t, are divided into real assets A^R_t, net lending A^{NL}_t and short-term financial assets A_t.

The format of the accounts changed in 1854. First, instead of being presented as a single account, the general ledger was divided into ten funds, which grew to over 80 in 1911. From each fund, balances, expenditures and revenues were transferred to and summarized in the capital account. Second, the ledger was set up with net assets (or net debts), instead of assets and debts.

To calculate the deficit as the borrowing requirement as described by equation (2), we transform the statement into a "Sources and uses" statement, as described in Table 5.8. The opening and closing assets are moved to the Uses (expenditure/debit) side and, likewise, the opening and closing debt to the Sources (revenue/credit) side.

Table 5.8. *Capital account rearranged as sources and uses*

Sources	Uses	Net: Uses – sources
Revenues, $T_t + CBT_t$	Expenditures, $G_t + i_t B_{t-1}$	
	Investment, $\Delta A^R_t + \Delta A^{NL}_t$	
Subtotal	Subtotal	Total deficit
Borrowing, ΔB_t	Financial asset change, ΔA_t	
Total	Total	0

The change in real assets and long-term financial assets corresponds to investments, I_t, that is, real investments and net lending, $\Delta A^R_t + \Delta A^{NL}_t$. We then get the total deficit as:

$$DEF_t = (G_t + i_t B_{t-1} + \Delta A^R_t + \Delta A^{NL}_t) - (T_t + CBT_t) = \Delta B_t - \Delta A_t, \qquad (7)$$

where the right-hand side shows the financing of the deficit as $\Delta B_t - \Delta A_t$.

In practice, however, this procedure is not possible, since the change in real assets

and net lending reported in the capital account does not measure true investment expenditures (I_t). First, assets appeared in the capital account long after the investments had been made. A prominent example is the national railways, which entered the general ledgers in 1876 at a value of 165.5 million SEK. When new assets were introduced in the general ledger, they were balanced by an entry called "additional opening balance". Second, some assets were never included in the general ledger. Two examples are investments in telegraphs and telephones and in hydroelectric power and canals. The sum of these investments in the period 1891–1911 was approximately 68.5 million SEK. In addition, the government lent funds for investments in private railways. During the period 1854–1911, these investments totalled approximately 89.2 million SEK.

We have therefore calculated the investment expenditures separately and added them to the other expenditures. Some investments were paid by the government proper and some, the largest part, by the National Debt Office.[14] We calculate the total figure (for the period 1854–1911) to 598.2 million SEK. The part paid out from the government proper can be retrieved from the general ledgers.[15] The problem is what to include as investment expenditures. The most obvious part is transfers to the national railways fund, which total 133.4 million SEK during 1876–1911. We also add government appropriations, which were transferred to various funds, for a total of 56.6 million during 1865–1911.[16]

Expenditures and revenues have been recalculated to correspond to the level of netting in later periods, since all revenues and expenditures, including government corporations, are given gross. Thus, expenditures and revenues are overestimated relative to later periods. For example, all operational expenditures for the national railway system were entered on the expenditure side of the capital account, while operational revenues were entered on the revenue side. From 1912, only the operational surplus, that is, net revenues, was entered on the revenue side. This made it necessary to compute net revenues for all government corporations and similar activities that are included later as net revenues.[17]

Due to incomplete data for the period 1810–54, we have approximated interest payments in accordance with $i_t B_{t-1} = 0.04 \times B^{IB}_{t-1}$, where B^{IB}_t is interest-bearing debt, most of it to the Riksbank at 4 per cent interest. From 1855, interest payments are given in the capital accounts, to which we have added the interest payments of the National Board of Trade.

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14 Data on investment expenditures paid out by the National Debt Office are obtained from the official records of parliamentary sessions.

15 Specifically, we use *Statsregleringsfonden* to identify transfers to other funds, that is, transfers that increase assets in other funds but have no impact on current expenditures.

16 The most notable were appropriations to *Arbetarförsäkringsfonden* (22.4 million SEK). Annual figures for investment expenditures are presented in appendix I in Fregert and Gustafsson (2005).

17 The netting procedure is exemplified and explained more thoroughly in Fregert and Gustafsson (2005).

The total expenditure, revenue and deficit figures of the central government, that is, the government proper plus the National Board of Trade and the War Fund, are presented in the appendix.[18]

5.3.3 The period 1912–2010

Since 1912 the budget and the closed accounts have been presented as a source-use statement of flows only.[19] Between 1923/24 and 1995/96 the accounts were made up for broken fiscal years, beginning on July 1st. The 1923 fiscal year ran from January 1st to June 30th and fiscal 1995/96 ran from July 1st 1995 to December 31st 1996. This explains the small figures for 1923 and the large figures for 1995/96.[20]

The structure of the budget between 1912 and 1937/38 is presented in Table 5.9. As a consequence of the 1911 budget reform, all government revenues and government expenditures, including loans, amortizations and expenditures for increases in state capital assets (investment expenditures), were brought together in a single budget. The purpose was to achieve a more uniform arrangement of the budget that balanced expenditures and revenues against each other. Within the budget, current revenues and expenditures were to balance and loans were only to be used for capital expenditures.

We calculate the deficit as:

$$DEF_t = (EC_t + IE_t) - (RP_t + RPF_t + CBT_t),\qquad(8)$$

where EC_t is current expenditure, IE_t is expenditure to increase state capital assets minus amortization of government debt (AMT_t), RP_t is revenue proper and RPF_t is receipts from productive funds (net revenues from public corporations).

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18 Separate funds data are available in appendix J in Fregert and Gustafsson (2005).
19 For a discussion on the Swedish budget in the 20th century see Lane and Back (1989).
20 We have not adjusted the figures for 1923 and 1995/96 here as the user may wish to choose the method for this.

Table 5.9. *The budget of the Swedish State, 1912–1937/38*

Sources (Swedish term)	Uses (Swedish term)	Net: Uses-sources
Revenue proper, RP_t (*Egentliga statsinkomster*)	Expenditure current, EC_t (*Verkliga utgifter*)	
Receipts from productive funds, RPF_t (*Inkomster av statens produktiva fonder*)	Expenditure for Increase of State Capital Assets, excl. amortization, IE_t (*Utgifter för kapitalökning, exkl amortering*)	
Share in the profit of the Riksbank, CBT_t (*Andel i Riksbankens vinst*)		
Subtotal	Subtotal	Total deficit
Capital assets employed (*I anspråk tagna kapitaltillgångar*)	Amortization (*Avbetalning å statsskulden*)	
Loans (*Lånemedel*)	Change in the cash fund (*tillfört kassafonden*)	
Unspent balances from last year (*Minskning av behållningen å reservationsanslagen*)	Unspent balances kept to next year (*Ökning av behållningen å reservationsanslagen*)	
Subtotal	Subtotal	Total surplus
Total	Total	0

Note: The items "Unspent balances from last year" and "Unspent balances kept to next year" refer to transfer of funds between years emanating from income items which the state could choose whether to use in the current or future fiscal years. Only the net amount is shown and appears as a positive number on either the source or the use side. The sum of this net amount and the change in the cash fund represent the net change in financial assets (ΔA).

In 1937 it was time for a new budget reform. The budget was now divided into two parts, a current or so-called "working budget (*driftbudget*)" with revenues and current expenditures and a "capital budget (*kapitalbudget*)". The requirement that the current budget should be balanced yearly was replaced by a requirement to balance it in the medium term. This turned the working budget into a tool for stabilizing business cycles. Table 5.10 describes the two budgets. In order to compute a total deficit, they have to be consolidated. This is done according to:

$$DEF_t = [EWB_t + \Delta SGC_t + (CI_t - RI_t)] - RWB_t , \qquad (9)$$

where EWB_t is total expenditures in the working budget, ΔSGC_t is "changes in standing government credits to public enterprises"[21] representing net lending outside the budget, CI_t is capital investments, RI_t is repaid investments and RWB_t is total reve-

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21　The data on changes in standing government credits are taken from the balance sheets of the National Debt Fund.

nue in the working budget. A summary table of the total budget appeared from 1965/66, shown as in Table 5.11, with the deficit on the source side and a new division of the categories above the line. Our method, applied from 1938/39 to 1979/80, gives the same result.

