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A 150-year Perspective on Swedish Capital Income Taxation*

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Abstract: This paper describes the evolution of capital income taxation, including corporate, dividend, interest, capital gains and wealth taxation, in Sweden between 1862 and 2010. To illustrate the evolution, we present annual time-series data on the marginal effective tax rates on capital income (METR) for a marginal investment financed with new share issues, retained earnings or debt. Tax tables covering the period are presented. These data are unique in their consistency, thoroughness and time span covered. The METR is low, is stable and does not exceed five percent until World War I, when it starts to drift somewhat upward and vary depending on the source of finance. The outbreak of World War II starts a period when the magnitude and variation of the METR sharply increases. The METR peaks during the 1970s and 1980s and often exceeds 100 percent. The 1990–1991 tax reform and lower inflation reduce the magnitude and variation of the METR. The METR varies between 15 and 40 percent at the end of the examined period.

JEL-codes: H21, H31, N44
Keywords: cost of capital, marginal effective tax rates, marginal tax wedges, tax reforms.

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1. Introduction

Taxation affects many economic decisions, such as labor supply, household savings, corporate investments and entrepreneurial activity. In this paper, we study the incentives to invest provided by capital income taxation.[1] Capital income taxation affects the incentives to invest through its effect on the cost of capital, i.e., the minimum rate of return an investment must yield before taxes to provide the saver with the same net of tax return (s)he would receive from lending at the market interest rate. Investment projects worth pursuing require that the profitability is higher than the capital cost. The total effect of capital income taxation depends on the system of corporate taxation, personal income taxation and wealth taxation and the interactions of these taxes with inflation.

The purpose of this paper is twofold. First, we intend to describe the general evolution of Swedish capital income taxation, including corporate, capital gains, dividends, interest and wealth taxation. The analysis begins in 1862 when Sweden introduced a new tax system. Second, we want to illustrate the evolution of capital income taxation by calculating the long-term evolution of the so-called marginal effective tax rate on capital income (METR) based on the method presented in King and Fullerton (1984). The METR focuses on the flow of private savings into real corporate investment and the flow of profits back to households. It is an established tax measure used to compare tax rates between countries and investment projects. Long-time analyses are rare, however. Compared with other measures, such as the average corporate tax rate, the METR is preferable, as it includes the effect from both the personal and the corporate level and it focuses on the marginal effect, which measures the incentives for additional investments.[2]

Historical studies of the Swedish capital tax system include Genberg (1942), Jakobsson and Normann (1972), Rodriguez (1980, 1981), Gårestad (1987) and Mutén (2003). These studies incorporate extensive information about the Swedish tax system but do not include a formal calculation of the METR. Parts of the results in our paper are derived from these sources. A calculation of the METR in a Swedish context can be found in, among others, Södersten and Lindberg (1983), Södersten (1984, 1993), Norrman and McLure (1997), Lindhe (2002), Öberg (2004) and Birch-Sørensen (2008). Yet, none of these studies have analyzed METR over a longer

[1] Our study is part of a comprehensive effort to characterize the Swedish tax system from 1862 to 2010. Taxation of other incomes, such as labor income, is treated in separate studies, see, e.g., Stenkula et al. (2014).
[2] King and Fullerton (1984, pp. 7–8).

time period.[3] Previous country or cross-country studies analyzing, e.g., the US and the UK, are presented in Devereux et al. (2002), covering mainly the 1980s and 1990s. Hence, this article supplements previous studies by computing METR as far back as 1862 and up to 2010. No previous study has generated this kind of data set for Sweden, and we are not aware of any international studies covering such a long period.

The paper is organized as follows. In the next section, the evolution of different parts of capital taxation is described. In Section 3, the METR is defined, and its evolution is presented. Section 4 concludes. In the appendices, we more formally discuss the METR and the corporate tax system. We also have complete tables covering the statutory corporate taxes and wealth taxes.

2. The development of capital income taxation

This section describes the general evolution of different parts of Swedish capital income taxation, i.e., corporate taxation, dividend taxation, capital gains taxation, interest taxation and wealth taxation. This description is used to calculate the METR in the next section. In Sweden, capital income taxes have been paid to municipalities (local government) as well as to the state (central government) throughout the period under review. As METR also depend on the inflation rate, we also depict the evolution of the inflation rate.

2.1 Corporate taxation

The business form "corporation with limited liability" was legally introduced as a new organizational form according to a law passed in 1848 by Sweden's parliament.[4] In 1862, a new state appropriation tax law (*bevillning*) and, the year after, a new local tax system were implemented. Profits from corporations were taxed at the corporation level in the same way and at the same rates as earned income for individual tax payers. Initially, about one percent of taxable profits were paid to the state and about two percent were paid to municipalities.[5] The tax system can be considered proportional.[6] The state income tax rate was stable, but the local tax rate increased slowly to about five percent during the second half of the 19th century.

[3] Most of these studies analyze the tax system during the 1980s or 1990s. Södersten (1984) analyzes the years 1980, 1970 and 1960. No study goes further back in time.
[4] Schön (2000).
[5] See Du Rietz et al. (2013).
[6] The possibilities to reduce corporate taxes through different forms of allowances were limited. There were no formal rules, and the estimation of taxable profit seems to be rudimentary, though some companies were obliged to

In 1903, a progressive state income tax system was implemented that applied to corporations as well as individuals. The new state tax system was supposed to replace the system of appropriation, which was gradually phased out and finally abolished in 1928. Hence, there were two parallel state tax systems at the beginning of the 20th century. The state corporate marginal tax rate varied between one and five percent.[7] In 1903, dividends to individuals were also taxed. To compensate for this, corporations were allowed to deduct dividends paid, but only up to six percent of the booked value of equity, i.e., there was no double taxation of profits as long as dividends were below six percent. The ordinary local tax system was still proportional and continued to be so for the rest of the studied period. The local tax continued to increase slowly to about 10 percent during World War II.

In 1911, the state income tax was reformed and personal and corporate income taxation were separated. The six percent general deduction was discontinued; hence, full double taxation was introduced. The state corporate tax was still progressive but was now based on profitability (in percentage of equity) rather than on profits (in SEK), as in 1903. The state corporate tax rate varied between 2.5 and 5.2 percent depending on the rate of return on equity. In addition, corporations had to pay temporary defense taxes to the state in 1918 (at most five percent on the margin) and 1919 (at most 10 percent on the margin).[8]

After World War I, a new state income tax was implemented in 1920 that was supposed to replace the ordinary tax system and the temporary defense taxes. This tax system was intended to be more flexible and stable than the earlier systems. Technically, the structure of the tax system—tax income brackets and progressivity—was fixed, but the specific tax rates were flexible and determined on an annual basis. As with the earlier systems, the tax rate was based on the profitability of the company.[9] The state corporate tax rate could vary between about two and

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send account statements with information about profits to the tax authorities. For a further discussion, see, e.g., Malmer (2003) who calls the 1862–1902 period, *den fria uppskattningens tid* (the period of unrestricted assessment).

[7] There was also an average tax cap of four percent.

[8] In addition, a so-called War Business Cycle Tax existed between 1915 and 1920, but this tax is excluded from the calculation of the METR, as it was firm, industry and region specific and not a generally implemented tax. It was used to heavily tax supernormal profits that had arisen in certain industries, such as the steel, shipping and military industry, because of the War. Part of the tax was remitted later (Rodriguez 1980, p. 46).

[9] Between 1919 and 1926, a so-called B-tax also existed. This tax was based on profits retained in the company and not distributed as dividends. This tax can be considered a temporary tax payment in advance, as this tax was refunded once the profit was distributed as dividends. The basic tax rate was two percent, but in the same way as with the ordinary tax system, the actual tax rate was flexible and determined on an annual basis (see SOU 1931:40, p. 77f). The tax revenues from this tax were small compared with the regular corporate tax and accounted for less than five percent of the total corporate tax revenue (see, e.g. *Statistical Yearbook of Sweden* 1928, p. 283). This tax is not

20 percent depending on the year and profitability. Local corporate taxes were now also deductible from income.[10]

In 1920, a progressive local corporate tax was introduced with a marginal tax rate that varied from one and eight percent on profitability.[11] In 1928, this tax was rearranged, and part of the progressive local tax was transformed into a separate, additional state income tax, called the equalization tax (*utjämningsskatt*). The progressive local corporate tax had a top tax rate of 3.75 percent, whereas the equalization tax had a top tax rate of, initially, 1.25 percent and, after 1934, 2.5 percent. As a result, the total corporate tax rate could already be relatively high for very profitable companies during World War I and in the Interwar Years; the tax rate could, e.g., be well above 30 percent at the end of the 1930s (see Figure 1). However, the option to defer tax payments by free inventory write-down, introduced in 1928, reduced the effective corporate tax rate.[12]

In 1939, a new proportional state corporate income tax system was implemented at the same time as the temporary taxes that were introduced in the 1920s were abolished. The tax rate was set to 10 percent. In practice, the tax rate was immediately increased to 13 percent.[13] New temporary defense taxes were also introduced levying marginal tax rates of, initially, three percent and, later, 10 and 12 percent. The ordinary proportional state corporate tax rate was further increased to 20 percent in 1940. As a result, the total statutory corporate tax rate could increase heavily and reached about 40 percent (see Figure 1). In 1939, the possibilities to reduce corporate taxes were also expanded. By introducing free write-downs of machinery and equipment and deductible allocations to pension and Investment Funds (the IF system), the increase in the effective corporate tax rate could be lower than the increase in the statutory tax rate.

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included in our calculations of the METR. At most, including this tax would increase the METR by less than two percentage points, given that profits will never be distributed.

[10] Hence, the total statutory tax rate was equal to $\tau^{total} = \tau^{local} + (1-\tau^{local})* \tau^{state}$, where τ^{local} and τ^{state}, where τ^{local} and τ^{state} refer to the local and state corporate tax and also includes all relevant temporary taxes described in the next section.

[11] This tax initially had an average tax cap of five percent.

[12] It is difficult to give a general estimate of the extent to which different allowances and grants have reduced the statutory corporate tax rate since it is contingent on firm-specific characteristics, such as assets invested in and profitability. The corporate tax, depreciation allowances and other grants will be discussed in more detail in Section 3 and in Appendix B. See SOU 1927:23 or SOU 1937:42 for a further discussion about these issues.

[13] As with the previous tax system, the tax rate was flexible and determined by parliament on an annual basis.

After World War II, the corporate tax was once again reformed, and a proportional state income tax rate corresponding to 40 percent of taxable profit was introduced with a tax reform in 1947. All temporary taxes were abolished. The tax rate increased temporarily to 45 percent in 1955 and 50 percent between 1956 and 1959. There also existed temporary investment taxes on investments in 1951–1953 and in 1955–1957.These tax increases and additional taxes were in place to contract the overheating economy mainly following the Korea crises.[14] However, in 1955, the Investment Funds system became more generous, and between 1961 and 1993, a certain mitigation of the double taxation of dividends was offered at the firm level through the so-called Annell deduction.

Even though the state income tax rate was stable, local taxes increased during the postwar period. Between the end of World War II and 1970, the local tax rate doubled from about 10 to 20 percent. Taking local taxes into account, the total statutory corporate tax rate increased to 45 percent after World War II and, temporarily, to 55 percent at the end of the 1950s. The local tax continued to increase to almost 30 percent in the mid-1980s, and the total corporate tax rate followed this pattern.

The local corporate tax was abolished in 1985. Instead, the state corporate tax rate was increased to 52 percent implying that the total statutory tax rate remained at about the same level. Between 1984 and 1990, an additional, specific "profit sharing tax" (PST) on corporations was levied to finance the so-called wage-earner funds (*löntagarfonder*)..[15] The complicated tax base of the PST was real profits (above an exempted amount of half to one million SEK or six percent

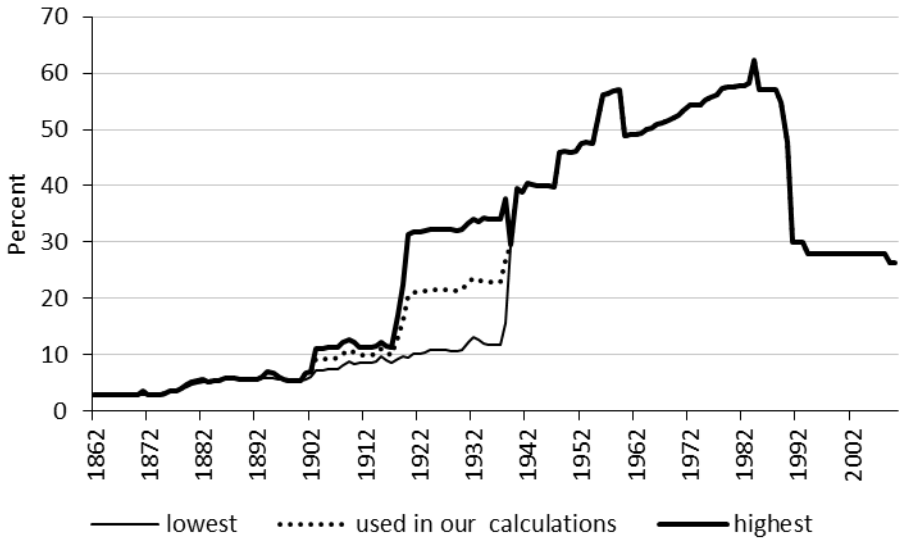
[14] In 1951, the tax rate was ten percent on machinery and equipment. The tax base was deduction made (as defined by the tax law) minus ten percent of the investment (estimated as the true economic depreciation). Hence, if immediate write-offs were used, almost the whole value of investment was taxed with ten percent. Only companies with a turnover above SEK 300,000 (corresponding to about MSEK 4.5 in 2010) had to pay this tax. In 1952, the tax rate was changed to 12 percent of the investment value and the tax was called investment fee. Investments below SEK 20,000 (corresponding to about SEK 300,000 in 2010) and most publicly owned companies were tax exempted. The investment fee was temporary abolished in 1954, but was reintroduced between 1955 and 1957. The fee was deductible. There were also limitations in the possibilities to use immediate write-offs, reducing the possible deduction on machinery and equipment to 20 percent between 1952 and 1954. See, e.g., Arvidsson (1956), Eliasson (1967), *Statistisk Sentralbyrå* (1958) or SOU 1954:19 for a further discussion. We will include the investment taxes/fees in our calculation of METR. Hence, the METR will be somewhat lower for small firms during the 1950s as these taxes did not hit small firms or small investments.

[15] The introduced funds were a considerably watered-down version of the original proposal, which can be regarded as an instrument to fulfill the vision of leading Social Democrats to convert the large corporations to "social enterprises without owners". Henrekson and Jakobsson (2001, pp. 352–354) and Lindbeck (2012).

of the payroll), and thus, it cannot be easily expressed as a single statutory tax rate.[16] It has been estimated that this tax increased the statutory corporate tax rate by five percentage points.[17]

After the far-reaching tax reform in 1990–1991, options to reduce the effective corporate tax rate were weakened.[18] The reform was designed to be revenue neutral and involved substantial cuts in statutory tax rates and a broadening of the tax base, through the removal of many tax deferrals, e.g., the earlier Investment Funds system, the allowance to undervalue inventories and the Profits Equalization Fund. The statutory tax rate was cut to 40 percent in 1990 and to 30 percent in 1991 and was further reduced to 28 percent in 1994 and to 26.3 percent in 2009.

Figure 1. Highest and lowest statutory marginal corporate tax rate and the statutory marginal corporate tax rate used in our calculations of the METR, 1862–2010



Note: The statutory marginal corporate tax rate refers to the total effect of local and state corporate taxes
Source: Genberg (1942), Rodriguez (1981), Gårestad (1987), Nordling (1989, pp. 61–67), Agell et al. (1995), Ministry of Finance (2008), Stenkula et al. (2014) and own calculations.

[16] The base of the PST was obtained by reducing taxable corporate income by corporate tax payments and several adjustments for inflation, see Södersten (1993, pp. 275–276).
[17] Agell et al. (1995) and Henrekson (1996). We will use this estimate in our calculations of the METR.
[18] See Lodin (2011, chapter 7) for a further discussion about the design of the new corporate taxation.

2.2 Interest and dividend taxation

Figure 2 and Figure 3 depict the marginal tax rate on interest and dividend income for a top income earner paying the highest marginal tax rate, an average production worker and a tax payer earning 0.67 or 1.67 times the income of an average production worker.[19] Few income earners paid the top marginal tax when progressivity was introduced.[20]

In the new state appropriation tax law in 1862 and in the new local tax implemented in 1863, interest income was taxed in the same way as other personal income (labor and business income). Initially, one percent of the interest income was paid to the state and about two percent was paid to the municipality. Dividends were tax exempted until the state tax reform implemented in 1903, but shareholders initially only paid state income tax on dividends. Between 1903 and 1919, the state income tax was slightly progressive with state tax rates up to six percent.[21] The local tax was proportional and about five to six percent during this time. From 1920 and onward, local taxes were also levied on dividends. Interest and dividends were now taxed in the same way and jointly with other personal income until the tax reform in 1990–1991.

During the Interwar years, the marginal tax (including both local and state taxes) could vary between 12 and 15 percent for regular income.[22] The income tax reform implemented in 1948 was highly progressive, and inflation implied that the marginal tax rate increased steadily until the new tax reform was implemented in 1971.[23] The progressivity of the tax system was further sharpened with this reform and during the rest of 1970s. For high-income earners, the marginal tax rate could be as high as 85 percent in 1980. A minor tax reform in 1983–1985 decreased the marginal tax rates by about 5 and 15 percentage points.[24]

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[19] These income levels correspond to OECD (2011) and are used in other articles analyzing the evolution of the Swedish tax system, see, e.g., Stenkula et al. (2014). The tax rate for the average production worker will be used to calculate the METR in Section 3

[20] It required, for instance, 400 times the income of the average production worker to pay the top marginal tax rate in 1938, 36 times in 1950, 13 times in 1960, 7 times in 1970 and 2.5 times in 1980. Stenkula et al. (2014) report that all, or close to all, full time wage earners had a marginal tax rate within the interval 0.67 and 1.67 times the income of an average production worker.