Table 5.10. *The budget of the Swedish State, 1937/38–1979/80*

Sources (Swedish term)	Uses (Swedish term)	Net: Uses-sources
Current revenue, (*Egentliga statsinkomster*)	Current expenditure (*Egentliga statsutgifter*)	
Receipts from State Capital Funds (*Inkomster av statens kapitalfonder*)	Expenditures on State Capital Funds (*Utgifter för statens kapitalfonder*)	
Subtotal working budget, RWB_t	Subtotal working budget, EWB_t	Total working budget deficit
	Capital Investments, CI_t (*Investeringsbemyndiganden*)	
	Repaid Investments etc., RI_t (*Avgår kapitalåterbetalning*)	
Subtotal capital budget	Subtotal capital budget	Total capital budget deficit
Subtotal working and capital budget	Subtotal working and capital budget	Total budget deficit
Capital means* (*Kapitalmedel*)		
Kept from last year (*Reservationer till föregående budgetår*)	Kept to next year (*Reservationer till följande budgetår*)	
Change in cash fund** (*Underskott att avföras å statens budgetutjämningsfond*)	Savings on capital budget* (*Besparingar som regleras inom riksgäldsfonden*)	
Subtotal	Subtotal	Total surplus
Total	Total	0

* Appears only in capital budget. ** Appears only in working budget.

Table 5.11. *Summary of the total budget of the Swedish State 1979/80.*

Sources (Swedish term)	Uses (Swedish term)	Net: Uses-sources
Current revenue	Expenditure	
(*Skatter, avgifter m.m.*)	(*Utgiftsanslag*)	
Receipts from State Capital Funds	Other uses of funds	
(*Inkomster av statens kapitalfonder*)	(*Beräknad övrig medelsförbrukning*)	
Other financing		
(*Beräknad övrig medelsförbrukning*)		
Subtotal	Subtotal	Budget deficit
Budget deficit		Budget surplus
(*Underskott*)		
Total	Total	0

A proposal for a modernization of the government budget was put forward in 1977 and adopted from the fiscal year 1980/81. The earlier system with separate working and capital budgets was replaced by a uniform state budget, as shown in Table 5.12. Items below the line cease to be explicit and are replaced by the borrowing requirement, that is, the total deficit on the source side, as in Table 5.4.

Table 5.12. *The budget of the Swedish State, 1980/81–*

Sources (Swedish term)	Uses (Swedish term)	Net: Uses-sources
Tax revenue	Expenditure	
(*Skatter*)	(*Utgiftsanslag*)	
Non-tax revenue	Other expenditure	
(*Inkomster av statens verksamhet*)	(1980/81 – 1989/90)	
	(*Övrig medelsförbrukning*)	
Capital revenue	Adjustment to cash basis	
(*Inkomster av försåld egendom*)	(1997 –) (*Kassamässig korrigering*)	
Loan repayment	National Debt Office net lending	
(*Återbetalning av lån*)	(1997–)	
	(*Riksgäldskontorets nettoutlåning*)	
Computed revenue		
(*Kalkylmässiga inkomster*)		
Grants from the EU (1994/95 –)		
(*Bidrag från EU*)		
Subtotal	Subtotal	Total deficit (borrowing requirement)
Borrowing requirement (= total deficit)		
Total	Total	0

However, not all let lending was consistently included in the budget. Between 1980/81 and 1989/90, net lending, ΔSGC_t, was included under the heading "other expenditure". From 1990/91, ΔSGC_t was incorporated in the National Debt Office's net lending and disappeared from the budget. In addition, in 1985/86 the National Debt Office began its own net lending outside the budget. In 1997, all net lending was again included in the budget. Thus, during 1985/86–1995/96 we must augment the expenditures with net lending from the National Debt Office.

Finally, a cash correction factor was added to the expenditure side in 1997. Adding the National Debt Office's net lending and the cash correction factor makes the budget deficit equal to the central government's borrowing requirement. The deficit is then calculated straightforwardly as total expenditures minus total revenues. The expenditure, revenue and deficit figures for the period 1912–2011 are presented in the appendix.

5.4. Government debt

Currently there are three official measures of central government debt in Sweden. We report total gross debt at par value, which is currently published by the Swedish National Debt Office (*Riksgäldskontoret*). The Swedish National Financial Management Authority (*Ekonomistyrningsverket*) reports total gross debt at par value minus the government debt holdings of government authorities, so-called consolidated government debt, as well as total gross debt at par value.[22] Finally, Statistics Sweden (*Statistiska centralbyrån*) reports consolidated government debt at market value, in accordance with EU and UN national account standards.

There is no single best measure of government debt. Here we focus on the consistency of the changes in debt and the deficit. Consistent measures can be constructed with either par values or actual values. If government debt is sold initially below par, that is, at a discount, the flow of money from new bond sales will be less than the change in debt. The change in debt at par value will then correspond to the deficit, *provided* the discount is included as an expenditure. This has been the case in the Swedish budget at least since 1912. By the same token, if the discounts are not included in the budget, the deficit will be smaller than the change in debt at par value (and equal to the change in debt at market value).

Robert Barro (1987) argued that, due to large discounts on issues of new debt, the nominal value of government debt in the United Kingdom gives an exaggerated picture of the true debt burden in the 18th and 19th centuries. In principle the govern-

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22 Official consolidated debt does not correspond to consolidated central government debt as defined in section 6, since the debt held by the Riksbank is not subtracted in the official measure. The official consolidated government debt constitutes the central government's contribution to the public sector debt that is used in the Maastricht criteria.

ment can choose any nominal value of new debt issues and then sell at a discount.[23] To calculate a more realistic debt measure, he instead used the cumulated deficits as the measure of government debt from a benchmark in 1700. (Thus he assumed that the discounts are not included in expenditures.) We stick to the official nominal debt numbers, as they are consistent with the method in the government budget accounts, and we wish to study whether there are other possible sources of discrepancies between the deficit and the change in debt. In addition, the discounts below par have been so small that the difference between the evolution of debt valued at par and at actual value is negligible. Between 1857 and 1960/61, the cumulative discount constituted less than half of one per cent of the total debt (*Riksgäldskontorets årsbok 1960/61*).

We follow the official statistics on foreign debt, which before 1988/89 is converted into SEK at the rate when the bond was issued. After 1988/89 the debt is recorded at the actual exchange rate.[24]

Over the years, the composition of government debt has changed quite substantially. We prefer to use the official figures as much as possible. One problem is "interest-bearing" versus "non-interest-bearing" debt. Up until 1809, as we do not have any information on the division between these two categories, we include all debt. During the first half of the 19th century, political decisions changed the non-interest-bearing component several times. We therefore choose to include all debt, that is, interest-bearing plus non-interest-bearing, up until 1857. From the mid-1830s the non-interest-bearing component was quite small and stable. From 1858 we include only interest-bearing debt as presented by the National Debt Office.

We divide the description into four periods according to data availability. During the first period, 1670–1718, annual figures are available for the government's loans at the Riksbank. Annual data are not available for the second period, 1719–76. In the third period, 1777–1857, annual figures are presented by the National Debt Office. The fourth period runs from 1858, when the government began large-scale foreign borrowing, until today.[25]

Figure 5.3 shows the historical, mostly positive, connection between wars and the government debt:GDP ratio and the unique peace-time increase in debt in the 1970s. Both features are familiar from other Western countries.

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23 Selling new callable government debt below par can in some instances be advantageous for the government through early retirement.

24 More details on valuation principles and an overview of measures of government debt used before the current three measures are available in Riksgäldskontoret (2002).

25 See Dahmén (ed.) (1989) on the history of Swedish government borrowing since 1789.

Figure 5.3. *Government debt 1670–2010 as a share of nominal GDP (B).*
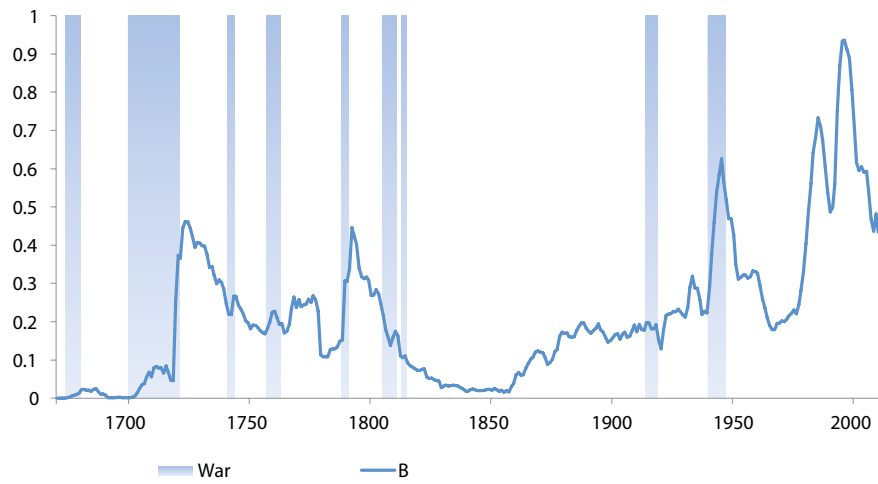
Sources: Dept in Appendix, nominal GDP, see Figure 5.2.

Bringing home the body of King Karl XII of Sweden. In that year, 1718, the Swedish state debt reached a high point. Painted by Gustaf Cederström (1845–1933) in 1884.
Source: Nationalmuseum.

5.4.1 The period 1670–1718

The only annual figures on government debt available in printed form that we are aware of record government loans in the Riksbank, published in Sveriges Riksbank (1918). General histories of the regency period, 1660–72, refer to the period as one of peace but with weak state finances due to diminishing tax receipts. The diminishing receipts were occasioned in turn by transfers of government-owned land to the nobility before and during the regency. State finances were then improved by confiscations of the transferred land, the so-called "Reduction", during the reign of Karl XI, 1672–97. New loans from the Riksbank began on a small scale in 1670, two years after the founding of Sveriges Riksbank, even though the Bank's charter clearly prohibited lending to the state. Borrowing accelerated during the Scanian war (*Skånska kriget*, 1675–79) and debt peaked in 1685. In the next few years the loans from the Riksbank were quickly reduced by amortization. By this time, the only form of government debt seems to have been the loans from the Riksbank: "…the government's borrowing requirements disappeared fully due to the large financial reforms of Karl XI" (Heckscher (1936), p. 372). The Great Northern War, which began in 1700 and ended with the death of Karl XII in 1718 (peace treaty in 1721), led to an accumulation of debt that cannot be followed year by year, except for the borrowing at the Riksbank ("*Kronans yngre lån*"). In 1719, government debt to the Riksbank made up 14 per cent of all the debt in that year, as shown in Table 5.13.

5.4.2 The period 1719–76

A National Debt Office, under the supervision of parliament, *Riksens ständers kontor*, was set up in 1719 to pay off the debt accumulated from 1697 to 1718 during the reign of Karl XII. Almost no new loans were taken up before 1740 and budget surpluses were used to pay off this so-called "old debt", which was not eliminated until well into the 19th century. From 1740 the government started to raise new loans to finance the war against Russia (1741–43).

   The different components of the debt have been estimated separately, using available data on the debt in certain years in combination with available data on new loans and amortization. We calculate the debt recursively back in time from known amounts, using the relation:

$$B_{t-1} = B_t - L_t + AM_t. \tag{10}$$

We now describe the procedures and the data we use for the old debt as well as for the new debt from 1740 onwards.

   The so-called "old debt" can be divided into five parts as described in Table 5.13, with the initial values in 1719. The largest part consists of: debt to the Riksbank, the insurance- and salary-notes, and the number debt. The debt to the Riksbank is known from the Bank's annual balance sheets, given in Sveriges Riksbank (1931).

The other debts were left to the newly formed National Debt Office to pay off; as the Office's main books are arranged in four-year periods, we have interpolated to estimate annual debt figures.[26]

Table 5.13. *Composition of government debt in 1719, incurred before 1719, the "Old debt".*

Swedish name	Explanation	Total 1719, dsm
Bankogälden	Loans from the Riksbank	6,910,796
Försäkrings- och lönesedlar	Interest bearing promissory notes paid to government employees in exchange for token money (mynttecken and myntsedlar) issued 1715–1718.	11,049,911
Nummergälden	Number debt. Private loans classified in 11 groups in 1719 in order of priority.	24,139,180
Kronoförpantningar	Swaps of income from government properties against fixed down payment to the government for a limited period.	2,301,358
Diverse kreditorer	Short-term loans from various creditors	2,413,481

We have calculated the initial value of debt in 1719 from known amounts in 1718. The amount of the so-called insurance notes, issued initially in 1719, was estimated; these notes were issued in exchange for token money (*mynttecken* and *myntsedlar*) to finance war from 1715 to 1718, at a devalued rate of 50 per cent. The number debt consisted of various types of loan; it included loans from churches, unpaid wages, bills etc. The name "number debt" refers to its division into 12 groups (labeled 1 to 11 and one group "without number"), which were to be paid off beginning with group 1. To this debt must be added interest arrears, which had the lowest priority.

The "new debt" can be divided into five parts, as described in Table 5.14. To calculate the annual debt figures, we use information on specific new loans and the amortization of old loans given in Åmark (1961, chapter 10). Further information can be obtained by studying the debt service figures in the proposed budgets. We also make use of the inventories of total debt that were made in 1764 and 1777.[27]

Table 5.14. *Composition of government debt incurred after 1740.*

Swedish name	Explanation	Start year	Maximum amount, dsm (year)
Bankogäld	Loans from the Riksbank	1743	49,585,997 (1772)
Utrikes lån	Foreign debt	1759	29,444,790 (1776)
Lotterilån	Lottery loans	1758	6,650,175 (1759)
Andra inrikes lån	Other domestic debt	1751	7,793,281 (1764)
Lån från publika kassor	Loans from public depositories	1731	4,437,240 (1764)

26 Details are given in appendix A in Fregert and Gustafsson (2005).

27 For the exact calculations and further explanations see appendix B in Fregert and Gustafsson (2005).

5.4.3 The period 1777–1857

Between 1777 and 1809, the National Debt Office presented annual debt figures, which are given in Åmark (1961). We include the debt issued by *Riksgäldskontoret* after 1789 in the form of short-term notes, so-called *riksgäldssedlar*, which became a medium of exchange. This part of the debt has the same character as the loans from the Riksbank.[28]

Between 1811 and 1815, foreign debt was eliminated by means of an effective default by the Swedish parliament to compensate for the losses Sweden had suffered in the Napoleonic wars (see Åmark, 1961, pp. 654–660).

In addition to the debt handled by the National Debt Office, in 1808-30 the government proper had a debt to the Riksbank, which has to be added to the figures from the National Debt Office. This debt, which arose to cover expenditures for the 1808-09 war, was taken over by the National Debt Office in 1830.

Only semiannual data are available for most of the period from 1815 to 1850 but this is a minor problem because there were no dramatic changes in the debt. (The only major changes were the repayment of the debt handled directly by the government proper, and for this part we have annual data from the Riksbank's balance sheet.) To approximate the debt for the missing years we use the income-expenditure statement of the National Debt Office on new loans and amortizations.

Painting of a Russian vs. Swedish naval battle in Finnish waters. By Johan Tietrich Schoultz.
Source: Wikimedia.

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28   See further footnote 36 for the treatment of *riksgäldssedlar*.

5.4.4. The period 1858–2010

For this period we use the official data from the National Debt Office and add, as in the previous period, the debt of the National Board of Trade. The total debt is presented in the appendix and in Figure 5.4.[29] Between 1923/24 and 1995/96 the state budget accounts were given for broken fiscal years, beginning on July 1st, so we have chosen the debt figures at mid-year (30 June) to conform with the budget data.