[21] However, during World War I, additional temporary taxes were introduced that could be up to 17 percent on the margin in 1919.

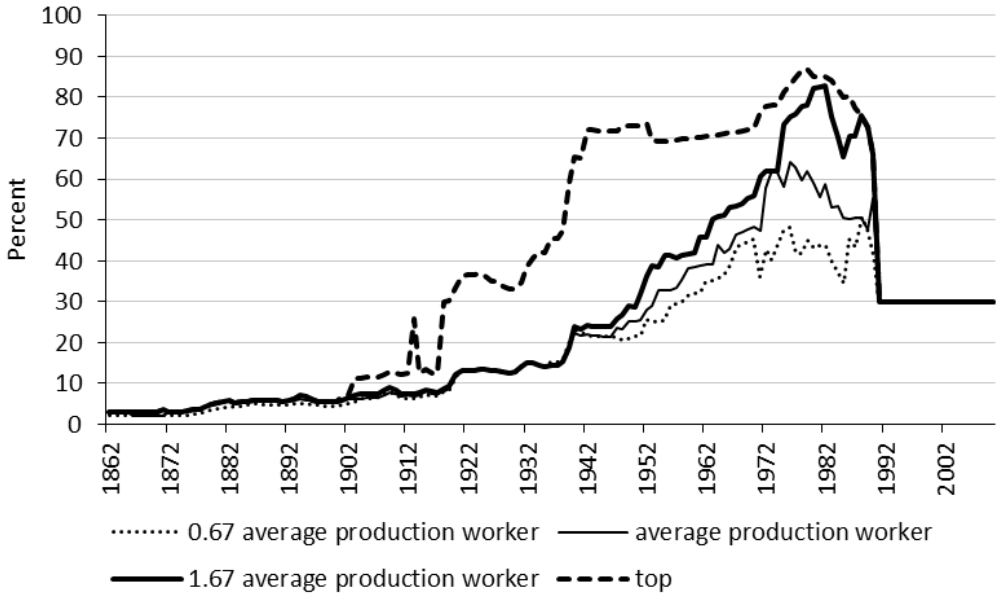
[22] The state tax was progressive, but the first tax bracket was very wide (the upper limit corresponded to more than three times the wage of an average production worker in 1920) and included the majority of all tax payers (Stenkula et al. 2014). By regular income, we refer to an income between 0.67 and 1.67 times the wage of an average production worker.

[23] The marginal income tax rate for an average production worker increased, for instance, from almost 25 percent in 1947 to almost 50 percent in 1970.

[24] An extensive description of the evolution of the marginal income taxation is provided in Stenkula et al. (2014).

In 1991, a separate personal capital income tax was introduced, and the tax on dividends and interest was cut to 30 percent for private households. The taxation of capital including the "double taxation" of dividends was disputed among politicians. When a center-right government won the election in 1991, the dividend tax, but not the tax on interest, was temporary reduced to 25 percent in 1992–1993, and in 1994, the tax on dividends was abolished all together. It was reintroduced the next year at a rate of 30 percent when the Social Democrats regained the power. It has been at that level since then for public companies.[25]

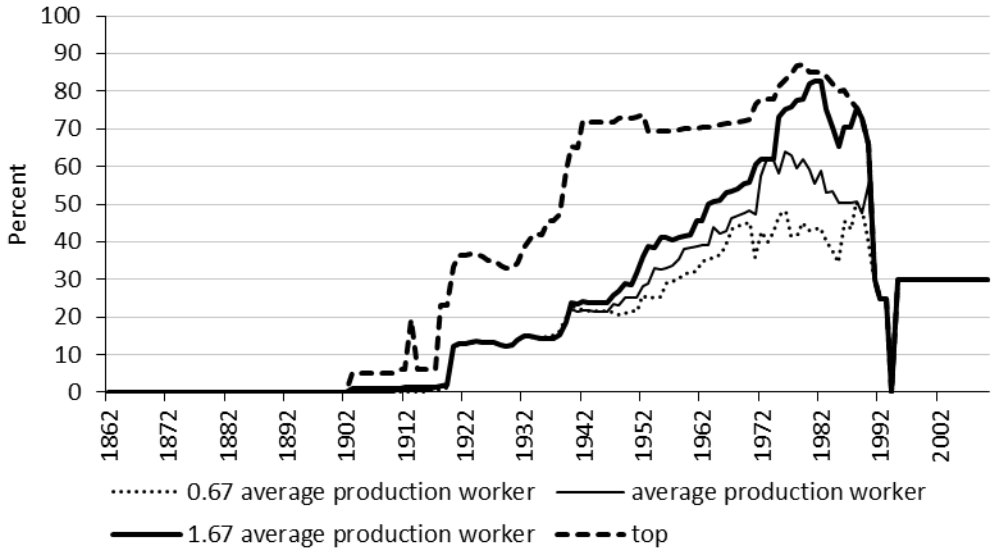
Figure 2. Marginal tax rate on interest income, 1862–2010



Source: Stenkula et al. (2014) and own calculations.

[25] As from 2006, the tax on dividends from nonpublic companies was decreased to 25 percent. For an entrepreneur in a closely held, limited liability company, the marginal tax on dividends depends on several parameters after the tax reform in 1990–1991. We do not focus on the taxation of entrepreneurs and closely held limited liability companies in this paper.

Figure 3. Marginal tax rate on dividends, 1862–2010



Note: Before 1903, dividends were tax exempted. From 1903 until 1919, the tax payer only paid state tax on dividends.
Source: Stenkula et al. (2014) and own calculations.

2.3 Capital gains taxation

Before 1911, only so-called "speculative" capital gains were taxable. However, there was no formal tax rule defining when capital gains were speculative. Taxation was based on discretionary decisions made by the tax authority who decided which capital gains must be taxed according to their praxis. Formal capital gains taxation was introduced in 1911. It was launched after a long boom period on the stock market. The intention was, still, to tax only "speculative" capital gains—but in a more transparent way. Because of the difficulty in defining "speculative" gains, a more precise, though in itself arbitrary, rule was introduced. This resulted in a rule where the tax on capital gains depended on the holding period. The longer the holding period was, the smaller the taxable part of the gain was (and, implicitly, the lower the estimated "speculative" share was). In 1911, capital gains on stocks held more than five years were tax exempted, whereas short-term capital gains were fully taxed. As with dividends, the taxable part of the capital gains was taxed jointly with other personal income until the tax reform in 1990–1991.[26]

[26] Between 1984 and the end of 1991, a turn-over tax on shares also existed that required both buyers and sellers to pay a tax of initially 0.5 percent of the value of the share. We have not included this tax in the METR calculation below.

The rules about the tax-exempt share have changed several times (see Table 1). The sharp time limit of five years was often debated among politicians and experts.[27] The rules were not changed until 1951, however, when the system was made less sharp by phasing out tax liability. Part of the capital gains were taxed for shares owned between two and five years. Gains on shares owned more than five years were still tax exempt. The rules about the taxable part of the capital gains continued to change several times. In 1966, long-term capital gains were taxed for the first time. Ten percent of the proceeds of the sale of shares were included in the income tax base of the seller for shares owned five years or more.[28] In 1976, the rules were changed so that gains on shares held for less than two years were fully taxed and gains on shares held for two years or more were taxed at a rate of 40 percent.

Table 1. Taxable share of capital gains

Time period	Speculative gains			Nonspeculative gains	
1862–1910	100			0	
	Holding period				
	<2 years	2–3 years	3–4 years	4–5 years	≥5 years
1911–1950	100	100	100	100	0
1951–1965	100	75	50	25	0
1966–1975	100	75	50	25	25*
1976–1990	100	40	40	40	40
1991–	100	100	100	100	100

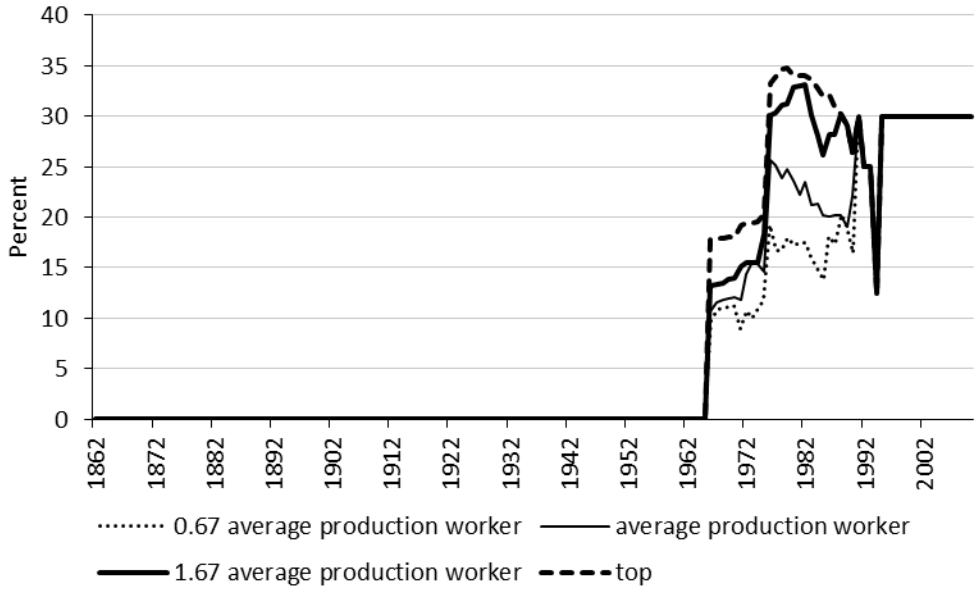
Note: * Formally, 10 percent of the proceeds of the sale of the shares in these long-term gains were included in the personal income tax base of the seller. The rate of 25 percent is an estimate of the taxable share based on assumptions made by Södersten (1984), including a holding period of 10 years and a nominal growth rate of five percent per year (five percent corresponds to the average increase of the stock market index during this time). This tax had to be paid only if the capital gains were five percent or more of the proceeds of the sale of the shares. If the gains were less than five percent, there was no tax (Bratt and Fernström 1975; Rundfelt 1982).
Source: Eberstein (1929, pp. 154–155), Bratt and Fernström (1975), SOU 1977:91 (pp. 242–243), Rundfelt (1982) and Södersten (1984, pp. 106–107).

This implies that the marginal tax rate on capital gains on long-term possessions was zero until 1965 (see Figure 4). From 1966 up until 1975, the marginal tax rate varied between about 10 percent (0.67 average production worker) and 20 percent (top). The tax changes implemented in 1976 increased the top marginal tax rate sharply to more than 30 percent, and it peaked in 1979 at almost 35 percent. Thereafter, it decreased to almost 25 percent before the 1990–1991 tax reform.

[27] See, e.g., discussion in SOU 1965:72.
[28] Between 1966 and 1990, there was also a small tax-free amount on long-term gains.

The tax reform in 1990–1991 made all capital gains fully taxable independent of the holding period. However, capital gains were no longer taxed jointly with labor income but by a separate capital income tax at a flat rate of 30 percent. In 1992–1993, this separate capital income tax rate was temporarily cut to 25 percent, and in 1994, it was temporarily lowered to 12.5 percent.[29]

Figure 4. Marginal tax rate on long-term capital gains, 1862–2010



Note: Before 1966, long-term capital gains (>5 years) were tax exempted. From 1966 until 1990, only a proportion of capital gains was taxable; see Table 1. Between 1910 and 2010, the marginal tax rate on short-term capital gains (<2) mimics the tax rate on interest with the exception of the years 1992–1994 when the tax rate on short-term capital gains was somewhat lower (see the text above). If capital gains are considered "speculative", the capital gains tax also mimics the tax rate on interest between 1862 and 1909, as only speculative capital gains were taxable during this time period.
Source: Stenkula et al. (2014) and own calculations.

2.4 Wealth taxes

The Swedish wealth tax applied only to individuals and was in force from 1911 to 2006. Between 1911 and 1947, the personal income tax was a combined income and wealth tax, where part of tax payer's net wealth was included in the tax base. The share of wealth added to the tax base varied over time. It was one sixtieth between 1911 and 1938 and one percent between 1939 and 1947. Temporary taxes also existed during and between the World Wars, which included part of

[29] Since 2006, capital gains on nonpublic companies have been taxed at 25 percent.

tax payer's net wealth in the tax base. This portion of net wealth was as high as 10 percent in 1913, but the temporary war taxes affected only persons with very high income and high wealth.[30]

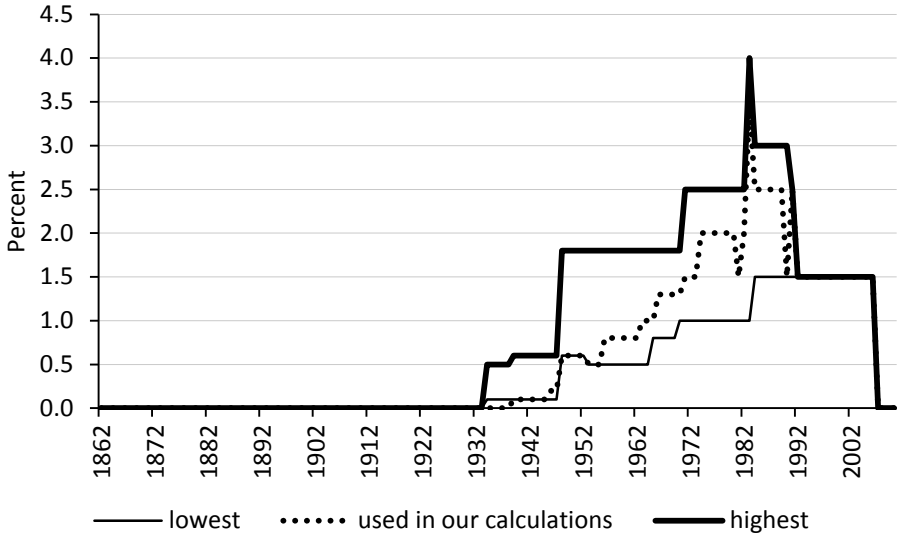
Between 1934 and 2006, a separate wealth tax that levied specific tax rates on assessed net wealth also existed (see Figure 5). The marginal tax rate initially ranged from 0.1 to 0.5 percent, and the tax-exempt allowance was high.[31] The marginal tax rate was slightly increased (to a maximum of 0.6 percent) and the allowance was diminished in 1939. In 1948, the tax rates were substantially increased, ranging from 0.6 to 1.8 percent. The changes in 1939 and 1948 were combined with a reduction, in 1939, and abolishment, in 1948, of the part of wealth that was included in the ordinary income tax on labor.

This system was only slightly revised until 1970. After 1970, the formal tax rates were increased to between 1.0 and 2.5 percent. In 1983, the tax rates were increased again and ranged from 1.0 to 4.0 percent. The 1983 schedule was the most progressive wealth schedule during the whole period. The wealth tax rates were diminished in 1984 and continued to be diminished during the 1990s and 2000s. As from 1991, the tax was discontinued on unlisted firm equity. As from 2007, the wealth tax was eliminated altogether. To diminish the effect of the wealth tax, occasionally, valuation reliefs and average tax caps have been used to limit the total tax on income and wealth (see Du Rietz and Henrekson 2013 for further details).

[30] Söderberg (1996, p. 11), SOU 1969:54 (pp. 77–79). However, among those affected, these temporary taxes could hit very hard. Olsson (2006, p. 342) provides the example of foreign secretary Knut A. Wallenberg, who, in 1917, donated the larger part of his wealth to a tax-exempt foundation and thus avoided the extra income and wealth taxes that were levied in 1918 and 1919 and other taxes later on. See Du Rietz and Henrekson (2013).

[31] The tax-exempt allowance amounted to SEK 50,000, corresponding to slightly more than 20 times the wage of an average production worker in 1934; see Stenkula et al. (2014) for wages on an average production worker.

Figure 5. Highest and lowest marginal wealth tax rate and the marginal wealth tax rate used in our calculations, 1862–2010



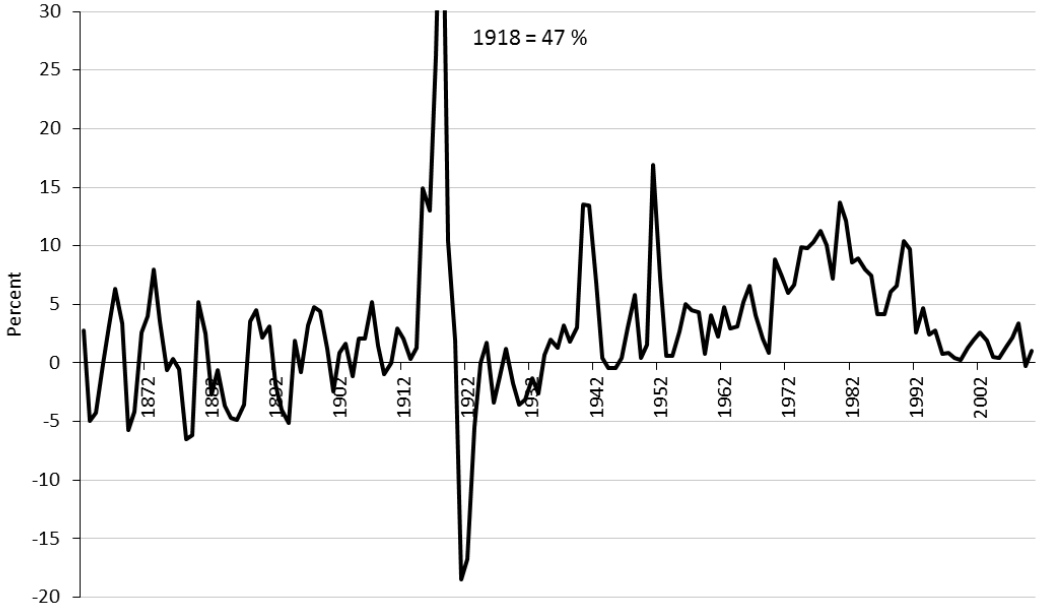
Note: The figure refers to the specific wealth tax in place between 1934 and 2006.
Source: Du Rietz and Henrekson (2013) and own calculations.