5.5. The consolidated central government and fiscal seigniorage

For a joint analysis of fiscal and monetary policy, it is useful to look at the consolidated central government (fiscal plus monetary branch). In particular, this enables us to calculate seigniorage revenue in a manner that is consistent with the general accounting principles presented in section 2.[30] The central bank budget constraint, derived from its balance sheet and income-expenditure statement, can be written as:

$$\underbrace{\Delta H_t + \Delta A_t + i_t B_{t-1}^{CB} + i_t^* B_{t-1}^* + OS_t}_{Sources} = \underbrace{\Delta B_t^{CB} + \Delta B_t^* + CBT_t + OU_t}_{Uses}. \qquad (11)$$

The central bank receives funds from: new high-powered money, ΔH_t; new government deposits at the central bank, ΔA_t; interest income on its holdings of government debt, $i_t B_{t-1}^{CB}$, and non-government debt, $i_t^* B_{t-1}^*$; and other sources, OS_t.[31] The central bank uses funds to: buy domestic government bonds, B_t^{CB}; buy domestic non-government and foreign bonds, B_t^*; transfer funds to the fiscal branch, CBT_t; and other uses, OU_t.[32]

Consolidation is achieved by adding the one-period budget constraints of the fiscal branch (3) and of the central bank (11),[33]

$$\begin{aligned} T_t + CBT_t + \Delta B_t + \Delta H_t + \Delta A_t + i_t B_{t-1}^{CB} + i_t^* B_{t-1}^* + OS_t &= \\ = G_t + I_t + i_t B_{t-1} + \Delta A_t + \Delta B_t^{CB} + \Delta B_t^* + CBT_t + OU_t. \end{aligned} \qquad (12)$$

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29 Separate data for the National Debt Office and the National Board of Trade are available in appendix F in Fregert and Gustafsson (2005).

30 For a related discussion see Neumann (1992, 1996).

31 Other sources of the Riksbank (OS_t) is equal to: the change in capital plus other revenues (for instance capital gains) plus the increase in deposits from other than the government (or bank deposits, included in) ΔH_t plus the increase in other liabilities.

32 Other uses of the Riksbank (OU_t) is equal to: the increase in other assets plus the operational costs plus its profit (not transferred to the fiscal branch).

33 See Walsh (1998, pp. 132–138) for a discussion of the consolidated budget constraint and the measurement of seigniorage in a closed economy.

Equation (12) can be simplified as:[34]

$$T_t + S_t + \Delta B_t^{Public} = G_t + I_t + i_t B_{t-1}^{Public} . \tag{13}$$

where $B_t^{Public} = B_t - B_t^{CB}$ is government debt held by the public and S_t is seigniorage:

$$S_t = (\Delta H_t - \Delta B_t^*) + i_t^* B_{t-1}^* + (OS_t - OU_t) . \tag{14}$$

Seigniorage represents a true revenue source for the consolidated government as it can be used to finance expenditures. It consists of the flow of new high-powered money that is not used to buy domestic non-government bonds and foreign bonds, $\Delta H_t - \Delta B_t^*$, interest on non-government bonds, $i_t^* B_{t-1}^*$, and other net inflow to the central bank, $OS_t - OU_t$.[35] Rearranging (13) gives us an expression for the consolidated budget deficit:

$$DEF_t^C = (G_t + I_t + i_t B_{t-1}^{Public}) - (T_t + S_t) = \Delta B_t^{Public} . \tag{15}$$

where DEF_t^C is the deficit of the consolidated central government. We note three differences between the consolidated and the fiscal branch deficit. First, seigniorage enters as additional revenue for the consolidated central government. Second, only interest payments to the public matter for the consolidated deficit, since the interest payments from the fiscal branch to the central bank are an internal transaction that washes out as shown by (15). Third, central bank transfers do not matter, since they also represent internal transactions as shown by (15).[36]

   Table 5.15 shows the source-use statement for the consolidated government corresponding to Table 5.4, with the budget deficit below the line and seigniorage above the line as sources.

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34 We assume that all government financial assets (A_t) are held at the central bank and, for simplicity, we ignore the terms "price and volume changes" and "errors and omissions".

35 If the central bank does not buy domestic non-government bonds or foreign bonds and if the other net inflow of the central bank is zero, seigniorage is equal to ΔH_t, a common empirical measure, see for example Fischer (1982).

36 The debt in *riksgäldssedlar* was initially considered a public debt, but the bonds soon turned into a currency. The decision in 1803 to let the Riksbank redeem 15 out of 18 million riksdaler riksgälds against 10 million riksdaler specie, confirmed the monetization of this debt. In the consolidation, we treat the riksdaler riksgälds as loans from the central bank from the beginning in 1789 and thus they never appear as public debt. Instead their increase represents seigniorage. A small error arises from the 3 million riksdaler riksgälds not redeemed by the Riksbank and which hence should be treated as public debt. Since we cannot associate the creation of these 3 million with any specific year, we have not corrected for this.

Table 5.15. *Fiscal and monetary branch sources and uses.*

	Sources (Inkomster)	Uses (Utgifter)
Monetary branch (central bank)	Seigniorage = net sources = $S_t = (H_t - B_t^*) + i_t^* B_{t-1}^* + OS_t - OU_t$	
Fiscal branch	Taxes and other revenues, T_t	Current expenditures, G_t Investment, I_t Interest on government debt, $i_t B_{t-1}^{Public}$
	Budget deficit, $DEF_t^C = \Delta B_t^{Public}$	
	Total	Total

For practical reasons, we use an alternative expression of seigniorage, obtained by combining the definition of S_t in (14) with the central bank budget constraint in (11):[37]

$$S_t = (\Delta B_t^{CB} - \Delta A_t) + (CBT_t - i_t B_{t-1}^{CB}). \tag{16}$$

Seigniorage is here expressed as the sum of fiscal branch net borrowing from the central bank, $\Delta B_t^{CB} - \Delta A_t$, and transfers from the central bank to the fiscal branch net of interest payments from the fiscal branch to the central bank, $CBT_t - i_t B_{t-1}^{CB}$.[38]

Yearly data on seigniorage, interest on public debt, consolidated deficit and the public debt are presented in the appendix.

5.6. Conclusions

We have presented two sets of data: fiscal branch measures and consolidated (fiscal and monetary branch) measures. Both should be useful for macroeconomic research, particularly studies that focus on the interplay between fiscal and monetary policy. Depending on the institutional set-up, studies of causation between revenues and expenditures and the sustainability of fiscal policy may use either or both measures.

The most salient feature of the data is the recent rise in government debt as a fraction of GDP. It passed 60 per cent in the late 1970s, a level that had previously

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37 See appendix L in Fregert and Gustafsson (2005) and Gustafsson (2005). An additional way to express the seigniorage is $S_t = G_t + I_t + i_t B_{t-1}^{Public} - T_t - \Delta B_t^{Public}$, by equation (15). However, following the discussion in the previous section, this will not be correct due to "price and volume changes" and "errors and omissions".

38 This measure is also used by Neumann (1992), from whom we have borrowed the term *fiscal seigniorage*, that is, seigniorage directly used for budget purposes. This flow measure is distinct from the extra revenue the government obtains from capital gains due to unexpected inflation, which erode the real value of the debt.

been seen only in connection with the wars of Karl XII and World War II. The fast debt build-ups in 1978–82 and 1991–94 dwarf the slow increase between 1858 and 1914, when the government borrowed in international markets to build a national railway system. Remarkable are also the steady repayments of war-induced debts, inherited from despotic kings, through budget surpluses in 1719–56 and 1810–54 under new proto-democratic constitutions.

The major break in the series occurs in 1821, when published closed accounts begin. Major changes in the presentation of the budget occurred in: 1912, when the budget was unified to show only flows; 1938, when the accounts were divided into a current (working) and a capital account; 1980, when the budget was unified; and 1996, when the deficit was defined as the borrowing requirement. A test of the figures' reliability is provided in Fregert and Gustafsson (2008, section 5). We show that the figures' reliability increases with their nearness to the present, as indicated by the decreasing difference between the change in debt and the total budget deficit.