2.5 Inflation

During the 19th century, the price level was roughly stable over time and inflation was, on average, zero (see Figure 6). Sweden used a silver standard as basis for its monetary system in the beginning of our studied time period. A gold standard was used from 1873 until the outbreak of World War I. Inflation peaked during World War I (almost 50 percent in 1918), and a period of extensive deflation followed during the early 1920s (almost 20 percent in 1921). Sweden returned to the gold standard in 1924, and deflation resulted from a policy to restore the price level to the prewar level. Deflation also occurred at the end of the 1920s and at the beginning of the 1930s, and Sweden has not experienced deflation since then. Sweden followed the UK—Sweden's most important trading partner at that time—and abandoned the gold standard in 1931 (Jonung 1984). After a short period of a floating exchange rate, Sweden fixed its currency against, first, to the British Pound (1933) and, then, to the US Dollar (1939). On average, the inflation was almost zero between 1862 and 1939, and the price level hardly increased for about 80 years despite the peaks during and after World War I. Inflation peaked again during World War II. Swedish currency was tied to the Bretton Woods system starting in 1951 (Jonung 2000). Ignoring the Korea boom in the 1950s, inflation was moderate during the 1950s and 1960s and was seldom above five percent. The Bretton Wood system was formally abolished in 1973 (Jonung 2000).

During the 1970s and 1980s, the level of inflation was higher than that during the 1950s and 1960s and was occasionally above 10 percent. This period is characterized by an accommodating policy supporting higher inflation and recurrent attempts to conduct a fixed currency policy that failed owing to too high inflation. The world was also hit by the OPEC oil crises. In the 1990s, Sweden introduced an explicit inflation target to keep inflation at about two percent, and the central bank was granted independence. Inflation fell accordingly.

Figure 6. The inflation rate (%)



Source: http://www.scb.se/Statistik/PR/PR0101/2011M12/PR0101_2011M12_DI_06-07_SV.xls.

3. Estimates of the marginal effective tax rates on capital income (METR)

This section will illustrate the evolution of capital income taxation over time by calculating the METR based on the method originally presented in King and Fullerton (1984), which was an extended version of the method presented in Hall and Jorgenson (1967). We follow the general framework developed by King and Fullerton (1984), as it is a generally accepted method to evaluate the capital tax system and facilitates comparisons with previous studies. First, the tax wedge is defined (Section 3.1), and the general framework are described (Section 3.2). Finally, the evolution of the METR is portrayed (Section 3.3).

3.1 Definition

The aim of King and Fullerton (1984) is to investigate the METR on investment projects in the nonfinancial corporate sector using a framework that takes all personal capital income taxes, corporate taxes and wealth taxes that concern the investment decision of the saver into account. The method should also be sufficiently generalizable to allow for the analysis and comparison of investment projects as well as tax systems of countries. King and Fullerton (1984) include Sweden, the US, the UK and West Germany in the analysis. Södersten (1984) provides an analysis of Sweden, and since then, studies on METR in Sweden have been based on his work.

As a starting point for the analysis, a saver can either lend her/his capital to the capital market at the market interest rate or invest in a business project. The project needs to generate a real rate of return after taxes that at least equals the real interest rate after taxes for the saver to invest in it. The minimum rate of return that an investment must yield before taxes to provide the saver with the same net of tax return that (s)he would receive from lending at the market interest rate is called the cost of capital and denoted by p. A necessary, but not sufficient, condition to pursue investments projects is that their profitability is at least as high as the cost of capital. The METR is calculated using an equilibrium model, and the fact that the saver probably requires a risk premium to invest in a business project is not taken into account. Furthermore, the calculated values are the theoretical values in equilibrium. The real economy may very well be in disequilibrium, for instance, because of capital income taxation, the return on savings after tax does not compensate for postponing consumption. Further, risk and uncertainty are not considered in the model, and the results are based on the assumptions that no further tax changes will occur.

Taxes drive a wedge between the pretax rate of return on investments by firms and the net return received by savers. As taxation is normally based on nominal income, both the real rate of return and the inflation compensation are taxed. The inflation rate hence influences the amount of tax paid, and in order to capture this effect, the tax wedge is normally calculated in real terms where the real tax wedge increases with inflation. The tax wedge influences the incentive to supply and demand capital.

The marginal tax wedge, w, can formally be defined as:

$$w = p - s \qquad (1)$$

where p is the pretax real rate of return on a marginal investment and s the posttax real rate of return to the saver.[32] The marginal tax wedge, w, includes the relevant capital taxes that influence the investment choice.

The METR, t, is defined as:

$$t = \frac{w}{p} \qquad (2)$$

where w and p are defined as above. The METR, t, is, hence, the ratio of the marginal tax wedge, w, to the pretax real rate of return, p. The marginal tax wedge and the effective marginal tax rate can be used as two measures of the distortion caused by the tax system.

3.2 General framework

The calculation of the METR depends on the marginal tax rate on interest, dividends, capital gains and wealth for households as well as the marginal statutory corporate tax rate and the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment, the rules for the valuation of inventories and allocations to different untaxed reserves—such as the Investment Funds (*investeringsfonder*) or Profits Equalization Fund (*resultatutjämningsfond*).[33] The METR also depends on the particular assets purchased, the source of finance, the category of ownership and the industry invested in. King and Fullerton (1984) estimate METRs for three kinds of assets (buildings, machinery and inventory), three sources of finance (new share issues, retained earnings and debt), three ownership categories (households, tax-exempt institutions[34] and insurance companies) and three industries (manufacturing, commerce and other industry). Hence, King and Fullerton calculate 81 different tax wedges given different assumptions concerning the investment. The effective tax rates also

[32] King and Fullerton (1984), Södersten (1993), Sørensen (2004).
[33] See Appendix A for a more formal treatment of the King and Fullerton (1984) framework.
[34] Tax-exempt institutions by definition pay no tax on dividends, capital gains or interest receipts. This category includes charities, scientific and cultural foundations, foundations for employee recreation set up by companies, pension funds for supplementary occupational pension schemes and the National Pension Fund.

depend on the level of profitability.[35] King and Fullerton base their calculations on the pretax real rate of return, *p*, assumed to be 10 percent.

To illustrate the evolution of capital taxation, we will, in line with, e.g., Devereux et al. (2002) and OECD (2007), compute the METR for a marginal investment in machinery based on an increase of household savings in the economy The calculations are made for each year for the period from 1862 to 2010. As the general tax system in Sweden is independent of industry and seldom had industry-specific tax subsidies, we disregard industry in the calculations.

To calculate the METR we need, first, to determine the corporate tax rate over time. Before 1903 and after 1938, the corporate tax system was, in principal, proportional. However, between 1903 and 1938, the corporate tax system was progressive. For this period, we will use the average marginal statutory tax rate. Until 1917, the progressivity of the tax system was low, but it was more pronounced between 1918 and 1938. Using the highest or lowest tax rate implied by the tax system during the 1903–1938 period will not affect our general conclusions. The METR will be much lower compared with later levels even if top marginal corporate income tax is used. The evolution of the corporate tax rate used in our calculations is shown in Figure 1. Between 1939 and 1990, the IF system was in place.[36] Agell et al. (1995, p. 116) claim that the IF system can be characterized as a general profit subsidy implying a reduction of the total statutory corporate tax rate with about 15 percentage points. This may reduce the METR with about ten percentage points and will not affect our general conclusions (see discussion and Figure B2 in Appendix B).

Our calculations must also include the marginal personal tax rate on capital income. As the marginal personal tax rate on capital income was progressive between 1903 and 1990, the tax rate to base the analysis on has to be determined. Södersten (1984) bases his analysis on the average marginal capital income tax rate of all households using HINK data. These data provide extensive information on individual households but do not exist before 1975.[37] We will instead draw on Stenkula et al. (2014) and base our analysis on the marginal income tax rate faced by an

[35] Or, more correctly, the METR can be calculated either given a fixed *p* (pretax real rate of return) or given a fixed *r* (real interest rate); see Appendix A for a further description.
[36] Normally, between 15 and 28 percent of the investments in buildings was financed with IF. The share among machinery and equipment was lower (Agell et al. 1995, p. 115).
[37] HINK is an abbreviation for *Hushållens inkomster*, which is a Swedish income distribution survey conducted by Statistics Sweden in 1975, in 1978, and yearly since 1980. After 1970, joint taxation of households was abolished in Sweden. Hence, the household cannot be associated with one unique marginal tax rate; rather, the marginal tax rate differs between the individuals in the household.

average production worker. This marginal tax rate closely corresponds to the average marginal tax rate for all households.[38] The evolution of the tax rate on dividends and interest for our assumed income earner is shown in Figure 2 and Figure 3, respectively.

The statutory capital gains tax must be converted to an effective tax rate on accrued capital gains, as capital gains are only taxed on realization. In line with King and Fullerton (1984, pp. 23–24), we will base our analysis on corporate shares with a mean holding period of 10 years. As the statutory tax rate on capital gains depends on the length of the holding period between 1911 and 1990, we will base our calculation of the accrued effective tax rate on long-term possessions for these years.[39] We consider capital gains to be nonspeculative in our calculations before 1911. Thus, the capital gains tax is zero in our calculations until 1965, since nonspeculative capital gains/capital gains on long-term possessions were tax exempted during this period. The evolution of the tax rate on capital gains for our assumed income earner is shown in Figure 4.

The assumed income and corresponding marginal tax rate on capital income is of less importance before World War II because of the low tax rates, and of no importance after the 1990–1991 tax reform since capital income is taxed separately from labor income at a flat tax rate. For the period starting with World War II and ending with the 1990–1991 tax reform, the assumed income and corresponding marginal tax rate on capital income may influence the general evolution of the METR (see next section). For capital gains, the assumed income will not affect the results at all until 1965 as we have assumed long-term possession (and nonspeculative gains before 1911), and capital gains on long-term possessions were tax exempted during this time period. From 1967 until 1990, it had an effect. We therefore provide an extended discussion of the impact of household incomes and the associated marginal personal tax rate on capital income on the METR in Section 3.3.

The calculation of the METR also includes the wealth tax. Södersten (1984) bases his analysis on the average marginal wealth tax rate of all households using the detailed description of the distribution of household wealth in Sweden in 1975 presented in Spånt (1979). We draw on Du Rietz and Henrekson (2013) and base our analysis on wealth equal to 10 times the wage of

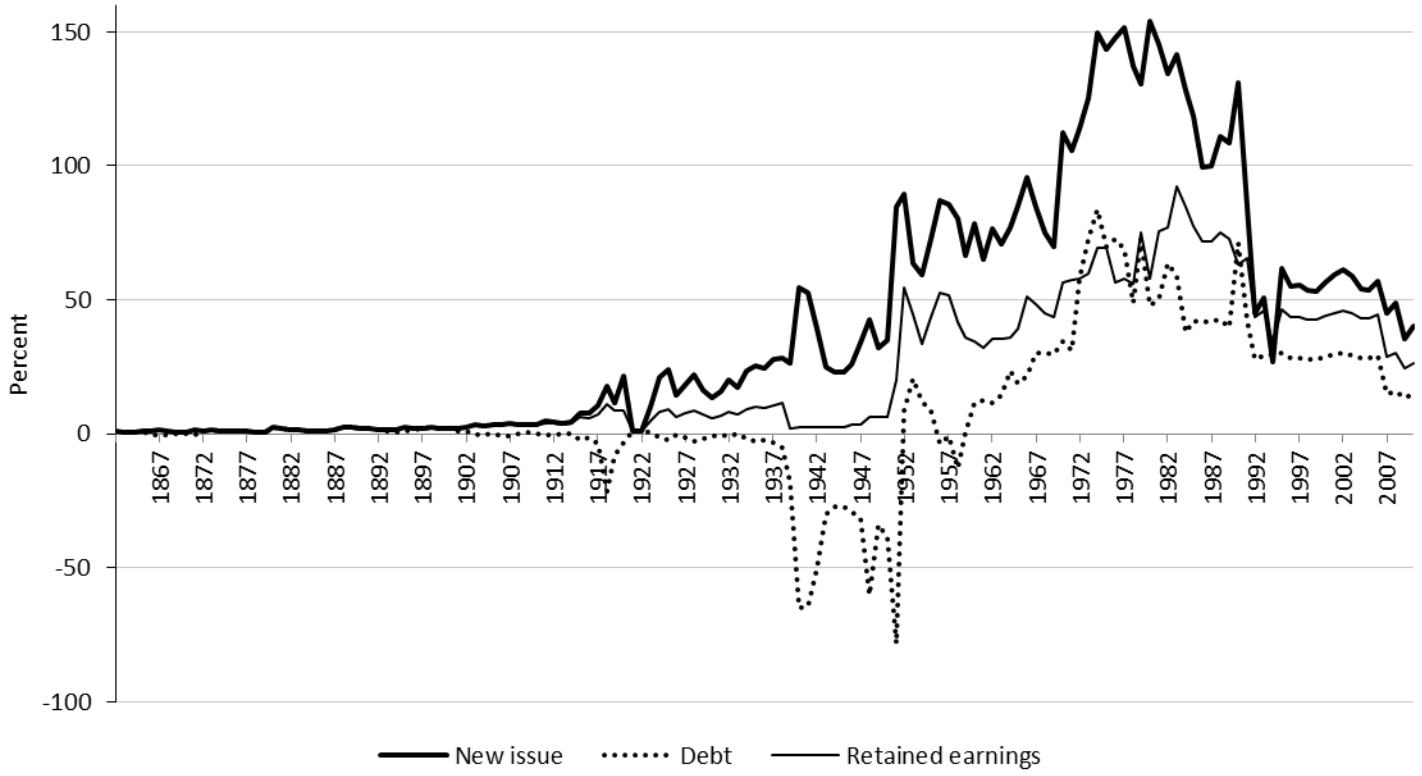
[38] E.g., Södersten (1984) reports a marginal tax rate of 64 percent for equity financing and 49 percent for debt financing in 1980; we use 59 percent.
[39] This is line with Södersten (1984) and Öberg (2004).

an average production worker.[40] Using the highest wealth tax rate or no tax at all will increase or decrease the METR by at most about 15 (1990) or 35 (1983) percentage points. The evolution of the wealth tax rate used in our calculations is shown in Figure 5.

Finally, the calculation must also incorporate the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment (*A*). These adjustments are calculated separately in Appendix B and are included in the estimations. The King and Fullerton methodology assumes that a company can fully make use of the benefits that the tax legislation offers to reduce the METR.[41] To analyze the impact of these reductions, we make a robustness test and calculate the METR given that no possibilities to reduce the tax were used and that the company pays the statutory corporate tax.[42] This will increase the METR with at most about 100 percentage points between 1939 and 1991 depending on source on finance, hence, underpinning our general conclusions about the distortive character of the tax system this period.

[40] This level roughly corresponds to the average taxable wealth among households with wealth in 1968.
[41] Öberg (2004), Södersten (1984, pp. 147–148). Forsling (1996) finds that the average rate of utilization of tax allowances was 72 percent during mainly the 1980s. Why firms do not fully use their tax allowance possibilities and how this would affect the corporate tax paid on a marginal investment is discussed in e.g. Bergström and Södersten (1984) and Kanniainen and Södersten (1994).
[42] I.e., given that $A = 0$; see Appendix A and B for further details.

Figure 7. METR for an investment financed with new share issues, retained earnings and debt, average production worker, 1862–2010 (%)



Note: Based on assumptions given in the text.
Source: Own calculations.

3.3 Results

Figure 7 shows the evolution of the METR between 1862 and 2010 in the case of retained earnings, new share issues and debt based on the assumptions given in Section 3.2. In the case of retained earnings, the METR was about one percent at the beginning of the period and hovered about three percent until World War I. It peaked at about 11 percent during the war. During the Interwar years, the METR hovered at about 10 percent. Between 1939 and 1951, immediate write-offs (free depreciation) were used, and the METR was reduced to about zero despite strongly increasing statutory corporate tax rates. During the 1950s, the METR increased sharply and could occasionally be above 50 percent due to the abolishment of immediate write-offs and due to the temporary investment taxes. The METR was somewhat lower during the early 1960s when the temporary increase of the corporate tax was ended and the investment tax had been abolished. Between 1960 and the 1980s, the METR increased owing to increased corporate, personal and wealth taxes. Long-term capital gains were taxable since 1966. At the beginning of the 1980s, the METR was almost 100 percent. The METR started to decrease during the second half of the 1980s. The 1990–1991 tax reform lowered the METR substantially owing to a combination of decreased tax rates on capital income, wealth and profits and lower inflation levels resulting from the policy of price stability advanced since the 1990s. As from 2007, the wealth tax was abolished, which further accentuated the fall. At the end of the examined period, the METR was about 30 percent.