Appendix

Table A5.1. *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	$G_t + I_t$	$i_t B_{t-1}$	T_t	CBT_t	DEF_t	B_t	$i_t B^P_{t-1}$	S_t	DEF^C_t	B^P_t
1670						3				
1671						2		-1		
1672						2		0		
1673						3		1		
1674						10		8		
1675						29		18		
1676						57		29		
1677						100		42		
1678						115		15		
1679						142		28		
1680						201		59		
1681						215		14		
1682						193		-22		
1683						196		3		
1684						208		12		
1685						223		15		
1686						238		16		
1687						160		-78		
1688						100		-60		
1689						106		7		
1690						84		-23		
1691						19		-64		
1692						21		2		
1693						24		2		
1694						26		2		
1695						26		0		
1696						26		0		
1697						26		0		
1698						26		0		
1699						26		0		
1700						26		0		
1701						26		0		
1702						69		43		
1703						154		86		
1704						278		124		
1705						426		147		
1706						441		15		
1707						737		296		
1708						943		206		
1709						994		51		
1710						995		0		
1711						995		0		
1712						1,000		5		
1713						998		-2		
1714						992		-6		
1715						1,213		221		
1716						1,212		-1		

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	$G_t + I_t$	$i_t B_{t-1}$	T_t	CBT_t	DEF_t	B_t	$i_t B_{t-1}^P$	S_t	DEF_t^C	B_t^P
1717						1,200		-12		
1718						1,152		-48		
1719						7,802				6,651
1720						7,749		-53		6,608
1721						7,703		-46		6,563
1722	1,021	70	1,143		-53	7,659	-	-93	-30	6,520
1723	1,023	70	1,187		-95	7,442	-	-122	-42	6,303
1724	1,005	70	1,190		-115	7,304	-	-74	-111	6,165
1725	967	70	1,194		-156	7,256	-	30	-256	6,024
1726	914	70	1,089		-105	7,130	-	-97	-78	5,898
1727	945	70	1,338		-323	6,976	-	-163	-230	5,744
1728	1,147	70	1,413		-197	6,837	-	-101	-166	5,605
1729	1,096	70	1,428		-262	6,634	-	-162	-170	5,472
1730	916	70	1,248		-262	6,498	-	-106	-225	5,336
1731	896	66	1,209		-247	6,241	-	-114	-199	5,154
1732	823	65	1,151		-263	6,043	-	-65	-263	4,956
1733	839	66	1,184		-279	5,859	-	-45	-300	4,772
1734	847	65	1,197		-285	5,674	-	-60	-290	4,586
1735	930	66	1,283		-288	5,481	0	-104	-249	4,394
1736	950	66	1,303		-288	5,278	0	-21	-332	4,191
1737	949	65	1,305		-291	5,078	0	-82	-274	3,991
1738	855	66	1,216		-296	4,875	0	-165	-197	3,787
1739	997	66	1,238		-175	4,744	1	-237	-3	3,656
1740	945	67	1,257		-245	4,604	2	-71	-239	3,516
1741	1,689	70	1,757		2	4,504	5	-10	-53	3,416
1742	1,506	72	1,619		-41	4,368	7	-8	-98	3,280
1743	1,471	72	1,523		19	5,189	6	978	-1,024	3,153
1744	1,326	130	1,716		-260	5,114	8	-31	-351	3,072
1745	1,103	134	1,441		-204	4,934	11	-161	-166	2,979
1746	1,174	134	1,487		-180	4,796	16	-121	-176	2,892
1747	1,767	137	1,617		286	5,004	22	158	14	2,774
1748	1,471	156	1,841		-213	4,922	23	-62	-285	2,662
1749	1,298	158	1,828		-372	4,793	22	-110	-398	2,530
1750	1,698	158	2,443		-586	4,539	23	-206	-516	2,400
1751	1,800	153	1,677		276	4,823	25	3	145	2,449
1752	1,882	168	1,806		245	4,737	26	-167	269	2,336
1753	1,567	168	1,864		-129	4,714	24	-47	-226	2,242
1753	1,620	173	1,933		-141	4,691	25	-117	-172	2,161
1755	1,645	213	1,850		7	4,714	61	-154	10	2,105
1756	1,827	136	2,046		-83	4,911	58	-43	-118	2,231
1757	2,447	136	2,211		372	5,634	56	741	-449	2,131
1758	3,306	173	2,453		1,026	6,676	68	776	145	2,413
1759	2,453	193	2,306		340	7,663	65	-62	274	3,116
1760	3,239	231	2,711		759	8,303	94	179	444	3,176
1761	3,033	257	2,687		603	8,721	103	42	407	3,365
1762	2,789	273	2,499		562	10,246	112	1,297	-896	3,619
1763	4,251	300	2,576		1,975	11,169	102	-91	1,867	4,394
1764	2,700	336	2,699		336	10,523	132	-161	294	3,923

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	G_t+I_t	i_tB_{t-1}	T_t	CBT_t	DEF_t	B_t	$i_tB^P_{t-1}$	S_t	DEF^C_t	B^P_t
1765	2,417	337	2,367		387	10,567	139	-83	272	3,831
1766	2,171	329	3,450		-950	10,763	127	-16	-1,136	3,718
1767	2,736	331	3,329		-262	10,546	120	-120	-354	3,603
1768	1,971	335	2,601		-295	10,025	127	-599	96	3,385
1769	1,878	121	2,352		-353	9,295	121	34	-387	2,717
1770	2,171	105	2,128		148	11,552	105	108	40	4,449
1771	2,391	181	2,717		-145	11,963	181	220	-366	4,370
1772	2,712	408	3,375		-255	12,636	180	247	-730	4,372
1773	3,065	430	2,857		638	12,536	182	306	84	4,296
1774	3,090	430	3,605		-84	12,422	183	-192	-140	4,232
1775	2,533	429	3,288		-327	13,235	183	-497	-76	5,416
1776	3,115	480	3,063		532	14,503	245	-427	724	6,951
1777	2,949	557	3,173		333	14,724	335	-208	320	7,160
1778	3,197	258	5,013		-1,558	13,585	258	79	-1,637	6,021
1779	3,401	270	3,411		260	6,895	270	-7,415	7,675	6,695
1780	3,426	244	3,225		445	6,446	244	-119	563	6,446
1781	3,303	243	3,315		231	6,328	243	1	230	6,328
1782	3,321	236	3,423		135	6,559	236	-114	248	6,559
1783	3,822	242	4,518		-455	7,799	242	-215	-241	7,799
1784	3,686	305	3,876		114	7,672	305	153	-39	7,672
1785	3,913	349	3,819		442	8,094	349	-26	468	8,094
1786	3,780	356	3,554		582	8,567	356	27	555	8,567
1787	3,863	350	3,777		436	9,720	350	-80	516	9,720
1788	3,810	389	3,767		432	10,363	389	214	218	10,363
1789	17,420	235	5,231		12,424	21,351	235	5,162	7,263	16,120
1790	13,614	947	13,662		899	22,237	947	2,839	-1,940	13,792
1791	9,532	952	9,904		581	24,261	952	-24	605	16,215
1792	14,333	872	7,482		7,723	33,507	872	2,192	5,531	23,237
1793	5,587	953	5,896		644	33,934	953	1,187	-543	22,591
1794	6,337	984	5,859		1,463	36,937	984	1,333	129	24,233
1795	5,953	871	6,659		164	34,151	871	2,055	-1,891	19,511
1796	7,630	695	6,643		1,683	32,922	695	807	875	17,463
1797	5,020	795	5,513		303	32,738	795	-1,724	2,027	18,963
1798	5,739	838	6,445		132	33,976	838	1,143	-1,011	19,098
1799	6,862	988	7,060		790	38,142	988	1,085	-295	22,105
1800	7,731	950	7,496		1,185	38,901	950	2,040	-855	20,845
1801	6,721	1,035	6,988		767	40,867	1,035	-492	1,260	22,243
1802	7,096	1,083	9,844		-1,664	42,349	1,083	813	-2,477	23,406
1803	8,606	1,136	8,987		1,246	40,248	1,136	-3,053	4,192	23,041
1804	9,451	1,023	9,950		524	36,854	1,023	-2,822	3,346	21,986
1805	9,859	1,015	11,118		-243	32,723	1,015	-1,799	1,556	20,269
1806	9,454	949	10,874		-471	30,098	949	-2,414	1,942	19,922
1807	9,837	914	10,518		233	27,576	914	-1,470	1,703	19,619
1808	25,986	945	17,917		9,013	27,984	945	488	8,524	19,668
1809	21,646	963	8,954		13,655	35,135	903	6,253	7,341	18,578
1810	17,611	1,135	12,807		5,938	41,074	720	1,683	3,841	22,497
1811	13,751	1,306	14,027		1,029	42,103	785	1,771	-1,262	22,479
1812	11,347	1,381	21,546		-8,818	33,285	795	147	-9,550	13,527