In the case of new share issues, the METR did not exceed five percent before World War I. During the War, the METR peaked at almost 20 percent and hovered at about this level during the Interwar years. Until the early 1950s, the tax rate increased, with temporary spikes in 1940–1941 and in 1948 because of extra defense taxes during World War II and peaking inflation. The effect from free depreciation was counteracted by increased income taxes and higher inflation rates. The METR increased sharply to almost 90 percent in the early 1950s because of the abolishment of free depreciation, temporary investment taxes and high inflation. During the 1950s and 1960s, the METR then fluctuated between 65 and almost 100 percent. The progressivity was sharpened with the 1970 tax reform. In combination with high inflation, the METR increased above 100 percent in 1970 and did not decrease below this level until the tax reform in 1990–1991. The highest level was reached in 1980, at about 150 percent. At the end of the period, the METR was about 40 percent.

In the case of debt, the METR was close to zero until 1939 when immediate write-offs were introduced. Between 1939 and 1951, the METR was markedly negative. The largest negative numbers appeared when inflation peaked. Debt-financed investment under a system of immediate write-offs implied a subsidy.[43] When immediate write-offs were abolished, the METR increased and became positive, and it continued to increase during the 1960s and 1970s to a peak of about 80 percent. [44] It started to decrease during the 1980s and particularly after the tax reform in 1990–1991. At the end of the period, the METR was about 15 percent.

All in all one can say that the changing tax rules have had a large effect on the evolution of the METR. Until World War II, the effect on METR was not that markedly. The rules about immediate write-offs have had a large impact on the evolution between 1939 and 1951. The effect from the tax reform in 1947, which made "temporary" tax increases due to World War II permanent, did not initially have any large effect on the METR, but the increasing marginal tax rate on income during the post-war period due to bracket creep and temporary investment taxes pushed-up METR to higher levels. However increased reduction possibilities mitigated this effect. With the tax reform in 1970, the evolution continued though investment grants occasionally alleviated the effect on METR. With the tax reform in 1983–1985, and in particular 1990–1991, the level of METR as well as the difference between sources of finance has diminished substantially. It is clear from the calculations that new share issues is the most heavily taxed form of finance, despite the Annell deduction.

Our results show close similarities with Södersten's calculations for occasional years from 1960 and on, as reported in Henrekson (1996) and Henrekson and Johansson (2009). But differences can be seen if one compares with Södersten and Lindhe's (1983) results, which is explained by the fact that their results include three different ownership categories (besides households, also insurance companies and tax-exempted institutions).

The results above are based on the marginal tax rate on personal income (dividends, interest and capital gains) for an average production worker. As mentioned in Section 3.2, this assumed tax rate may occasionally substantially influence the METR. The results can be

[43] This is a well-known possible result within literature with these assumptions, see, e.g., Södersten and Lindberg (1983, p. 19), and will always occur if the statutory corporate tax rate is higher than the ordinary income tax, which was the case in our example.

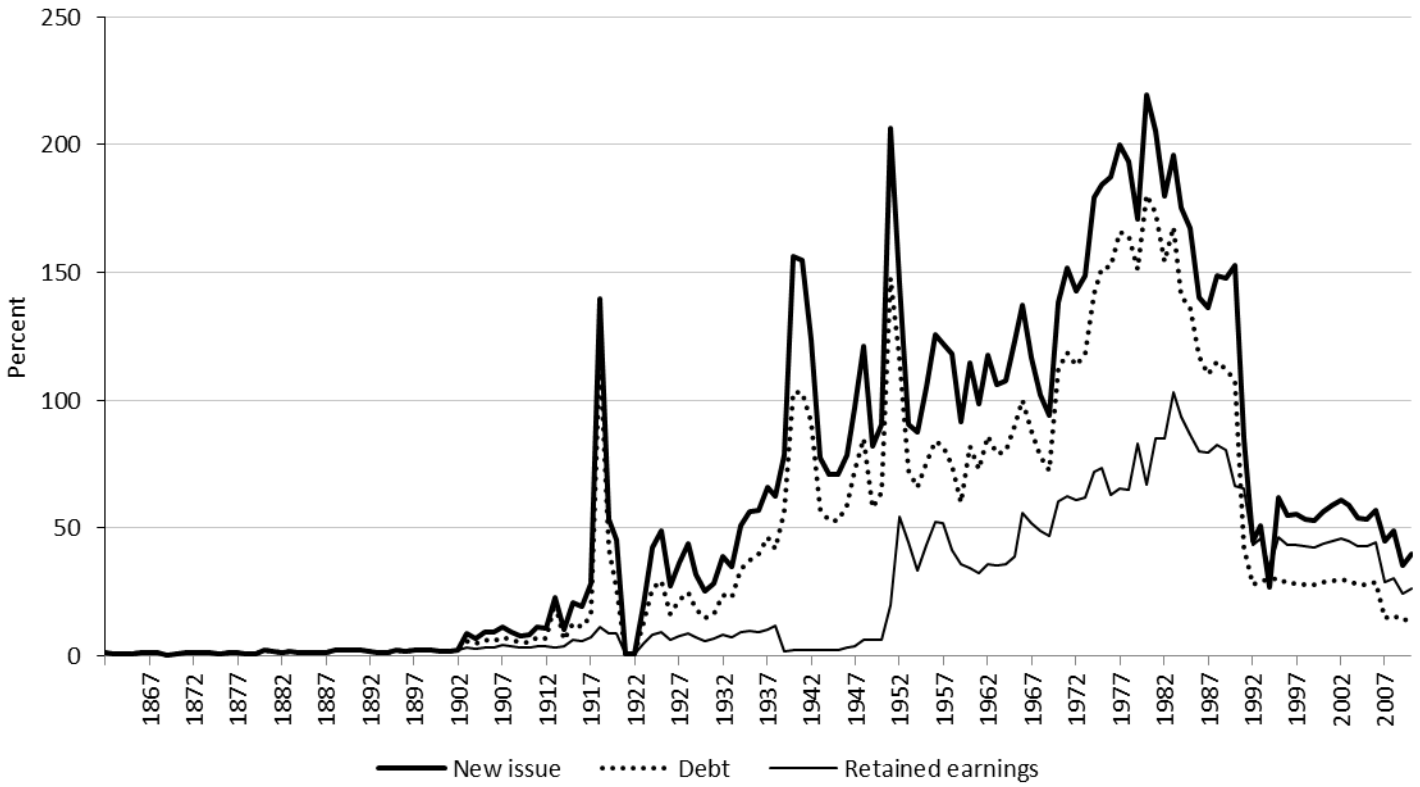
[44] The METR in the case of debt is actually higher than in the case of retained earnings some years around 1980. Debt finance is usually more beneficial than retained earnings as interest is deductible for the firm. But this effect is countered by the fact that capital gains tax of the saver may be lower than interest tax of the saver. Depending on the size of these effects, debt or retained earnings may be the most beneficial source of finance.

recalculated with the tax payer instead facing the top marginal tax rate or the marginal tax rate for a tax payer earning 0.67 times the income of an average production worker (see Figures 8 and 9).

If the top marginal tax rate is used, the METR would be about the same until World War I and would not be affected after the 1990–1991 tax reform. In the case of new share issues, the METR would be much higher. It would exceed 100 percent almost every year from 1951 until the tax reform in 1990–1991. It would also peak above 100 percent in 1918, 1940–1941 and 1951 when inflation was high. During the 1970s and 1980s, it would exceed 150 percent every year and peak above 200 percent. The METR also would increase profoundly in the case of debt. It would become positive in every year, even when immediate write-offs were allowed. The METR would now also exceed 100 percent from 1970 until the tax reform in 1990–1991. The METR would not be affected much in the case of retained earnings, except during the 1970s and 1980s when the METR would peak at 100 percent.

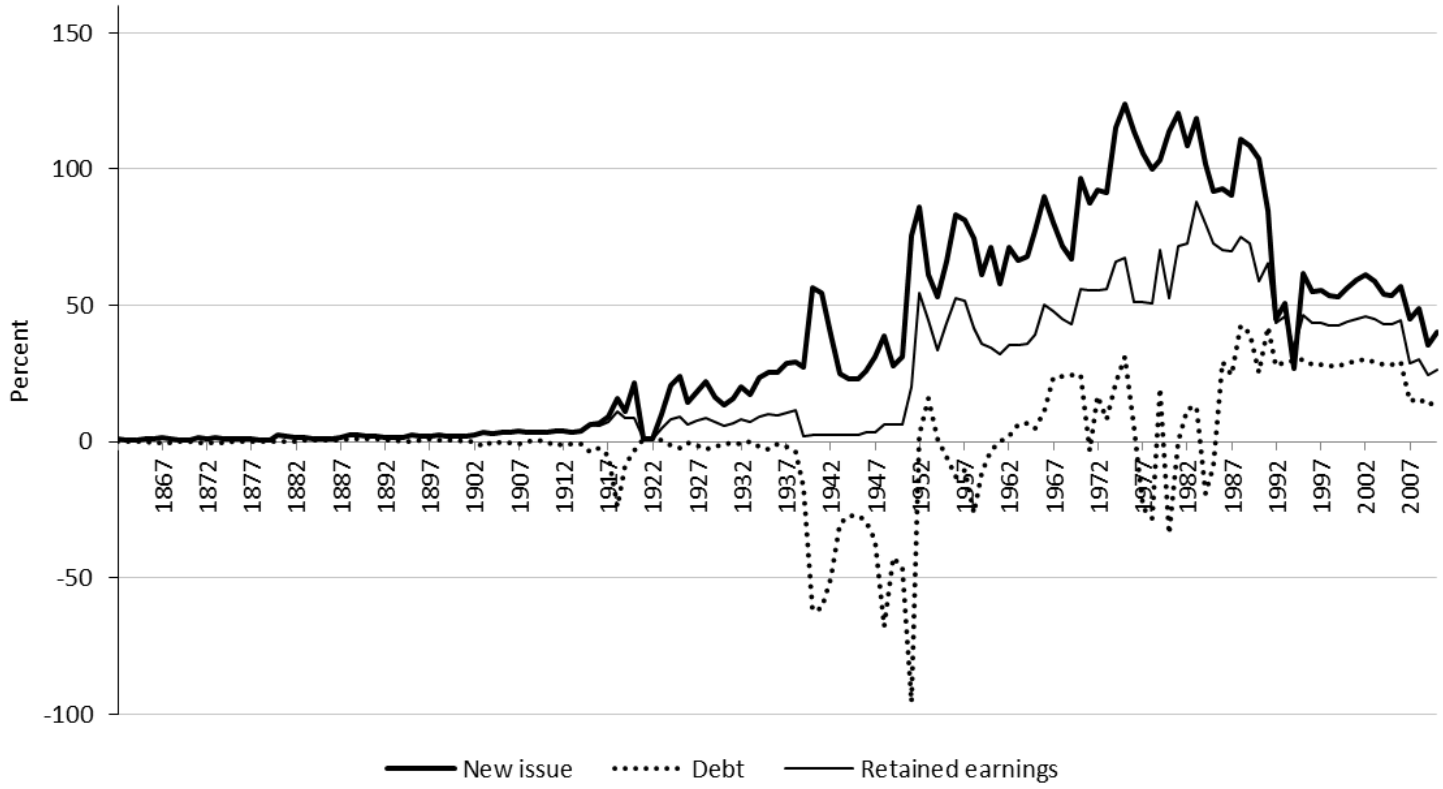
If the marginal tax rate for a tax payer earning 0.67 times the income of an average production worker is used, the effect on the METR would be negligible until World War II. The METR would not be affected after the 1990–1991 tax reform. In the case of new share issues, the METR would be lower, but not much lower until the 1970s. It would be significantly lower during the 1970s and 1980s, though often exceeding 100 percent. In the case of debt, the METR would be even more negative between 1939 and 1951 when immediate write-offs were used. It would be slightly negative some years around 1980, even when immediate write-offs were not allowed (mainly during the years with investment grants). The largest discrepancy is once again observed for the 1970s and 1980s. In the case of retained earnings, the METR would be largely unaffected.

Figure 8. METR for an investment financed with new share issues, retained earnings and debt, top income tax, 1862–2010 (%)



Note: Based on assumptions given in the text.
Source: Own calculations.

Figure 9. METR for an investment financed with new share issues, retained earnings and debt, 0.67 average production worker, 1862–2010 (%)



Note: Based on assumptions given in the text.
Source: Own calculations.

4. Conclusions

This study describes the evolution of capital income taxation, including corporate, dividend, interest, capital gains and wealth taxation, in Sweden. We illustrate the evolution by calculating the so-called METR (marginal effective tax rate on capital income) for an investment financed with new share issues, retained earnings or debt. The METR is defined as the ratio of the marginal tax wedge to the pretax real rate of return on a marginal investment. The marginal tax wedge is defined as the difference between the pretax real rate of return on a marginal investment and the posttax real rate of return to the saver.

Capital income taxes on companies and individuals were low or non-existing (dividends) until 1903, when a progressive income tax system was implemented (capital gains were tax exempted until 1966). Most savers did not face markedly increased marginal tax rates before World War II. Increased deduction possibilities could offset increased corporate tax rates. The corporate tax rate stayed high until 1991, when it was halved at the same time as the tax base was broadened and deduction possibilities reduced. The personal tax rate on capital income was substantially decreased the same year when a separate capital income tax was introduced. Wealth tax has been in place since 1911, but initially at low rates. It was most severe during the 1970s and 1980s. The wealth tax on unlisted firms was abolished in 1991 and completely abolished in 2007.

The METR was low until World War I, below five percent, and the impact of the source of finance on the METR was negligible. At the outbreak of World War I, the METR began to fluctuate somewhat upward and differed depending on the source of finance. With World War II the evolution clearly diverged between sources of funding. The METR started to increase sharply during the mid-1950s for investment financed with debt and retained earnings. Many taxes had already been increased during World War II but this did not affect the METR that much due to increased possibilities to reduce corporate taxes. In the case of new share issues, the METR increased during World War II as the effect from free depreciation was counteracted by increased income taxes and higher inflation rates. The METR continued to increase and peaked during the 1970s and 1980s. After the tax reform in 1990–1991, the METR decreased sharply because of a combination of decreased tax rates (including the abolishment of the wealth tax) and lower inflation levels. At the end of the examined period, the METR was between about 30 and 40

percent for investments financed with retained earnings and new share issue, and about 15 percent for debt-financed investments.

Appendix A

This appendix gives a brief and more formal description of how the METR is calculated.[45] In King and Fullerton (1984), the rate of return net of depreciation of a project is assumed to be

$$p = MRR - \delta \qquad \text{A1}$$

where p is the pretax real rate of return on the project (the cost of capital), MRR is the gross marginal rate of return and δ is the depreciation rate. The assumed depreciation rate will be set to seven percent, which conforms to Södersten's estimation. [46] The discounted present value of profits for the project, V, net of taxes, is:

$$V = \frac{(1-\tau)MRR}{(\rho+\delta-\pi)} \qquad \text{A2}$$

where τ is the corporate tax rate, ρ is the firm's discount rate and π is the inflation rate. The investment project is assumed to have an infinite lifetime with an initial cost of one unit (Crown, Dollar, Mark or Pound).[47]

The cost of the investment project is unity minus the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment, which we denote by A.[48] The cost of the project (C) is therefore:

$$C = 1 - A \qquad \text{A3}$$

The firm carries out the project under the condition that the discounted present value of profits of the project net of taxes, V, at least equals the cost of the project, C. Hence, using A1, we derive

$$p = \frac{(1-A)}{(1-\tau)}(\rho + \delta - \pi) - \delta \qquad \text{A4}$$

Given A4, ρ has to be solved. The values of p, τ, δ and π are given, while A, has to be calculated (see next section). A also depends on ρ in a nonlinear fashion, requiring a numerical solution.

[45] See King and Fullerton (1984, chapter 2) for a more thorough description.
[46] The choice of δ is of less importance for our results. Using, e.g., $\delta = 12$ as in Öberg (2004), the METR would increase with at most less than 15 percent.
[47] King and Fullerton (1984) include Sweden, the US, the UK and West Germany.
[48] A is discussed in Appendix B.

Ignoring wealth tax on corporation (not used in Sweden) and investments in inventory (we focus on investments in machinery and equipment), the final step is to derive the relationship between the market interest rate, *i*, and the discount rate, ρ. The discount rate will differ from market interest rate depending on the source of finance as follows:

$$a) \quad \rho = i(1-\tau) \qquad \text{for the use of debt;} \qquad \text{A5a}$$

$$b) \quad \rho = i\frac{(1-m)}{(1-z)} \qquad \text{for the use of retained earnings,} \qquad \text{A5b}$$

where *m* is the personal tax rate and *z* is the effective capital gains tax and is defined as

$$z = \frac{\lambda z_s}{\lambda+\rho_p},$$

where z_s is the statutory capital gains tax, λ is the proportion of accrued gains realized by investors in each period and ρ_p is the marginal investors nominal discount rate (in general, this is equal to $s + \pi$, where *s* is the posttax real rate of return to the saver and defined below).

$$c) \quad \rho = i\frac{(1-m)}{(1-m_d)} \qquad \text{for the use of new share issues,} \qquad \text{A5c}$$

where m_d is the tax rate on dividends.

To compute the effective tax rate given a fixed *p* value, we solve first for ρ (using equation A4), and given the source of finance, we then solve for *i* (using equation A5a-c). In the case of retained earnings, λ is assumed to be 0.1, implying that corporate shares have a mean holding period of 10 years, which is in line with Södersten (1984). To compute the posttax real rate of return to the saver, *s*, we use the following equation:

$$s = (1-m)(r+\pi) - \pi - w_p \qquad \text{A6}$$

where $i = r + \pi$ and w_p is the rate of personal wealth tax. Given the value of *p* and the computed value of *s*, the tax wedge, *w*, is $p - s$, and the effective tax rate, *t*, is w / p.

The effective tax rate can also be calculated given a fixed *r* (assumed to be five percent in King and Fullerton 1984). Given *r*, a discount rate, ρ, can be calculated depending on the source of finance (using equation A5a-c), and then, *p* can be calculated (using equation A4). *s* can be calculated separately using equation A6 and the given *r* value. The tax wedge and effective tax

rate can then be calculated as in the case with a fixed *p*. Usually, the tax wedge is computed assuming a fixed *p*, and we conform to this practice.

As mentioned in the main text, the effective marginal tax on capital income can be calculated for three ownership categories (households, tax-exempt institutions and insurance companies), who can invest in three kinds of assets (machinery, buildings and inventory), using three sources of finance (debt, retained earnings and new share issues). Average marginal effective tax rates can then be calculated using the true division between type of owner, type of investment and source of finance.

Appendix B. Allowances and grants

The effective tax rate on corporate profits depends on the present discounted value of tax savings from depreciation allowances and other grants, the rules for the valuation of inventories and allocations to different untaxed reserves—such as the Investment Funds (*investeringsfonder)* or Profits Equalization Fund (*resultatutjämningsfond*).[49] As a result, the corporate tax rate could be—particularly between the Interwar years and 1991—substantially lower than the statutory tax rate.[50] This appendix discusses how we, in line with King and Fullerton (1984) and Södersten (1984), have included the opportunities to reduce the tax rate by estimating the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment (i.e., what is called *A* in the King and Fullerton (1984) terminology).[51]

The general structure

Until 1928, the options to defer corporate taxes were limited, but the acquisition cost of machinery and equipment could be depreciated for tax purposes. Formal depreciation rules were introduced for the first time in 1910.[52] Between the Interwar years and 1991, Sweden had a high statutory corporate tax rate, but the corporate tax base was narrow, as corporations had many opportunities to reduce their taxable income through accelerated depreciation allowances and allocations to untaxed reserves.

In 1928, the rules for the valuation of stocks of inventories were relaxed, which decreased the effective tax rate. In 1939, immediate write-offs (free depreciation) of machinery and equipment as well as the Investment Funds system (IF system) were introduced. The IF system

[49] Occasionally, there have also been temporary taxes or subsidies on specific types of investment in order to stimulate or discourage investments. We have ignored these taxes and subsidies in our calculations.

[50] One could also argue that the effective tax rate increases and approaches the statutory tax rate as the profit rate increases, see, e.g., Södersten (2004, p. 195) or Devereux and Griffith (1998). In addition, the possibilities to use these allowances and grants depend on the industry and firm size, which introduced large distortions in the economy and affected the evolution of the industry and size distribution of firms (Davis and Henrekson 1999; Henrekson and Johansson 1999; Heshmati et al. 2010).

[51] As described at the end of Section 3.2, these kinds of calculations assume that corporations take full advantage of depreciation allowances and other allowances to defer corporate taxation. Empirical studies indicate that most firms are not able to take full advantage of these allowances, however (Södersten 1984, p. 147–148; Forsling 1996; Heshmati et al. 2010).

[52] Norrman and Virin (2007). However, the tax law was rather rudimentary and unclear at this time. Specific rules were lacking, and there were often disputes between the tax authority and companies. The depreciation accepted by the tax authority was often considered insufficient from companies' point of view (Artsberg 1996). Before 1910, no formal allowances were allowed but costs for investment regarded as replacements for deteriorated assets were deductible (see SOU 1954:19).

was not favorable and was of little importance at this time, however. In 1955, the rules of the IF system were made more generous, particularly for investments in buildings (see further discussion below).

In 1955, immediate write-offs of machinery and equipment were also permanently abolished and replaced by less favorable rules.[53] The rules (which are still used today) allow depreciation for tax purposes at a rate of 30 percent per annum on a declining balance basis (the 30 percent rule), implying that firms are free to use accelerated depreciation (instead of immediate write-offs). Firms also have an option to choose—for all machinery and equipment—the booking value that results from five years of straight-line depreciation (the 20 percent rule).

Between 1955 and 1984, inventory write-downs were limited to a maximum of 60 percent of the acquisition cost. Between 1961 and 1993, the so-called Annell deduction was also in place, which reduced the effective corporate taxation on new share issues. Under these rules, firms were allowed to deduct dividends on newly issued shares against profits for, initially, six years, i.e., corporations were entitled to a small mitigation of the double taxation of dividends. The maximum allowed rate of deduction was, initially, four percent per year but was increased to five percent in 1967 and to 10 percent in 1980, and at the same time, the time period was increased to first 10 and then 20 years.[54] The IF system was used extensively during the 1970s and the first half of the 1980s, but as noted earlier, it was favorable mainly for investments in buildings.

Between 1976 and 1978, firms were offered an extra investment allowance of 25 percent for machinery and equipment for state income tax purposes.[55] This allowance did not diminish the base of depreciation allowances and greatly reduced the effective tax rate until 1979, when the rules were abolished. The allowance was reintroduced in 1980, at a rate of 20 percent for both local and state income assessments. It was discontinued again in 1981.

In 1980, the possibility to reduce taxation through allocations to a Profits Equalization Fund (*resultatutjämningsfond* or RUF; maximum 20 percent of wage costs) was introduced.[56]

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[53] As described earlier, the rules were temporary abolished to contract the investment level already in 1952.
[54] SOU 1993:29. The average dividend yield for firms issuing new shares was less than 10 percent (Södersten 1984, p. 324, reports that the average yield was six percent on new shares at the end of the 1970s).
[55] Södersten (1984, p. 100–103).
[56] The allocations to RUF usually entailed a one-year tax credit. The deduction was included in the taxable base for the following year. In 1980, the introduction of the RUF option could have diminished corporate taxes by several percentage points, but it had no impact on the effective marginal corporate tax rate thereafter unless the company increased the company's wage bill.

As described in the text, the possibilities to defer corporate taxes were further diminished by the tax reform in 1990–1991 when the statutory tax rate was reduced to 30 percent and the profit-sharing tax was discontinued. To maintain unchanged revenue from corporate tax, its base was substantially broadened. Chiefly, the IF system was discontinued, and inventory write-downs were no longer available. The allocations to RUF were also abolished. The reform also included a new option enabling companies to reduce taxation through tax-free allocations to a Tax Equalization Fund (*skatteutjämningsreserv* or SURV, in force between 1991 and 1994) and Periodization Funds (*periodiseringsfonder*, in force 1995 onward). The Annell deduction was abolished in 1994 when the tax on dividends was abolished. It was not reintroduced when the tax exemption of dividends was abolished, however. Table B1 summarize the most important tax allowances during the examined period.

Table B1. Tax allowances in different time periods

Year	Tax allowances
1928	Free inventory write-down
1939	Immediate write-off (free depreciation) of machinery and equipment IF system introduced
1955	Max inventory write-down diminished to 60 %. Max 30 % depreciation of machinery and equipment Allocations of IF up to 40 % of profits, 50 % interest-free deposition
1961	Annell deduction, max 4 % of dividends on new shares for six years
1967	Annell deduction extended, maximum 5 % for 10 years
1976	25 % extra investment allowance for machinery and equipment from national tax income
1979	Extra investment allowance discontinued Annell deduction extended, maximum 10 % for 20 years
1980	50 % max allocations to IF 20 % extra investment allowance for machinery and equipment from both national and local tax income Allocations to a Profits Equalization Fund (RUF), max 20 % of wage costs
1981	Extra investment allowance discontinued
1984	Max inventory write-down diminished to 50 %
1985	Interest-free Central Bank deposition raised to 75 % of IF allocations
1987	Interest-free Central Bank deposition raised to 100 % of IF allocations
1991	Tax-free allocation to a Tax Equalization Fund (SURV) Inventory write-down (up to 50 percent), IF system and Profits Equalization Fund (RUF) abolished
1994	Annell deduction abolished, SURV replaced by Periodization Funds

Source: SOU 1989:34 (pp. 15–21), Södersten (1993, pp. 285–294). There were also temporary investment taxes on machinery, equipment and inventory that can be seen as negative subsidies of investments the years 1951–1953 and 1955–1957. Immediate write-offs were also abolished and reduced to max 20 percent on machinery and equipment between 1952 and 1954, see footnote 14 for further discussion.

Estimation of the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment (A)

Our calculations are focused on a marginal investment in *machinery and equipment*. In line with King and Fullerton (1984) and as described in Appendix A, we consider an investment project with an initial cost of one unit (Crown, Dollar, Mark or Pound). The cost of the investment project—the initial payment for the asset—is unity minus the present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment, which we denote by *A*. Therefore, as stated earlier, the cost of the project (*C*) is:

$$C = 1 - A$$

To derive an expression for *A* in the case of retained earnings and debt during the 1862–2010 period, we will follow King and Fullerton (1984, p. 19) and consider allowances for investments in machinery and equipment of three types: (1) standard depreciation allowances (accelerated write-offs); (2) immediate expensing or free depreciation (immediate write-offs); and (3) cash grants (equivalent to tax credits).[57] Denote f_i as the proportion of the acquisition cost that can be used for the different allowance possibilities ($i=1, 2, 3$). The tax savings from immediate write-offs will then be $f_2 \tau$. If we, further, denote A_d as the tax savings from accelerated depreciation allowances on a unit of investment and g as the rate of grant, then:

$$A = f_1 A_d + f_2 \tau + f_3 g$$

As immediate write-offs reduce the basis for accelerated depreciation allowances, the sum of $f_1 + f_2$ is restricted to one. The sum of f_1, f_2 and f_3 does not need to be restricted to unity because depreciation does not reduce the basis for investment grants. In the simplest form, A_d can be calculated as:

$$A_d = \frac{\tau a}{a + \rho},$$

where τ is the statutory corporate tax rate, a is an exponential depreciation rate (corresponding to a declining-balance depreciation of a) and ρ is the discount rate.

In the case of new share issues, *A* is calculated as (King and Fullerton 1984, p. 322):

$$A = f_1 A_d + f_2 \tau + f_3 g + A_A$$

[57] 1951–1953 and 1955–1957, there were also temporary investment taxes that can be seen as negative subsidies of investments. We have not included RUF, SURV or Periodization Funds in our calculations. As described earlier, RUF will not have any impact on the effective marginal corporate tax rate unless it increases the company's wage bill. We have assumed that the change in tax-free allocations (from RUF to SURV and from SURV to Periodization Funds) would not significantly change the effective marginal corporate tax rate of our firm.

where A_A refers to the present value of tax savings from the Annell deduction with a unit investment. A_A is calculated as (King and Fullerton 1984, pp. 322–323):

$$A_A = \frac{\tau h[1 - e^{-\rho\omega}]}{\rho - \pi + \delta}\left[1 - \left(\frac{\rho - \pi + \delta}{\rho}\right)\left(f_1 A_d + f_2\tau - \frac{\tau(\delta - \pi)}{\rho - \pi + \delta}\right)\right]$$

where h refers to the rate of the Annell deduction per dollar of new share issues and ω is the number of year that the deduction could take place after the new share issues. As discussed above, h increased from four percent in 1961 to five percent in 1967 and then 10 percent in 1979. In the same way, ω increased from six years to 10 years (1967) and then to 20 years (1979). There was also an upper limit to the deduction (since 1979), requiring that the deduction did not exceed the amount raised by the issue, i.e., $h\omega=1$. As explained above, the average dividends were about six percent on new share issues at the end of the 1970s. Hence, we will use $h = 0.06$ and $\omega=16.7$ for the period between 1980 and 1993.[58] When the Annell deduction was not in place, A is calculated as in the case of retained earnings and debt.

The higher the statutory tax rate is, the more important it is to find a reasonable estimate of A. As the statutory corporate tax rate was low (below 25 percent in our calculation) before the 1930s, the accuracy of the estimate will only slightly affect the effective tax rate for this period.

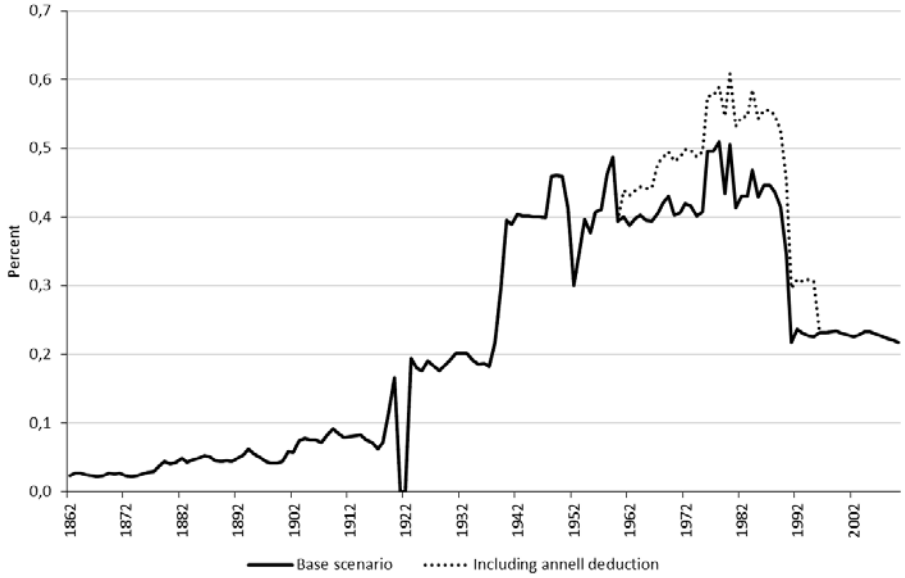
As described under the section above, immediate write-offs were allowed only between 1939 and 1954. From 1955 onward, accelerated write-offs (the 30 and 20 percent rules) were in force.[59] We will base our estimations on the 30 percent rule during this time, i.e., $a = 0.3$. As the first allowance may be taken in the first year of acquisition, $f_1 = 0.7$, and $f_2 = 0.3$.[60] When cash grants in the form of extra investment allowances were in place from 1976 to 1978 and in 1980, the calculations will be adjusted accordingly. Before 1939, the extent of accelerated write-offs is difficult to estimate owing to a lack of studies. As it was possible to use limited depreciation before 1939, we have assumed that the acquisition cost could be depreciated for tax purposes using the 30 percent rule.[61] The estimations should also include the effects from the IF system,

[58] If the maximum possibilities are used instead between 1979 and 1993, i.e., $h=10$ and $\omega=10$, the METR would decrease further by about four to eight percentage points.
[59] Between 1952 and 1954, there were also temporary limitations in the possibilities to use immediate write-offs, reducing the possible deduction on machinery and equipment to 20 percent.
[60] This corresponds to how Södersten analyzes investments in machinery and equipment (see Södersten 1984, p. 96). This ignores the 20 percent rule, but Södersten notes that this assumption is nevertheless reasonable and corresponds very well to the situation for growing firms with young vintages of capital.
[61] This will probably overestimate the allowances and hence underestimate the effective tax rate somewhat. As the corporate tax rate is rather low during this period, it will only slightly influence the results.

which was introduced in 1939 and abolished in 1991. The IF system was most favorable for investments in buildings and less favorable for investments in machinery and equipment, however (see next section).

The evolution of *A* is depicted in Figure B1 below. The present discounted value of tax savings from depreciation allowances and other grants associated with a unit investment is small initially but increases sharply at the beginning of World War II, when immediate write-offs were introduced and the statutory corporate tax rates were increased. *A* remains relatively high until the tax reform in 1990–1991 when the statutory corporate tax rate was decreased sharply and the value of tax savings thus decreased. It is still higher than the estimated value of *A* before World War II, however, i.e., during the first half of the examined period. In the figure, we have also included the effect from the Annell deduction, which increases the value of *A* somewhat between 1961 and 1993 (this example only applies in the case of new share issues).

Figure B1. The present discounted value of tax savings from depreciation allowances and other grants (*A*) given an initial cost of one unit



Source: Own calculations.