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	G_t+I_t	i_tB_{t-1}	T_t	CBT_t	DEF_t	B_t	$i_tB^P_{t-1}$	S_t	DEF^C_t	B^P_t
1813	33,047	1,044	33,131		960	34,245	439	-1,795	2,150	13,576
1814	32,650	1,036	32,454		1,231	35,476	461	2,247	-1,591	12,803
1815	13,459	1,012	20,965		-6,495	28,981	449	-2,100	-4,958	8,456
1816	15,427	747	16,632		-458	28,523	211	-2,637	1,642	9,524
1817	14,553	724	16,285		-1,008	27,515	223	-857	-653	9,540
1818	15,900	702	17,638		-1,036	26,478	236	-973	-529	8,823
1819	17,029	678	17,976		-268	26,210	249	-2,866	2,168	9,856
1820	15,542	685	17,016		-789	25,421	278	-1,367	171	10,108
1821	17,403	679	16,677		1,405	24,504	295	-1,117	2,138	9,861
1822	16,355	668	16,952		72	23,867	307	-831	542	9,850
1823	15,318	657	17,034		-1,059	17,805	320	-906	-490	3,944
1824	17,178	631	17,131		678	17,109	318	268	97	3,504
1825	16,509	618	17,671		-545	17,920	315	-876	29	4,559
1826	18,278	605	19,530	533	-1,180	17,366	312	-771	-169	4,244
1827	18,880	593	18,423	502	547	16,764	310	404	361	3,883
1828	17,276	581	17,436	528	-107	15,916	307	-893	1,040	3,276
1829	12,664	328	21,076	537	-8,620	10,073	64	-7,401	-946	3,471
1830	22,163	328	20,540	481	1,469	11,811	63	-633	2,319	5,211
1831	21,853	355	21,772	75	360	13,603	91	180	-9	7,003
1832	20,991	394	21,302	121	-39	13,333	130	-860	678	6,733
1833	20,415	397	20,938	207	-334	13,043	133	51	-442	6,443
1834	20,977	399	20,765	167	444	13,183	135	623	-276	6,583
1835	20,956	432	21,572	107	-292	13,249	168	-637	188	6,781
1836	22,774	455	22,192	746	291	12,980	196	-84	862	6,644
1837	25,484	473	24,468		1,490	11,326	220	-357	1,593	5,122
1838	24,280	418	25,043		-345	10,849	170	1,278	-1,871	4,777
1839	23,740	362	24,079		24	8,830	120	-2,589	2,369	2,890
1840	23,199	316	23,463		52	8,349	79	-1,467	1,282	2,541
1841	23,514	296	24,078		-267	10,369	64	-2,215	1,716	4,693
1842	23,521	343	19,873	3,467	525	11,515	123	2,982	789	5,971
1843	22,197	355	22,778		-225	10,209	134	2,024	-2,471	4,797
1844	20,536	348	20,923		-40	8,907	132	303	-559	3,627
1845	22,679	341	23,190		-170	9,362	130	422	-803	4,214
1846	24,233	339	25,152		-579	9,823	116	-687	-115	4,807
1847	24,222	338	24,023	907	-370	11,146	97	-1,272	1,568	6,262
1848	24,604	361	20,645	4,922	-602	12,472	141	7,267	-3,166	7,720
1849	25,776	384	26,599		-439	12,158	190	-1,677	1,044	7,538
1850	25,204	355	25,579		-19	11,408	151	-758	534	6,920
1851	27,798	309	27,760		347	13,639	125	-283	446	9,283
1852	28,340	304	23,870	3,150	1,624	12,893	125	3,206	1,388	8,669
1853	26,933	298	28,193		-961	10,828	125	-317	-817	6,736
1854	31,145	323	30,279		1,189	13,929	158	-3,979	5,003	9,969
1855	33,940	324	29,560	4,050	654	12,223	158	-84	4,622	8,395
1856	38,852	320	38,538		634	17,206	161	4,933	-4,458	13,510
1857	41,675	287	36,683		5,280	14,091	138	-183	5,314	10,527
1858	50,975	270	31,527	1,500	18,219	23,645	119	3,564	16,003	20,213
1859	49,573	486	33,540		16,519	29,051	343	1,613	14,763	25,751
1860	50,322	1,607	35,776		16,153	49,788	1,470	-3,680	19,695	46,620

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	G_t+I_t	i_tB_{t-1}	T_t	CBT_t	DEF_t	B_t	$i_tB^P_{t-1}$	S_t	DEF^C_t	B^P_t
1861	46,967	2,308	39,013	1,000	9,262	57,060	2,181	-1,099	11,234	54,024
1862	48,635	2,190	39,636		11,189	52,410	2,061	5,254	5,805	45,596
1863	54,804	2,379	43,543		13,639	54,695	2,076	-282	13,618	48,070
1864	61,478	2,696	44,347		19,827	67,693	2,403	2,438	17,095	61,254
1865	59,571	3,524	40,659	5,000	17,436	78,248	3,239	4,405	17,746	70,820
1866	64,215	3,992	42,522		25,685	91,004	3,662	1,503	23,852	83,149
1867	47,872	4,541	38,638	3,400	10,375	99,672	4,170	2,573	10,831	91,160
1868	49,600	5,240	38,658	1,800	14,381	110,663	4,817	610	15,149	104,131
1869	49,670	5,272	39,666	1,500	13,776	114,923	4,933	1,696	13,241	107,866
1870	51,979	5,393	49,819	3,500	4,053	118,616	5,073	126	7,106	111,742
1871	52,325	5,634	58,681	1,500	-2,222	123,020	5,310	1,341	-2,387	116,123
1872	59,757	5,880	62,577	1,351	1,710	124,302	5,555	3,449	-714	117,376
1873	65,977	5,534	72,313	-	-802	121,113	5,236	-5,147	4,047	116,196
1874	90,557	5,642	81,292	-	14,907	130,697	5,401	-9,928	24,593	126,585
1875	91,567	6,030	79,689	500	17,408	140,360	5,804	5,868	11,815	137,443
1876	93,417	7,108	83,732	1,250	15,544	176,356	6,954	181	16,459	173,494
1877	92,670	8,093	82,281	1,300	17,182	182,343	7,955	8,710	9,634	175,585
1878	98,316	8,884	79,823	900	26,478	212,734	8,597	-4,010	31,100	210,008
1879	86,686	9,588	71,207	1,350	23,717	220,482	9,442	6,966	17,956	214,406
1880	78,822	9,698	81,026	1,300	6,194	230,542	9,341	1,340	5,796	222,663
1881	81,623	9,126	87,208	1,185	2,356	234,902	8,533	-2,533	5,481	227,505
1882	72,790	9,448	85,853	1,250	-4,865	229,092	9,046	-2,181	-1,836	223,243
1883	77,785	9,196	87,644	1,600	-2,263	228,013	8,922	2,993	-3,930	221,589
1884	77,240	9,449	88,666	1,300	-3,277	230,347	9,156	-4,879	2,609	225,897
1885	81,410	9,633	88,644	1,300	1,100	247,210	9,437	2,073	130	242,084
1886	88,333	10,011	84,560	1,200	12,584	245,949	9,756	406	13,122	241,244
1887	90,154	9,676	81,114	-	18,716	246,109	9,464	1,530	16,974	241,048
1888	85,050	9,761	92,861	1,250	699	265,034	9,527	-1,720	3,436	260,875
1889	86,111	10,151	98,965	-	-2,703	259,054	9,938	3,685	-6,601	254,140
1890	87,641	10,983	102,146	1,300	-4,822	259,653	10,638	1,916	-5,783	253,036
1891	98,684	9,779	98,017	1,300	9,146	265,413	9,477	-2,335	12,479	260,822
1892	97,837	9,984	95,494	1,850	10,478	274,047	9,791	2,981	9,154	268,845
1893	98,452	10,329	99,495	1,750	7,536	278,811	10,118	2,583	6,492	274,085
1894	98,401	10,544	113,316	2,801	-7,173	293,292	10,330	-3,858	-727	288,858
1895	94,923	10,456	119,121	2,480	-16,222	287,647	10,290	-84	-13,824	282,653
1896	123,946	10,269	121,780	2,340	10,095	292,878	10,079	1,687	10,558	287,907
1897	108,910	10,086	136,451	2,700	-20,155	290,750	9,913	-1,940	-15,687	285,813
1898	117,477	10,028	144,023	1,800	-18,317	286,920	9,838	3,548	-20,256	282,778
1899	132,797	10,456	153,516	2,000	-12,263	319,724	10,304	16,722	-27,137	315,676
1900	149,593	10,905	153,359		7,138	343,090	10,759	-59	7,052	340,185
1901	160,508	12,276	143,636		29,148	354,277	12,152	-5,736	34,760	352,061
1902	171,354	12,192	147,398	2,000	34,149	354,040	12,111	-9,256	45,323	351,190
1903	171,997	12,121	183,177	2,716	-1,775	352,511	12,008	-22,388	23,217	350,671
1904	190,373	12,056	185,985	3,285	13,159	391,190	11,976	3,532	12,832	389,390
1905	193,369	13,411	194,613	4,000	8,166	412,243	13,352	-1,870	13,978	410,443
1906	198,385	13,301	188,519	5,100	18,066	426,907	13,228	13,091	10,003	425,107
1907	219,597	14,693	208,755	5,350	20,186	468,102	14,622	30,570	-5,104	467,037
1908	252,441	17,133	196,096	6,400	67,077	519,071	17,099	-4,903	78,346	519,071