Investment fund system[62]

As described above, the IF system was introduced in 1939, but grew in importance first after 1955. The purpose with the system was to stabilize the economy and change the timing of

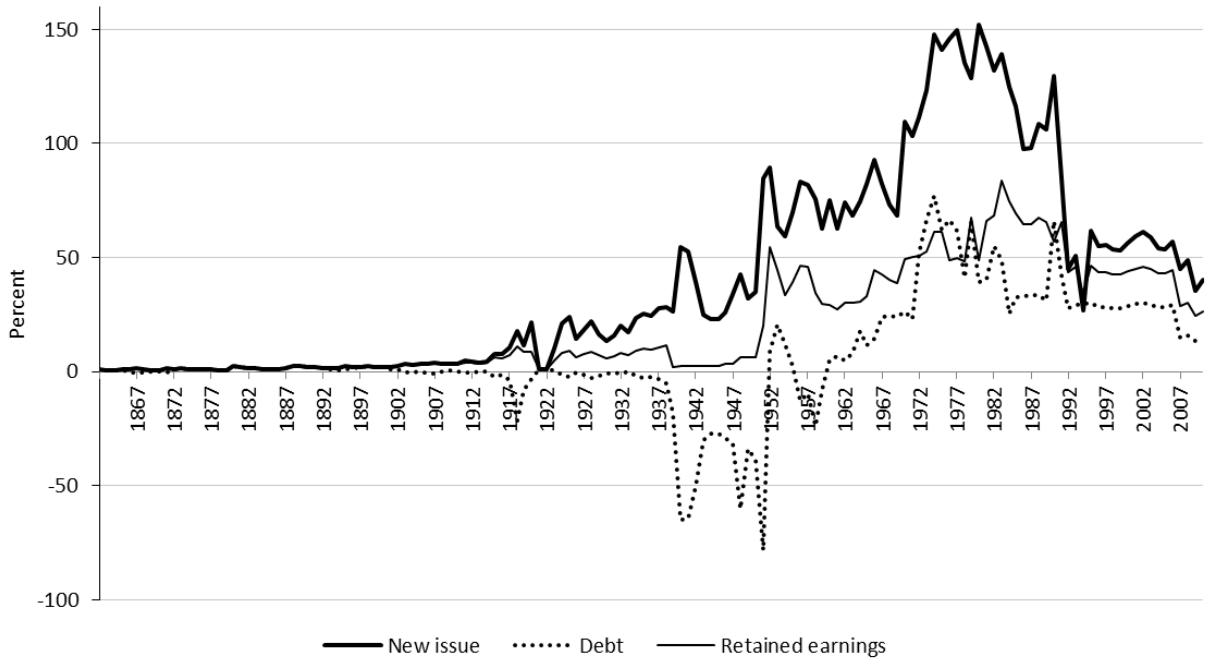
[62] See Bergström and Södersten (1984) or Södersten (1989) for a more thorough discussion about the IF system.

investments from booms to busts through the tax system. The rules behind the system was complicated and changed over time. In general, the system allowed firms to reduce the taxable profit by transferring part of the profit, normally 40–50 percent, to an investment fund. Part of this allocation, normally 40–50 percent (but at the end of the 1980s it could be much higher), had to be deposited at an interest-free account at the central bank. The deposits could be withdrawn and used for new investments after discretionary decisions by the politicians.[63] The rules also implied that the regular depreciation allowances could not be used on investments financed by the IF. This implied that investments in buildings were the most favorable investment as the net present value of depreciation allowances was lower for buildings than for machinery and equipment.[64]

Our previous calculations do not include any effect from the IF system. The precise effect of the IF system cannot be determined without additional assumptions about, e.g., the number of years at which time the firm can withdraw the central bank deposit. Södersten (1993, p. 281) claims that the conventional way to calculate the effect from IF, is based on special circumstances and that the incentive effects from the IF is much reduced if these assumptions are not fulfilled.[65] When funds are released, the IF system can be characterized as a general profit subsidy which can be interpreted as a general deduction of the statutory tax rate.[66] According to Agell et al. (1995, p. 116), a reasonable assumption about the IF system is that it could reduce the corporate tax rate with about 15 percentage points, as described in section 3.2. This may reduce the METR with about ten percentage points, see Figure B2.[67] As can be seen from the figure, the general pattern will still be the same.

[63] Occasionally, there were also an extra investment allowance amounting to ten percent when the IF funds were used.
[64] As described earlier, between 15 and 28 percent of the investments in buildings was financed with IF and the share among machinery and equipment was even lower (Agell et al. 1995, p. 115).
[65] Most importantly it requires that the firm must finance all its current investment from IF and that it will never exhaust its own fund; see Södersten (1989) for an in-depth discussion.
[66] The adjusted corporate tax can include three terms: (1) the proportion of profits that may not be allocated to the funds, (2) the present value of interest forgone on the central bank deposits and (3) present value of increased taxes owing to forgone depreciation allowances (Södersten 1984, pp. 101–102). If the company were allowed to use the funds continuously, as was mostly the case during the 1970s and 1980s, the second term can be dropped.
[67] The proportion of profits that could be allocated to the funds has been 40 percent 1955–1979 and 50 percent 1980–1990 (see Table B1). Ignoring the implicit costs associated with the IF system, a rough robustness test could also be done where you reduce the corporate tax rate with these numbers. With these lower corporate tax rates, the METR could be reduced with up to 25 percentage points. There will be a more pronounced decrease during the late 1950s and early 1960s but the same pattern with a relatively high level of the METR during the 1970s and 1980s would sustain.

Figure B2. METR for an investment financed with new share issues, retained earnings and debt, average production worker, IF case, 1862–2010 (%)



Note: Based on assumptions given in the text.
Source: Own calculations.

Corporate METR

One can also recalculate the METR and exclude the personal taxes (income and wealth taxes), i.e. only including and analyzing the effect from the corporate tax. With this measure one can see how much of the METR that is a result of the taxation at the corporate level. Figure B3, shows the result.

Figure B3. METR, corporate taxes only (corporate METR)

Source: Own calculations.

For equity finance, including new share issues and retained earnings, the corporate METR was low during the 19th century and started to increase between the wars (excluding the spike during World War I). It seldom exceeded 10 percent. When immediate write-offs were allowed and when no investment tax was in force, between 1939 and 1950, the corporate METR was 0. When immediate write-offs was abolished and temporary investment taxes were introduced, the corporate METR increased sharply. When the temporary investment taxes were abolished, the corporate METR initially decreased but it soon began to slowly increase again until the 1980s, with exception of some temporary decreases due to the investments grants in 1976–1978 and in 1980. It peaked at above 40 percent in the 1980s, but the highest level was reached in the 1950s. Corporate METR in the case of new share issues has been lower than retained earnings between 1961 and 1994 due to the Annell deduction but otherwise follows the same pattern. After the tax reform, the corporate METR has hovered between 10 and 15 percent. No corporate tax is paid on the marginal return in the case of debt as the interest is deductible. Hence, corporate METR will be negative. It could occasionally be very low and below 200 percent in 1980 when investment grants were used and the inflation was high.

Appendix C. Tax Tables

C1. Statutory corporate tax

This appendix presents statutory corporate tax schedules for each year between 1862 and 2010. The row in each table refers to a tax income bracket, starting at the indicated profit. Corporations and individual tax payers were taxed in the same way using the same tax schedules until 1910. Corporate taxation includes both a state tax and a local tax (until 1984), as well as several temporary taxes, such as defense taxes during the World Wars.

Table 1. The state marginal tax rate (appropriation tax), 1862–1910

State taxable profit SEK	Marginal tax rate % 1862–1883	State taxable profit SEK	Marginal tax rate % 1884–1910
0	0.0	0	0.0
400	1.0	500	1.0

Note:
1862–1883: If the state taxable profit did not exceed SEK 1,800, SEK 300 was exempted from taxation.
1884–1910: If the state taxable profit did not exceed SEK 1,200, SEK 450 was exempted from taxation. If the taxable profit amounted to SEK 1,200 but did not exceed SEK 1,800, SEK 300 is exempted from taxation.
Extra appropriations are not included in the numbers.
After 1911, the tax still existed as a local tax with the tax rate 0.1 percent above SEK 500.
Source: Du Rietz et al. (2013).

Table 2. Temporary appropriation tax

State taxable profit SEK	Marginal tax rate % 1871	1879–1882	1893	1894	1895	1896	1901	1902
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
400	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
800	0.5	0.5	0.3	1.0	1.0	0.0	0.0	0.0
1,200	0.5	0.5	0.3	1.0	1.0	0.15	0.5	0.5
1,800	0.5	0.5	0.3	1.0	1.0	0.3	1.0	1.0

Source: Du Rietz et al. (2013).

Table 3. The state marginal tax rate, 1903–1910

State taxable profit SEK	Marginal tax rate %
0	0
1,000	1.0
6,000	1.5
10,000	2.0
15,000	2.5
20,000	3.0
30,000	3.5
50,000	4.0
80,000	5.0
145,500	4.0

Note: State taxable profit = profit – dividends paid (max six percent of equity).
Source: Genberg (1942, p. 26). SFS 1902:84 and own calculations.

Table 4. The state tax rate, 1911–1919

Profitability %	Tax rate %	Profitability %	Tax rate %
0	2.5	18.5	3.90
5.0	2.55	19.0	3.95
5.5	2.60	19.5	4.00
6.0	2.65	20.0	4.05
6.5	2.70	21.0	4.10
7.0	2.75	22.0	4.15
7.5	2.80	23.0	4.20
8.0	2.85	24.0	4.25
8.5	2.90	25.0	4.30
9.0	2.95	26.0	4.35
9.5	3.00	27.0	4.40
10.0	3.05	28.0	4.45
10.5	3.10	29.0	4.50
11.0	3.15	30.0	4.55
11.5	3.20	32.0	4.60
12.0	3.25	34.0	4.65
12.5	3.30	36.0	4.70
13.0	3.35	38.0	4.75
13.5	3.40	40.0	4.80
14.0	3.45	45.0	4.85
14.5	3.50	50.0	4.90
15.0	3.55	55.0	4.95
15.5	3.60	60.0	5.00
16.0	3.65	70.0	5.05
16.5	3.70	80.0	5.10
17.0	3.75	90.0	5.15
17.5	3.80	100.0	5.20
18.0	3.85		

Note: Profitability = profit / equity.
All profit is taxed according to the tax rates above, i.e., if profitability is between 9.5 and 10 %, the company has to pay 3 % of *all* profit in corporate tax.
Source: Genberg (1942, p. 26), SFS 1910:115.

Table 5. The state tax rate, 1920–1938

Profitability %	Basic rate	Profitability %	Basic rate
0	1.5	22.0	7.60
4.0	1.6	23.0	7.75
4.25	1.7	24.0	7.90
4.5	1.8	25.5	8.05
4.75	1.9	27.0	8.20
5.0	2.0	28.5	8.35
5.33	2.2	30.0	8.50
5.67	2.4	32.0	8.65
6.0	2.6	34.0	8.80
6.33	2.8	36.0	8.95
6.67	3.0	39.0	9.10
7.0	3.2	42.0	9.25
7.33	3.4	46.0	9.40
7.67	3.6	50.0	9.55
8.0	3.8	55.0	9.70
8.5	4.0	60.0	9.85
9.0	4.2	65.0	10.00
9.5	4.4	70.0	10.15
10.0	4.6	75.0	10.30
10.5	4.8	80.0	10.45
11.0	5.0	85.0	10.60
11.5	5.2	90.0	10.75
12.0	5.4	95.0	10.90
12.5	5.6	100.0	11.00
13.0	5.8	105.0	11.10
13.67	6.0	110.0	11.20
14.33	6.2	115.0	11.30
15.0	6.4	120.0	11.40
16.0	6.6	125.0	11.50
17.0	6.8	130.0	11.60
18.0	7.0	135.0	11.70
19.0	7.15	140.0	11.80
20.0	7.30	145.0	11.90
21.0	7.45	150.0	12.00

Withdrawal percentage %	
1920	155
1921	175
1922	175
1923	175
1924	175
1925	170
1926	160
1927	160
1928	150
1929	145
1930	145
1931	145
1932	145
1933	165
1934	170
1935	170
1936	170
1937	170
1938	180

Note: Profitability = profit / equity. Municipality tax paid was deductible.
To calculate the exact tax rate for a specific year between 1920 and 1938, one must multiply the basic rate by the withdrawal percentage for the specific year. All profit is taxed according to the tax rates above, i.e., if the profitability is 10 %, then the company has to pay 4.6 % * 1.55 = 7.13 % of *all* profit in corporate tax in 1920.
Source: SFS 1919:733 and Genberg (1942, pp. 8–9, 26).

Table 6. The state marginal tax rate, 1939–1947

Year	Marginal tax rate %
1939	13
1940	20
1941	20
1942	20
1943	20
1944	20
1945	20
1946	20
1947	20

Note: Formally, the tax rate was 10 %, but the withdrawal percentage was 130 percent in 1939 and 200 percent between 1940 and 1947.
Source: Genberg (1942, p. 27), Rodriguez (1980).

Table 7. The state marginal tax rate, 1948–2010

Year	Marginal tax rate %	Year	Marginal tax rate %
1948	40	1980	40
1949	40	1981	40
1950	40	1982	40
1951	40	1983	40
1952	40	1984	40
1953	40	1985	52
1954	40	1986	52
1955	45	1987	52
1956	50	1988	52
1957	50	1989	52
1958	50	1990	40
1959	50	1991	30
1960	40	1992	30
1961	40	1993	30
1962	40	1994	28
1963	40	1995	28
1964	40	1996	28
1965	40	1997	28
1966	40	1998	28
1967	40	1999	28
1968	40	2000	28
1969	40	2001	28
1970	40	2002	28
1971	40	2003	28
1972	40	2004	28
1973	40	2005	28
1974	40	2006	28
1975	40	2007	28
1976	40	2008	28
1977	40	2009	26.3
1978	40	2010	26.3
1979	40		

Note: An additional “profit sharing tax” was in force between 1984 and 1990 but is not included in the figures above. The tax rate from this tax cannot be easily expressed as a single statutory tax rate. We have assumed that this tax increased the statutory tax rate by five percentage points during this time period.
Source: Nordling (1989), Södersten (1993), Agell et al. (1995), Ministry of Finance (2008).

Table 8. The local corporate tax rate, 1862–1984

Year	Local tax %	Year	Local tax %	Year	Local tax %
1862	2.0	1903	5.2	1944	10.1
1863	2.0	1904	5.2	1945	10.0
1864	2.0	1905	5.4	1946	10.0
1865	2.0	1906	5.4	1947	9.8
1866	2.0	1907	5.4	1948	9.8
1867	2.0	1908	6.2	1949	10.1
1868	2.0	1909	6.8	1950	10.0
1869	2.0	1910	6.3	1951	10.2
1870	2.0	1911	6.1	1952	12.5
1871	2.0	1912	6.2	1953	12.7
1872	2.0	1913	6.1	1954	12.4
1873	2.0	1914	6.4	1955	12.2
1874	2.0	1915	7.2	1956	12.4
1875	2.2	1916	6.5	1957	12.6
1876	2.5	1917	6.2	1958	13.7
1877	2.8	1918	6.8	1959	14.2
1878	3.0	1919	7.2	1960	14.6
1879	3.3	1920	6.5	1961	15.0
1880	3.8	1921	8.1	1962	15.2
1881	3.9	1922	8.1	1963	15.5
1882	4.1	1923	8.3	1964	16.5
1883	4.2	1924	8.7	1965	17.3
1884	4.3	1925	8.7	1966	18.3
1885	4.5	1926	8.7	1967	18.7
1886	4.9	1927	8.7	1968	19.3
1887	4.9	1928	8.5	1969	20.2
1888	4.8	1929	8.3	1970	21.0
1889	4.7	1930	8.7	1971	22.5
1890	4.6	1931	10.2	1972	23.8
1891	4.6	1932	11.0	1973	23.9
1892	4.7	1933	10.5	1974	24.0
1893	4.8	1934	9.9	1975	25.2
1894	4.9	1935	9.5	1976	26.2
1895	4.8	1936	9.6	1977	26.9
1896	4.7	1937	9.6	1978	28.7
1897	4.6	1938	10.5	1979	29.0
1898	4.5	1939	11.5	1980	29.1
1899	4.3	1940	11.9	1981	29.6
1900	4.4	1941	11.1	1982	29.7
1901	4.8	1942	10.5	1983	30.2
1902	5.0	1943	10.2	1984	30.3

Source: Du Rietz et al. (2013).

Table 9. Local progressive income tax, 1920–1927

Profitability %	Marginal tax rate %
0	0
6.0	1
11.0	2
16.0	3
21.0	4
26.0	5
34.0	6
42.0	7
52.0	8
64.5	5

Note: Profitability = profit/equity. In the highest tax income bracket, the marginal tax rate is lower because of the average tax cap.
Source: Genberg (1942, p. 26).

Table 10. The local progressive income tax, 1928–1938
The tax rate was equal to 3/40 *(profitability – 6 %). There was also an average tax cap of 3.75 %.

Profitability %	Tax rate %	Profitability %	Tax rate %
0	0	31	1.875
6	0	32	1.95
7	0.075	33	2.025
8	0.15	35	2.10
9	0.225	36	2.175
10	0.30	36	2.25
11	0.375	37	2.325
12	0.45	38	2.40
13	0.525	39	2.475
14	0.60	40	2.55
15	0.675	41	2.625
16	0.75	42	2.70
17	0.825	43	2.775
18	0.90	44	2.85
19	0.975	45	2.925
20	1.05	46	3.00
21	1.125	47	3.075
22	1.20	48	3.15
23	1.275	49	3.225
24	1.35	50	3.30
25	1.425	51	3.375
26	1.50	52	3.45
27	1.575	53	3.525
28	1.65	54	3.60
29	1.725	55	3.675
30	1.80	56	3.75

Note: Profitability = profit/equity. All profit is taxed according to the tax rates above, i.e., if the profitability is 10 %, then the company has to pay 0.3 % of *all* profit in corporate tax. This table is an illustration and shows the tax rate for profitability in integers. To obtain the tax rate for profitability rates between the integer levels, one has to use the formula above the table.
Source: Genberg (1942, p. 27).

Table 11. The state equalization tax (*den statliga utjämningsskatten)*, 1928–1933
The state equalization tax was one-third of the local progressive income tax.

Profitability %	Tax rate %	Profitability %	Tax rate %
0	0.0	31	0.625
6	0.0	32	0.65
7	0.025	33	0.675
8	0.05	35	0.7
9	0.075	36	0.725
10	0.10	36	0.75
11	0.125	37	0.775
12	0.15	38	0.8
13	0.175	39	0.825
14	0.20	40	0.85
15	0.225	41	0.875
16	0.25	42	0.9
17	0.275	43	0.925
18	0.30	44	0.95
19	0.325	45	0.975
20	0.35	46	1
21	0.375	47	1.025
22	0.40	48	1.05
23	0.425	49	1.075
24	0.45	50	1.1
25	0.475	51	1.125
26	0.50	52	1.15
27	0.525	53	1.175
28	0.55	54	1.2
29	0.575	55	1.225
30	0.60	56	1.25

Note: Profitability = profit/equity. Formally, the state equalization tax was one-third of the municipality progressive income tax. All profit is taxed according to the tax rates above, i.e., if the profitability is 10 %, then the company has to pay 0.1 % of *all* profit in corporate tax.
Source: Genberg (1942, p. 27).

Table 12. The state equalization tax, 1934–1938
The state equalization tax was two-thirds of the local progressive income tax.

Profitability %	Tax rate %	Profitability %	Tax rate %
0	0.0	31	1.25
6	0.0	32	1.30
7	0.05	33	1.35
8	0.10	35	1.40
9	0.15	36	1.45
10	0.20	36	1.50
11	0.25	37	1.55
12	0.30	38	1.60
13	0.35	39	1.65
14	0.40	40	1.70
15	0.45	41	1.75
16	0.50	42	1.80
17	0.55	43	1.85
18	0.60	44	1.90
19	0.65	45	1.95
20	0.70	46	2.00
21	0.75	47	2.05
22	0.80	48	2.10
23	0.85	49	2.15
24	0.90	50	2.20
25	0.95	51	2.25
26	1.00	52	2.30
27	1.05	53	2.35
28	1.10	54	2.40
29	1.15	55	2.45
30	1.20	56	2.50

Note: Profitability = profit/equity. Formally, the state equalization tax was two-thirds of the municipality progressive income tax. All profit is taxed according to the tax rates above, i.e., if the profitability is 10 %, then the company has to pay 0.1 % of *all* profit in corporate tax. This table shows the tax rate for profitability in integers and is only an illustration. To obtain the true tax rate for profitability rates between the integer levels, one has to use the formula above the table.
Source: Genberg (1942, p. 27).

Table 13. The defense tax in 1918

Profitability %	Tax rate %	Profitability %	Tax rate %	Profitability %	Tax rate %
0.00	0	13.50	2.10	36.00	3.30
5.00	0.36	14.00	2.13	38.00	3.35
5.33	0.56	14.50	2.16	40.00	3.40
5.67	0.76	15.00	2.20	45.00	3.45
6.00	0.96	15.50	2.25	50.00	3.50
6.33	1.16	16.00	2.30	55.00	3.55
6.67	1.36	16.50	2.35	60.00	3.60
7.00	1.56	17.00	2.40	65.00	3.65
7.33	1.59	17.50	2.45	70.00	3.70
7.67	1.62	18.00	2.50	75.00	3.75
8.00	1.65	18.50	2.55	80.00	3.80
8.33	1.68	19.00	2.60	85.00	3.85
8.67	1.71	20.00	2.65	90.00	3.90
9.00	1.74	21.00	2.70	95.00	3.95
9.33	1.77	22.00	2.75	100.00	4.00
9.67	1.80	23.00	2.80	105.00	4.10
10.00	1.83	24.00	2.85	110.00	4.20
10.33	1.86	25.00	2.90	115.00	4.30
10.67	1.89	26.00	2.95	120.00	4.40
11.00	1.92	27.00	3.00	125.00	4.50
11.33	1.95	28.00	3.05	130.00	4.60
11.67	1.98	29.00	3.10	135.00	4.70
12.00	2.01	30.00	3.15	140.00	4.80
12.50	2.04	32.00	3.20	145.00	4.90
13.00	2.07	34.00	3.25	150.00	5.00

Note: Profitability = profit/equity. All profit is taxed according to the tax rates above, i.e., if profitability is between 10.0 and 10.33 %, the company has to pay 1.83 % of *all* profit in defense tax.
Source: SFS 1918:512.

Table 14. The defense tax in 1919

Profitability %	Tax rate %	Profitability %	Tax rate %	Profitability %	Tax rate %
0.00	0.00	13.50	4.20	36.00	6.60
5.00	0.72	14.00	4.26	38.00	6.70
5.33	1.12	14.50	4.32	40.00	6.80
5.67	1.52	15.00	4.40	45.00	6.90
6.00	1.92	15.50	4.50	50.00	7.00
6.33	2.32	16.00	4.60	55.00	7.10
6.67	2.72	16.50	4.70	60.00	7.20
7.00	3.12	17.00	4.80	65.00	7.30
7.33	3.18	17.50	4.90	70.00	7.40
7.67	3.24	18.00	5.00	75.00	7.50
8.00	3.30	18.50	5.10	80.00	7.60
8.33	3.36	19.00	5.20	85.00	7.70
8.67	3.42	20.00	5.30	90.00	7.80
9.00	3.48	21.00	5.40	95.00	7.90
9.33	3.54	22.00	5.50	100.00	8.00
9.67	3.60	23.00	5.60	105.00	8.20
10.00	3.66	24.00	5.70	110.00	8.40
10.33	3.72	25.00	5.80	115.00	8.60
10.67	3.78	26.00	5.90	120.00	8.80
11.00	3.84	27.00	6.00	125.00	9.00
11.33	3.90	28.00	6.10	130.00	9.20
11.67	3.96	29.00	6.20	135.00	9.40
12.00	4.02	30.00	6.30	140.00	9.60
12.50	4.08	32.00	6.40	145.00	9.80
13.00	4.14	34.00	6.50	150.00	10.00

Note: Profitability = profit/equity. All profit is taxed according to the tax rates above, i.e., if profitability is between 10 and 10.33 %, the company has to pay 3.66 % of *all* profit in defense tax.
Source: SFS 1918:513.

Table 15. The defense tax during WWII

Year	Marginal tax rate %
1939	6.5
1940	10
1941	10
1942	12
1943	12
1944	12
1945	12
1946	12
1947	12

Source: Genberg (1942, p. 27) and Nordling (1989, p. 62).

C2. Personal income taxes

Table 16. Marginal personal tax rate on interest, 1862–2010

Year	0.67	APW	1.67	Top	Year	0.67	APW	1.67	Top	Year	0.67	APW	1.67	Top
1862	2.0	3.0	3.0	3.0	1906	6.4	6.4	7.4	11.4	1950	21.6	25.1	28.7	73.0
1863	2.0	3.0	3.0	3.0	1907	6.4	6.4	7.4	11.4	1951	21.8	25.3	31.7	73.1
1864	2.0	3.0	3.0	3.0	1908	7.2	7.2	8.2	12.2	1952	25.5	28.1	36.1	73.8
1865	2.0	3.0	3.0	3.0	1909	7.8	7.8	8.8	12.8	1953	25.0	28.8	38.6	69.5
1866	2.0	2.0	3.0	3.0	1910	7.3	7.3	8.3	12.3	1954	25.3	32.9	38.4	69.3
1867	2.0	2.0	3.0	3.0	1911	6.2	6.8	7.2	12.2	1955	25.2	32.8	41.2	69.3
1868	2.0	2.0	3.0	3.0	1912	6.3	6.9	7.5	12.3	1956	29.1	32.9	41.3	69.3
1869	2.0	2.0	3.0	3.0	1913	6.2	6.8	7.4	25.7	1957	29.3	33.5	40.6	69.4
1870	2.0	2.0	3.0	3.0	1914	6.5	7.1	7.7	12.5	1958	30.1	35.3	41.3	69.8
1871	2.0	2.0	3.5	3.5	1915	7.3	7.9	8.5	13.3	1959	31.6	38.2	41.7	70.0
1872	2.0	3.0	3.0	3.0	1916	7.0	7.4	8.0	12.6	1960	32.0	38.5	41.9	70.1
1873	2.0	3.0	3.0	3.0	1917	6.9	7.3	7.7	12.3	1961	32.3	38.8	45.6	70.3
1874	2.0	3.0	3.0	3.0	1918	7.7	8.1	8.7	29.9	1962	34.9	39.0	45.8	70.3
1875	2.2	3.2	3.2	3.2	1919	8.5	8.7	9.3	30.3	1963	35.1	39.1	50.1	70.4
1876	2.5	3.5	3.5	3.5	1920	11.7	11.8	12.1	33.3	1964	35.9	43.9	50.7	70.8
1877	2.6	3.6	3.6	3.6	1921	12.9	13.0	13.0	36.4	1965	36.4	42.1	51.2	71.0
1878	3.0	4.0	4.0	4.0	1922	12.9	13.0	13.0	36.5	1966	38.8	42.7	52.9	71.4
1879	3.3	4.8	4.8	4.8	1923	13.1	13.2	13.2	36.6	1967	43.3	46.4	53.4	71.5
1880	3.8	5.3	5.3	5.3	1924	13.5	13.5	13.5	36.9	1968	44.1	47.1	54.0	71.8
1881	3.9	5.4	5.4	5.4	1925	13.3	13.4	13.4	36.2	1969	44.7	47.7	55.3	72.1
1882	4.1	5.6	5.6	5.6	1926	13.1	13.2	13.2	35.0	1970	45.2	48.2	55.8	72.4
1883	4.2	5.2	5.2	5.2	1927	13.1	13.2	13.2	35.1	1971	35.9	47.3	60.6	76.5
1884	4.3	5.3	5.3	5.3	1928	12.6	12.7	12.7	33.8	1972	42.8	57.7	61.8	77.8
1885	4.5	5.5	5.5	5.5	1929	12.3	12.3	12.3	32.9	1973	40.1	62.3	61.9	77.9
1886	4.9	5.9	5.9	5.9	1930	12.7	12.7	12.7	33.1	1974	43.9	61.6	62.0	78.0
1887	4.9	5.9	5.9	5.9	1931	14.1	14.1	14.1	34.5	1975	47.2	58.2	73.2	81.2
1888	4.8	5.8	5.8	5.8	1932	14.8	14.8	14.8	38.5	1976	48.2	64.2	75.2	83.2
1889	4.7	5.7	5.7	5.7	1933	14.9	14.9	14.9	40.7	1977	41.9	62.9	75.9	84.9
1890	4.6	5.6	5.6	5.6	1934	14.5	14.5	14.5	42.2	1978	41.7	59.7	77.7	86.7
1891	4.6	5.6	5.6	5.6	1935	14.2	14.2	14.2	42.0	1979	45.0	62.0	78.0	87.0
1892	4.7	5.7	5.7	5.7	1936	15.0	14.2	14.2	45.4	1980	43.1	59.1	82.1	85.0
1893	4.8	5.8	6.1	6.1	1937	15.0	14.2	14.2	45.4	1981	43.6	55.6	82.6	85.0
1894	4.9	5.9	6.9	6.9	1938	16.2	15.4	15.4	47.3	1982	43.7	58.7	82.7	85.0
1895	4.8	5.8	6.8	6.8	1939	19.5	18.7	18.7	59.0	1983	40.2	53.2	75.2	84.0
1896	4.7	5.7	5.7	6.0	1940	23.0	22.2	24.0	65.4	1984	37.3	53.3	70.3	82.0
1897	4.6	5.6	5.6	5.6	1941	22.3	21.5	23.3	65.1	1985	34.4	50.4	65.4	80.0
1898	4.5	5.5	5.5	5.5	1942	21.9	21.9	24.2	72.0	1986	45.3	50.3	70.3	80.3
1899	4.3	5.3	5.3	5.3	1943	21.6	21.6	23.9	71.9	1987	43.4	50.4	70.4	77.4
1900	4.4	5.4	5.4	5.4	1944	21.6	21.6	23.8	71.9	1988	50.6	50.6	75.6	75.6
1901	4.8	5.8	5.8	6.8	1945	21.5	21.5	23.7	71.9	1989	47.8	47.8	72.8	72.8
1902	5.0	6.0	6.5	7.0	1946	21.5	21.5	23.7	71.9	1990	41.2	55.2	66.2	66.2
1903	5.2	6.2	7.2	11.2	1947	21.3	23.6	25.8	71.8	1991–2010	30.0	30.0	30.0	30.0
1904	6.2	6.2	7.2	11.2	1948	20.6	23.2	26.8	72.9					
1905	6.4	6.4	7.4	11.4	1949	20.8	25.3	28.8	73.0					

Note: Based on assumptions given in the text. APW, 0.67 and 1.67 refer to the marginal tax rate of an average production worker and a tax payer earning 0.67 or 1.67 times the income of an average production worker. Top is the highest tax rate.
Source: Du Rietz et al. (2013) and own calculations.

Table 17. Marginal personal tax rate on dividends, 1862–2010

Year	0.67	APW	1.67	Top	Year	0.67	APW	1.67	Top	Year	0.67	APW	1.67	Top
1862–1902	-	-	-	-	1938	16.2	15.4	15.4	47.3	1975	47.2	58.2	73.2	81.2
					1939	19.5	18.7	18.7	59.0	1976	48.2	64.2	75.2	83.2
1903	0.0	0.0	1.0	5.0	1940	23.0	22.2	24.0	65.4	1977	41.9	62.9	75.9	84.9
1904	0.0	0.0	1.0	5.0	1941	22.3	21.5	23.3	65.1	1978	41.7	59.7	77.7	86.7
1905	0.0	0.0	1.0	5.0	1942	21.9	21.9	24.2	72.0	1979	45.0	62.0	78.0	87.0
1906	0.0	0.0	1.0	5.0	1943	21.6	21.6	23.9	71.9	1980	43.1	59.1	82.1	85.0
1907	0.0	0.0	1.0	5.0	1944	21.6	21.6	23.8	71.9	1981	43.6	55.6	82.6	85.0
1908	0.0	0.0	1.0	5.0	1945	21.5	21.5	23.7	71.9	1982	43.7	58.7	82.7	85.0
1909	0.0	0.0	1.0	5.0	1946	21.5	21.5	23.7	71.9	1983	40.2	53.2	75.2	84.0
1910	0.0	0.0	1.0	5.0	1947	21.3	23.6	25.8	71.8	1984	37.3	53.3	70.3	82.0
1911	0.0	0.6	1.0	6.0	1948	20.6	23.2	26.8	72.9	1985	34.4	50.4	65.4	80.0
1912	0.0	0.6	1.2	6.0	1949	20.8	25.3	28.8	73.0	1986	45.3	50.3	70.3	80.3
1913	0.0	0.6	1.2	19.5	1950	21.6	25.1	28.7	73.0	1987	43.4	50.4	70.4	77.4
1914	0.0	0.6	1.2	6.0	1951	21.8	25.3	31.7	73.1	1988	50.6	50.6	75.6	75.6
1915	0.0	0.6	1.2	6.0	1952	25.5	28.1	36.1	73.8	1989	47.8	47.8	72.8	72.8
1916	0.4	0.8	1.4	6.0	1953	25.0	28.8	38.6	69.5	1990	41.2	55.2	66.2	66.2
1917	0.6	1.0	1.4	6.0	1954	25.3	32.9	38.4	69.3	1991	30.0	30.0	30.0	30.0
1918	0.8	1.2	1.8	23.0	1955	25.2	32.8	41.2	69.3	1992	25.0	25.0	25.0	25.0
1919	1.2	1.4	2.0	23.0	1956	29.1	32.9	41.3	69.3	1993	25.0	25.0	25.0	25.0
1920	11.7	11.8	12.1	33.3	1957	29.3	33.5	40.6	69.4	1994	0.0	0.0	0.0	0.0
1921	12.9	13.0	13.0	36.4	1958	30.1	35.3	41.3	69.8	1995	30.0	30.0	30.0	30.0
1922	12.9	13.0	13.0	36.5	1959	31.6	38.2	41.7	70.0	1996	30.0	30.0	30.0	30.0
1923	13.1	13.2	13.2	36.6	1960	32.0	38.5	41.9	70.1	1997	30.0	30.0	30.0	30.0
1924	13.5	13.5	13.5	36.9	1961	32.3	38.8	45.6	70.3	1998	30.0	30.0	30.0	30.0
1925	13.3	13.4	13.4	36.2	1962	34.9	39.0	45.8	70.3	1999	30.0	30.0	30.0	30.0
1926	13.1	13.2	13.2	35.0	1963	35.1	39.1	50.1	70.4	2000	30.0	30.0	30.0	30.0
1927	13.1	13.2	13.2	35.1	1964	35.9	43.9	50.7	70.8	2001	30.0	30.0	30.0	30.0
1928	12.6	12.7	12.7	33.8	1965	36.4	42.1	51.2	71.0	2002	30.0	30.0	30.0	30.0
1929	12.3	12.3	12.3	32.9	1966	38.8	42.7	52.9	71.4	2003	30.0	30.0	30.0	30.0
1930	12.7	12.7	12.7	33.1	1967	43.3	46.4	53.4	71.5	2004	30.0	30.0	30.0	30.0
1931	14.1	14.1	14.1	34.5	1968	44.1	47.1	54.0	71.8	2005	30.0	30.0	30.0	30.0
1932	14.8	14.8	14.8	38.5	1969	44.7	47.7	55.3	72.1	2006	30.0	30.0	30.0	30.0
1933	14.9	14.9	14.9	40.7	1970	45.2	48.2	55.8	72.4	2007	30.0	30.0	30.0	30.0
1934	14.5	14.5	14.5	42.2	1971	35.9	47.3	60.6	76.5	2008	30.0	30.0	30.0	30.0
1935	14.2	14.2	14.2	42.0	1972	42.8	57.7	61.8	77.8	2009	30.0	30.0	30.0	30.0
1936	15.0	14.2	14.2	45.4	1973	40.1	62.3	61.9	77.9	2010	30.0	30.0	30.0	30.0
1937	15.0	14.2	14.2	45.4	1974	42.3	61.6	62.0	78.0					

Note: Based on assumptions given in the text. Dividends were tax exempted before 1903. APW, 0.67 and 1.67 refer to the marginal tax rate of an average production worker and a tax payer earning 0.67 or 1.67 times the income of an average production worker. Top is the highest tax rate.