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	G_t+I_t	i_tB_{t-1}	T_t	CBT_t	DEF_t	B_t	$i_tB^p_{t-1}$	S_t	DEF^c_t	B^p_t
1909	257,775	18,585	206,570	8,675	61,115	554,173	18,585	-21,944	91,734	554,173
1910	250,573	19,411	236,001	8,323	25,661	543,383	19,411	15,616	18,368	543,384
1911	251,235	19,140	235,768	6,256	28,350	611,959	19,140	8,340	26,266	611,959
1912	224,878	22,511	223,265	6,399	17,725	607,964	22,511	-19,113	43,237	607,964
1913	230,019	22,697	239,891	6,311	6,514	648,287	22,697	-16,288	29,113	648,287
1914	237,197	25,438	234,934	7,058	20,643	744,455	25,438	11,046	16,655	741,200
1915	375,554	30,840	356,682	8,800	40,912	854,871	30,631	-346	49,849	848,895
1916	391,638	36,193	406,547	8,760	12,525	993,246	35,862	-21,636	42,590	992,644
1917	598,720	44,056	618,007	8,120	16,648	1,149,226	44,024	-12,018	36,754	1,141,226
1918	1,490,966	59,391	817,905	-	732,451	1,656,179	58,898	56,321	675,637	1,653,450
1919	784,003	59,480	862,038	-	-18,555	1,566,998	59,237	-93,717	74,918	1,564,086
1920	844,366	61,874	834,563	-	71,677	1,496,524	61,746	50,289	21,261	1,494,149
1921	1,014,690	64,216	759,162	-	319,744	1,510,987	64,112	-165,983	485,622	1,507,335
1922	826,130	72,231	648,592	3,500	246,270	1,551,464	71,932	-59,973	309,444	1,548,290
1923	360,679	34,288	260,515	12,000	122,452	1,566,441	34,216	221,224	-86,844	1,555,751
1923/24	658,698	81,431	647,503	16,000	76,626	1,634,038	81,195	-29,291	121,681	1,620,273
1924/25	670,994	77,286	620,650	14,000	113,630	1,734,032	76,740	9,294	117,790	1,721,061
1925/26	661,909	81,072	638,167	15,500	89,313	1,735,286	80,308	108,792	-4,742	1,722,335
1926/27	681,977	83,372	656,938	16,000	92,411	1,812,799	82,666	20,146	87,559	1,802,063
1927/28	625,009	87,068	691,131	16,200	4,746	1,825,572	86,464	-50,148	70,489	1,814,554
1928/29	680,415	86,626	718,516	13,900	34,625	1,835,170	86,217	-5,803	53,918	1,829,122
1929/30	684,193	85,997	761,466	17,000	-8,277	1,800,846	85,176	59,654	-51,752	1,778,714
1930/31	704,202	82,439	763,844	19,000	3,797	1,845,644	81,624	-53,554	75,536	1,842,625
1931/32	774,045	81,258	720,482	16,000	118,821	2,155,333	80,970	287,465	-152,932	1,936,913
1932/33	967,400	91,650	726,946	14,000	318,105	2,358,532	86,920	-13,068	340,442	2,098,455
1933/34	842,101	99,296	755,551	27,000	158,846	2,348,962	91,674	-62,563	240,788	2,197,901
1934/35	1,004,607	97,881	895,847	7,000	199,640	2,487,099	92,906	-90,354	292,020	2,358,460
1935/36	962,583	94,457	991,005	4,250	61,784	2,387,183	92,191	-90,392	154,160	2,358,683
1936/37	1,009,475	91,928	1,146,952	2,750	-48,299	2,236,798	91,437	32,529	-78,569	2,234,798
1937/38	1,213,862	88,236	1,290,893	3,900	7,305	2,430,242	87,951	-136,984	147,904	2,389,142
1938/39	1,486,834	91,144	1,440,346	1,500	136,132	2,633,617	89,782	12,802	123,468	2,481,515
1939/40	2,786,450	98,286	1,849,329	-	1,035,407	3,625,020	92,010	910,985	118,146	2,957,677
1940/41	3,737,930	145,514	2,013,633	23,000	1,846,810	5,170,035	135,093	-155,715	2,015,105	4,334,086
1941/42	3,909,613	185,176	2,248,133	19,500	1,827,155	6,926,901	173,678	288,784	1,546,373	5,860,910
1942/43	4,276,544	226,727	2,684,105	20,000	1,799,166	8,731,848	217,210	-196,892	2,006,541	7,684,797
1943/44	4,356,234	265,213	3,096,647	9,500	1,515,300	9,773,651	259,024	6,189	1,512,422	8,652,414
1944/45	4,414,425	288,303	3,244,617	6,000	1,452,111	10,952,782	283,342	-705	1,453,855	9,757,954
1945/46	3,382,532	271,791	3,521,189	7,000	126,133	11,194,922	269,513	-438,317	569,173	10,255,515
1946/47	3,545,347	310,856	3,605,836		250,367	11,419,869	303,113	1,703,516	-1,460,892	9,047,745
1947/48	4,052,614	310,447	4,437,798		-74,737	11,486,857	268,834	196,750	-313,100	8,762,807
1948/49	4,827,908	321,157	4,953,957		195,108	11,861,090	257,740	-183,147	314,839	9,240,913
1949/50	4,999,799	315,265	4,829,105	10,000	475,960	12,072,926	261,370	-56,114	488,179	9,679,609
1950/51	5,813,800	330,521	5,805,598	15,000	323,722	12,420,618	268,920	529,244	-252,122	9,379,673
1951/52	7,229,516	342,794	7,492,224	15,000	65,087	12,329,381	283,690	-988,176	1,009,159	10,152,890
1952/53	8,506,164	297,767	7,793,157	15,000	995,774	12,531,548	255,360	-63,480	1,031,848	10,801,247
1953/54	8,843,610	339,157	8,519,693	15,000	648,074	13,586,656	309,324	50,163	583,078	11,689,988
1954/55	9,341,974	350,145	8,891,828	15,000	785,291	14,524,089	335,565	581,251	204,459	12,239,826
1955/56	10,237,843	432,214	10,056,572	15,000	598,485	15,477,181	419,482	989,722	-388,969	12,181,411

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	G_t+I_t	i_tB_{t-1}	T_t	CBT_t	DEF_t	B_t	$i_tB^P_{t-1}$	S_t	DEF^c_t	B^P_t
1956/57	11,348,296	456,252	10,676,207	15,000	1,113,341	16,818,171	437,957	792,802	317,245	12,830,345
1957/58	12,729,269	569,424	12,004,033	15,000	1,279,660	18,361,740	500,048	93,601	1,131,683	14,193,271
1958/59	13,474,962	598,587	12,589,548	15,000	1,469,001	19,173,374	491,835	-795,652	2,172,901	15,740,625
1959/60	14,600,219	735,612	13,607,010	50,000	1,678,821	20,660,080	624,204	254,219	1,363,194	16,821,757
1960/61	15,395,763	863,561	16,590,675	50,000	-381,351	20,410,939	728,328	306,333	-772,917	16,210,494
1961/62	16,608,275	871,394	17,956,848	50,000	-527,178	19,573,850	734,519	-877,587	263,533	16,138,374
1962/63	18,774,523	768,056	19,769,053	100,000	-326,474	19,075,002	675,597	-305,134	-13,800	16,019,489
1963/64	20,221,163	792,136	20,827,171	100,000	86,128	19,270,222	745,644	282,112	-142,477	15,993,390
1964/65	23,574,560	849,038	24,156,689	100,000	166,908	19,251,809	815,307	-757,393	990,570	16,775,401
1965/66	27,484,465	885,246	27,914,920	100,000	354,791	19,622,132	859,987	1,349,956	-920,424	15,913,711
1966/67	31,153,422	918,823	30,290,702	150,000	1,631,543	21,434,913	885,071	1,263,855	483,936	16,560,099
1967/68	33,956,816	1,075,168	31,951,424	150,000	2,930,560	25,033,906	981,686	617,882	2,369,196	19,609,935
1968/69	36,186,948	1,296,803	34,636,101	200,000	2,647,650	27,000,980	1,194,798	-40,448	2,786,093	21,736,121
1969/70	41,024,809	1,679,259	38,687,114	200,000	3,816,953	30,959,881	1,594,523	1,588,777	2,343,440	24,250,367
1970/71	44,989,486	2,019,802	44,177,767	200,000	2,631,522	33,401,947	1,811,152	768,937	1,853,934	25,821,598
1971/72	52,025,330	1,944,822	50,103,063	200,000	3,667,089	37,209,105	1,693,230	1,653,506	1,961,991	27,985,794
1972/73	56,616,829	2,234,942	52,446,738	200,000	6,205,033	43,211,336	2,077,132	-2,607,492	8,854,714	36,650,913
1973/74	65,828,865	2,696,469	58,882,620	250,000	9,392,714	52,675,454	2,505,662	1,925,462	7,526,445	44,128,532
1974/75	76,981,191	3,738,664	69,672,245	350,000	10,697,610	63,680,071	3,328,611	6,414,698	4,222,860	48,668,673
1975/76	90,958,446	4,133,185	90,917,610	450,000	3,724,021	68,759,943	3,245,746	-7,801,129	11,087,712	61,215,363
1976/77	107,042,809	5,416,337	101,424,916	550,000	10,484,230	82,340,463	4,079,064	-108,530	9,805,487	73,961,639
1977/78	127,549,487	6,915,824	108,636,130	650,000	25,179,180	105,237,931	5,279,391	-1,839,491	26,032,239	97,790,186
1978/79	146,139,105	8,802,487	115,613,786	650,000	38,677,806	139,086,309	6,873,123	1,454,017	35,944,425	128,970,281
1979/80	164,067,546	14,508,895	127,842,813	750,000	49,983,629	192,088,176	11,728,720	7,682,431	40,271,022	171,852,176
1980/81	191,473,091	23,765,021	154,436,801	850,000	59,951,311	252,967,984	20,010,457	6,777,437	50,269,311	223,390,984
1981/82	207,439,903	27,724,094	165,130,779	2,000,000	68,033,218	319,686,000	22,805,432	16,360,338	48,754,218	270,861,000
1982/83	229,683,531	48,195,980	187,280,186	4,000,000	86,599,325	407,325,000	42,787,702	-21,475,277	106,666,325	378,630,000
1983/84	237,878,006	60,386,504	217,165,492	4,000,000	77,099,019	482,636,000	54,858,086	6,327,582	69,243,019	446,110,000
1984/85	253,902,037	75,234,268	255,595,866	5,000,000	68,540,438	559,459,000	68,832,350	-528,918	67,667,438	517,369,000
1985/86	256,152,965	66,508,793	269,437,949	5,661,000	47,562,810	596,015,000	58,380,362	40,778,569	4,316,810	515,375,000
1986/87	272,748,544	63,812,064	312,751,208	7,354,000	16,455,401	609,248,000	54,634,064	-11,138,000	25,769,401	537,812,000
1987/88	284,819,070	53,410,443	326,440,915	6,111,000	5,677,598	597,621,000	45,041,943	-1,080,500	4,500,598	525,115,000
1988/89	299,770,624	53,178,902	361,107,401	6,600,000	-14,757,876	589,712,000	46,474,402	9,361,500	-24,223,876	507,775,000
1989/90	341,590,624	63,696,173	395,552,551	6,000,000	3,734,246	582,456,000	57,672,173	-17,500,000	21,210,246	517,995,000
1990/91	387,474,767	61,033,277	396,486,593	7,000,000	45,021,452	626,698,000	54,285,277	-19,873,000	65,146,452	582,362,000
1991/92	432,629,822	60,042,701	390,025,287	7,700,000	94,947,236	710,982,000	50,478,701	-12,213,000	105,296,236	676,995,000
1992/93	534,779,861	73,090,178	370,443,351	7,300,000	230,126,689	960,611,000	59,780,678	-76,359,500	300,476,689	996,974,000
1993/94	487,959,873	94,736,213	367,424,870	9,500,000	205,771,216	1,178,643,000	87,174,713	126,684,500	81,025,216	1,090,260,000
1994/95	482,689,118	123,200,957	416,983,612	6,200,000	182,706,464	1,370,401,000	117,271,457	-10,511,500	193,488,464	1,292,800,000
1995/96	728,674,864	123,757,585	808,878,360	8,100,000	35,454,089	1,411,632,000	108,514,085	-25,699,500	54,010,089	1,352,587,000
1997	556,840,000	98,360,000	648,900,000	8,100,000	6,228,000	1,432,076,000	98,360,000	-1,459,000	6,228,000	1,378,988,000
1998	583,389,000	113,311,000	706,300,000	9,300,000	-9,700,000	1,448,859,000	113,311,000	-13,379,000	-9,700,000	1,416,017,000
1999	553,275,000	89,825,000	725,100,000	7,600,000	-82,000,000	1,374,180,000	89,825,000	-52,000	-82,000,000	1,345,182,000
2000	607,909,000	90,191,000	800,000,000	9,800,000	-101,900,000	1,279,205,000	90,191,000	632,000	-101,900,000	1,258,477,000
2001	635,308,000	81,071,000	755,126,000	28,200,000,000	-38,747,000	1,156,827,000	81,071,000	6,126,000	-38,747,000	1,156,827,000
2002	659,815,000	67,183,000	730,488,000	27,300,000,000	-3,500,000	1,160,329,000	67,183,000	29,504,000	-3,500,000	1,160,329,000
2003	666,268,000	42,015,000	661,731,000	7,500,000,000	46,600,000	1,228,741,000	42,015,000	7,500,000,000	46,600,000	1,228,741,000
2004	692,334,577	52,596,423	694,418,000	6,100,000,000	50,500,000	1,257,326,000	52,596,423	6,100,000,000	50,500,000	1,257,326,000

Table A5.1 (cont.). *Expenditures, revenues, interest payments, central bank transfers, seigniorage and debt of the Swedish central government 1670–2011 in thousands of SEK. Abbreviations below.*

Year	$G_t + I_t$	$i_t B_{t-1}$	T_t	CBT_t	DEF_t	B_t	$i_t B_{t-1}^P$	S_t	DEF_t^C	B_t^P
2005	699,210,000	32,561,000	745,825,000	6,700,000,000	-14,054,000	1,308,572,000	32,561,000	6,700,000,000	-14,054,000	1,308,572,000
2006	742,567,724	49,374,070	810,314,986	5,300,000,000	-18,373,192	1,269,957,000	49,374,070	5,300,000,000	-18,373,192	1,269,957,000
2007	713,340,198	47,166,370	863,716,282	4,400,000,000	-103,210,000	1,168,013,206	47,166,370	4,400,000,000	-103,210,000	1,168,013,206
2008	733,000,000	33,100,000	901,300,000	3,600,000,000	-135,200,000	1,119,000,000	33,100,000	3,600,000,000	-135,200,000	1,119,000,000
2009	854,600,000	31,100,000	709,500,000	5,900,000,000	176,100,000	1,189,200,000	31,100,000	5,900,000,000	176,100,000	1,189,200,000
2010	757,321,000	23,252,000	779,520,000	5,800,000,000	1,052,000	1,151,468,000	23,252,000	5,800,000,000	1,052,000	1,151,468,000
2011	770,100,000	34,500,000	872,400,000	6,200,000,000	-67,800,000	1,107,700,000	34,500,000	6,200,000,000	-67,800,000	1,107,700,000

$G_t + I_t$ = government consumption and transfers, and government investment, $i_t B_{t-1}$ = interest payments on government bonds, T_t = government income, CBT_t = central bank transfers to the fiscal branch, DEF_t = total budget deficit of the fiscal branch, B_t = government debt, $i_t B_{t-1}^P$, = interest payments on government debt held by the public, S_t = seigniorage, DEF_t^C, = total deficit of the consolidated government, B_t^P = government debt held by the public.

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