Source: Du Rietz et al. (2013) and own calculations.

Table 18. Effective accrued capital gains tax for an average production worker, 1862–2010 (long-term possession)

Year	%	Year	%
1862–1965	-	1988	10.9
1966	5.0	1989	9.9
1967	6.0	1990	9.2
1968	6.7	1991	13.0
1969	7.2	1992	13.7
1970	5.2	1993	12.4
1971	5.4	1994	6.6
1972	7.1	1995	16.5
1973	7.5	1996	18.2
1974	6.7	1997	18.1
1975	6.3	1998	18.6
1976	10.4	1999	18.7
1977	9.8	2000	17.8
1978	9.7	2001	17.2
1979	12.6	2002	16.7
1980	8.4	2003	17.2
1981	9.2	2004	18.5
1982	11.2	2005	18.6
1983	10.8	2006	17.7
1984	10.9	2007	15.5
1985	10.2	2008	14.7
1986	11.8	2009	17.4
1987	11.8	2010	16.3

Note: Based on assumptions given in the text.
Source: Du Rietz et al. (2013) and own calculations.

C3. Wealth tax

Between 1911 and 1947, the regular personal income tax system was a combined income and wealth tax, and part of a tax payer's assessed net wealth was included in the tax base. A separate wealth tax also existed between 1934 and 1991/2006, which levied specific tax rates on assessed net wealth.[68] Below, we show the separate wealth tax in force between 1934 and 2006.

Table 19. Income and wealth tax, 1911–1947

	Share of wealth added on taxable income
1911–1938	1/60
1939–1947	1/100

Note: The table refers to the ordinary income tax. Several temporary taxes that also included part of the wealth in the tax base also existed. The temporary defense tax in 1913 included, e.g., one-tenth of wealth.
For the explicit tax rates see Du Rietz and Henrekson (2013).
Source: Stenkula et al. (2013).

Table 20. Wealth tax, 1934–1938

Taxable wealth SEK	Marginal tax rate %
50,000	0.1
150,000	0.2
300,000	0.3
500,000	0.4
1,000,000	0.5

Source: Genberg (1942, p. 23).

Table 21. Wealth tax, 1939–1947

Taxable wealth SEK	Marginal tax rate %
20,000	0.1
40,000	0.2
80,000	0.3
150,000	0.4
300,000	0.5
1,000,000	0.6

Source: Genberg (1942, p. 24) and SOU 1969:54, p. 80.

[68] The wealth tax based on unlisted firm equity was abolished in 1991, whereas the wealth tax was completely abolished in 2007 (Du Rietz and Henrekson 2013).

Table 22. Wealth tax, 1948–1952

Taxable wealth SEK	Marginal tax rate %
30,000	0.6
100,000	1.0
150,000	1.2
200,000	1.5
300,000	1.8

Source: SOU 1951:51, p. 225.

Table 23. Wealth tax, 1953–1956

Taxable wealth SEK	Marginal tax rate %
50,000	0.5
100,000	0.8
150,000	1.0
200,000	1.3
400,000	1.6
1,000,000	1.8

Source: SOU 1957:48, p. 174, 176.

Table 24. Wealth tax, 1957–1964

Taxable wealth SEK	Marginal tax rate %
80,000	0.5
100,000	0.8
150,000	1.0
200,000	1.3
400,000	1.6
1,000,000	1.8

Source: SOU 1957:48, p. 174.

Table 25. Wealth tax, 1965–1969

Taxable wealth SEK	Marginal tax rate %
100,000	0.8
150,000	1.0
200,000	1.3
400,000	1.6
1,000,000	1.8

Source: SOU 1969:54, p. 14, Bratt and Fernström (1971, p. 239).

Table 26. Wealth tax, 1970

Taxable wealth SEK	Marginal tax rate %
150,000	1.0
250,000	1.3
400,000	1.6
1,000,000	1.8

Source: Bratt and Fernström (1971, p. 239).

Table 27. Wealth tax, 1971–1973

Taxable wealth SEK	Marginal tax rate %
150,000	1.0
250,000	1.5
400,000	2.0
1,000,000	2.5

Source: SOU 1971:46, p. 19, Bratt and Fernström (1975, p 246).

Table 28. Wealth tax, 1974–1980

Taxable wealth SEK	Marginal tax rate %
200,000	1.0
275,000	1.5
400,000	2.0
1,000,000	2.5

Source: Bratt et al. (1982, p. 286)

Table 29. Wealth tax, 1981–1982

Taxable wealth SEK	Marginal tax rate %
400,000	1.0
600,000	1.5
800,000	2.0
1,800,000	2.5

Source: Bratt et al. (1982, p. 286).

Table 30. Wealth tax, 1983

Taxable wealth SEK	Marginal tax rate %
300,000	1.0
400,000	2.5
600,000	3.0
800,000	3.5
1,800,000	4.0

Source: Bratt et al. (1984, p. 362).

Table 31. Wealth tax, 1984–1989

Taxable wealth SEK	Marginal tax rate %
400,000	1.5
600,000	2.0
800,000	2.5
1,800,000	3.0

Source: Bratt et al. (1984, p. 362), Nordling (1989, p. 93).

Table 32. Wealth tax, 1990

Taxable wealth SEK	Marginal tax rate %
800,000	1.5
1,600,000	2.5
3,600,000	3.0

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 33. Wealth tax, 1991

Taxable wealth SEK	Marginal tax rate %
800,000	1.5
1,600,000	2.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 34. Wealth tax, 1992–1995

Taxable wealth SEK	Marginal tax rate %
800,000	1.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 35. Wealth tax, 1996–2000

Taxable wealth SEK	Marginal tax rate %
900,000	1.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 36. Wealth tax, 2001

Taxable wealth		Marginal tax rate
Single	Couples	
SEK	SEK	%
1,000,000	1,500,000	1.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 37. Wealth tax, 2002–2004

Taxable wealth		Marginal tax rate
Single	Couples	
SEK	SEK	%
1,000,000	2,000,000	1.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

Table 38. Wealth tax, 2005–2006

Taxable wealth		Marginal tax rate
Single	Couples	
SEK	SEK	%
1,500,000	3,000,000	1.5

Source: Tax Statistical Yearbook of Sweden (2005, p. 113).

C4. METR

Table 39. Marginal effective tax rate (METR) on capital income, 1862–2010

	New share issues			Retained earnings			Debt		
Year	0.67 APW	APW	Top	0.67 APW	APW	Top	0.67 APW	APW	Top
1862	1.1	1.1	1.1	1.1	1.1	1.1	-0.2	1.1	1.1
1863	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5
1864	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6	0.6
1865	0.9	0.9	0.9	0.9	0.9	0.9	-0.1	0.9	0.9
1866	1.1	1.1	1.1	1.1	1.1	1.1	-0.2	-0.2	1.1
1867	1.3	1.3	1.3	1.3	1.3	1.3	-0.4	-0.4	1.3
1868	1.1	1.1	1.1	1.1	1.1	1.1	-0.2	-0.2	1.1
1869	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5
1870	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6
1871	1.3	1.3	1.3	1.3	1.3	1.3	-0.7	-0.7	1.3
1872	1.2	1.2	1.2	1.2	1.2	1.2	-0.3	1.2	1.2
1873	1.4	1.4	1.4	1.4	1.4	1.4	-0.5	1.4	1.4
1874	1.1	1.1	1.1	1.1	1.1	1.1	-0.3	1.1	1.1
1875	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.9	0.9
1876	1.1	1.1	1.1	1.1	1.1	1.1	0.0	1.1	1.1
1877	1.1	1.1	1.1	1.1	1.1	1.1	0.1	1.1	1.1
1878	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5
1879	0.7	0.7	0.7	0.7	0.7	0.7	0.1	0.7	0.7
1880	2.2	2.2	2.2	2.2	2.2	2.2	-0.2	2.2	2.2
1881	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0
1882	1.4	1.4	1.4	1.4	1.4	1.4	0.2	1.4	1.4
1883	1.5	1.5	1.5	1.5	1.5	1.5	0.6	1.5	1.5
1884	1.1	1.1	1.1	1.1	1.1	1.1	0.5	1.1	1.1
1885	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0
1886	1.1	1.1	1.1	1.1	1.1	1.1	0.5	1.1	1.1
1887	1.3	1.3	1.3	1.3	1.3	1.3	0.6	1.3	1.3
1888	2.2	2.2	2.2	2.2	2.2	2.2	0.8	2.2	2.2
1889	2.3	2.3	2.3	2.3	2.3	2.3	0.8	2.3	2.3
1890	2.0	2.0	2.0	2.0	2.0	2.0	0.7	2.0	2.0
1891	2.1	2.1	2.1	2.1	2.1	2.1	0.7	2.1	2.1
1892	1.5	1.5	1.5	1.5	1.5	1.5	0.7	1.5	1.5
1893	1.3	1.3	1.3	1.3	1.3	1.3	0.5	1.1	1.3
1894	1.2	1.2	1.2	1.2	1.2	1.2	0.2	0.7	1.2
1895	2.4	2.4	2.4	2.4	2.4	2.4	-0.1	1.2	2.4
1896	1.7	1.7	1.7	1.7	1.7	1.7	0.5	1.5	1.7
1897	2.1	2.1	2.1	2.1	2.1	2.1	0.7	2.1	2.1
1898	2.2	2.2	2.2	2.2	2.2	2.2	0.7	2.2	2.2
1899	2.1	2.1	2.1	2.1	2.1	2.1	0.6	2.1	2.1
1900	1.8	1.8	1.8	1.8	1.8	1.8	0.7	1.8	1.8
1901	1.7	1.7	1.7	1.7	1.7	1.7	0.1	0.9	1.7
1902	2.3	2.3	2.3	2.3	2.3	2.3	0.0	1.2	2.3
1903	3.2	3.2	8.9	3.2	3.2	3.2	-1.8	-0.5	5.7

Year	New share issues			Retained earnings			Debt		
	0.67 APW	APW	Top	0.67 APW	APW	Top	0.67 APW	APW	Top
1904	2.6	2.6	6.9	2.6	2.6	2.6	-0.2	-0.2	4.5
1905	3.4	3.4	9.3	3.4	3.4	3.4	-0.5	-0.5	6.0
1906	3.4	3.4	9.3	3.4	3.4	3.4	-0.5	-0.5	6.0
1907	4.0	4.0	11.4	4.0	4.0	4.0	-0.9	-0.9	7.3
1908	3.6	3.6	9.2	3.6	3.6	3.6	-0.1	-0.1	6.1
1909	3.2	3.2	7.6	3.2	3.2	3.2	0.3	0.3	5.1
1910	3.3	3.3	8.1	3.3	3.3	3.3	0.0	0.0	5.4
1911	3.9	4.7	12.4	3.9	3.9	3.9	-1.3	-0.5	8.0
1912	3.8	4.5	11.7	3.8	3.8	3.8	-1.1	-0.3	7.6
1913	3.3	3.9	37.2	3.3	3.3	3.3	-0.8	-0.2	35.2
1914	3.7	4.3	11.1	3.7	3.7	3.7	-0.9	-0.2	7.3
1915	6.4	7.9	21.9	6.4	6.4	6.4	-3.8	-2.2	13.5
1916	6.7	7.6	20.2	5.8	5.8	5.8	-2.6	-1.6	12.3
1917	9.2	10.6	29.2	7.1	7.1	7.1	-5.3	-3.8	16.8
1918	15.7	17.9	143.3	11.2	11.2	11.2	-23.9	-21.3	122.6
1919	11.1	11.5	57.2	8.7	8.7	8.7	-8.8	-8.3	45.5
1920	21.6	21.7	49.6	8.7	8.7	8.7	-3.6	-3.4	30.5
1921	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1922	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1923	10.2	10.2	24.5	4.7	4.7	4.7	0.4	0.4	17.3
1924	20.7	20.8	46.8	8.3	8.3	8.3	-1.3	-1.2	30.8
1925	23.7	23.8	53.0	9.2	9.2	9.2	-2.3	-2.2	33.8
1926	14.1	14.2	31.5	6.2	6.2	6.2	-0.5	-0.4	20.6
1927	18.2	18.3	40.3	7.5	7.5	7.5	-1.3	-1.3	25.7
1928	21.8	21.9	47.8	8.7	8.7	8.7	-2.9	-2.8	29.0
1929	16.4	16.4	35.9	7.0	7.0	7.0	-1.7	-1.7	22.1
1930	13.5	13.5	29.4	6.0	6.0	6.0	-0.8	-0.8	18.5
1931	15.6	15.6	32.4	6.7	6.7	6.7	-0.6	-0.6	20.1
1932	20.0	20.0	43.4	8.1	8.1	8.1	-1.1	-1.1	28.3
1933	17.3	17.3	39.8	7.2	7.2	7.2	-0.1	-0.1	27.6
1934	23.5	23.5	56.0	9.3	9.3	9.3	-1.8	-1.8	38.9
1935	25.5	25.5	61.6	9.8	9.8	9.8	-2.6	-2.6	42.6
1936	25.2	24.3	62.9	9.5	9.5	9.5	-1.1	-2.3	46.0
1937	28.9	27.8	72.0	10.5	10.5	10.5	-1.9	-3.3	52.2
1938	29.1	28.2	68.8	11.6	11.6	11.6	-3.8	-5.1	48.1
1939	27.1	26.1	83.1	1.8	1.8	1.8	-16.7	-18.2	60.8
1940	56.3	54.5	161.0	2.2	2.2	2.2	-62.0	-65.0	107.8
1941	54.6	52.7	159.9	2.2	2.2	2.2	-61.4	-64.4	107.8
1942	39.2	39.2	129.3	2.3	2.3	2.3	-50.0	-50.0	97.3
1943	24.8	24.8	82.9	2.3	2.3	2.3	-30.0	-30.0	63.3
1944	22.9	22.9	76.7	2.3	2.3	2.3	-27.3	-27.3	58.7
1945	22.8	22.8	76.7	2.3	2.3	2.3	-27.3	-27.3	58.7
1946	25.7	25.7	83.8	3.3	3.3	3.3	-28.9	-28.9	64.3
1947	31.2	34.1	102.2	3.5	3.5	3.5	-36.5	-31.6	77.9
1948	38.5	42.7	121.3	6.0	6.0	6.0	-68.1	-60.2	85.0

	New share issues			Retained earnings			Debt		
Year	0.67 APW	APW	Top	0.67 APW	APW	Top	0.67 APW	APW	Top
1949	27.6	32.2	81.9	6.0	6.0	6.0	-42.7	-34.1	58.0
1950	30.9	35.1	90.4	6.0	6.0	6.0	-46.3	-38.6	63.8
1951	75.6	84.6	206.5	20.0	20.0	20.0	-95.3	-78.5	147.6
1952	86.0	89.2	145.8	54.3	54.3	54.3	2.4	8.5	116.4
1953	61.1	63.6	90.8	44.4	44.4	44.4	15.6	20.4	72.2
1954	53.2	59.0	87.3	33.5	33.5	33.5	0.9	12.1	65.9
1955	65.8	72.5	105.0	43.4	43.4	43.4	-5.5	8.5	75.7
1956	83.2	87.2	125.7	52.4	52.4	52.4	-12.9	-3.8	84.1
1957	81.4	85.7	122.0	51.8	51.8	51.8	-10.7	-0.9	82.2
1958	74.6	80.2	118.0	41.6	41.6	41.6	-26.1	-13.1	74.4
1959	61.1	66.4	91.7	35.8	35.8	35.8	-11.6	0.7	59.8
1960	71.0	78.5	114.7	34.4	34.4	34.4	-3.1	11.5	82.1
1961	58.0	64.9	98.4	32.1	32.1	32.1	0.0	12.6	73.0
1962	71.4	76.6	117.5	35.6	35.6	35.6	1.9	11.5	85.8
1963	66.2	70.8	106.3	35.4	35.4	35.4	6.2	14.5	78.9
1964	67.9	77.1	107.8	36.0	36.0	36.0	6.6	23.4	79.9
1965	77.5	84.9	123.4	39.1	39.1	39.1	4.7	18.6	90.2
1966	90.0	95.7	137.2	50.3	50.9	55.7	10.9	21.7	100.3
1967	80.3	84.4	116.8	47.6	48.1	52.0	23.2	30.3	88.1
1968	71.6	75.0	102.2	44.7	45.2	48.7	24.1	30.0	78.2
1969	66.8	69.8	94.2	43.1	43.5	46.8	24.2	29.6	72.7
1970	96.6	112.2	137.9	55.7	56.3	60.5	24.5	34.2	112.0
1971	87.7	105.7	151.9	55.3	57.2	62.2	-3.2	31.0	118.6
1972	92.1	113.7	142.8	55.2	57.6	60.9	16.9	58.0	113.6
1973	91.4	125.1	148.7	55.9	59.5	62.2	8.2	72.7	118.0
1974	115.0	149.8	179.4	65.9	69.1	72.2	21.4	83.7	141.6
1975	123.7	143.3	184.4	67.2	69.1	73.4	31.0	70.0	151.5
1976	113.8	147.5	187.5	51.2	56.3	62.7	5.3	72.5	152.3
1977	105.6	151.6	199.8	51.2	57.9	65.4	-24.4	68.6	165.9
1978	99.9	137.3	193.4	50.5	56.1	65.2	-28.0	48.9	164.2
1979	103.0	130.5	171.0	70.2	75.2	82.9	19.4	72.8	151.3
1980	113.8	154.1	219.3	52.7	57.9	66.9	-34.0	47.8	180.3
1981	120.5	145.0	205.3	71.8	75.4	84.9	0.2	50.4	173.4
1982	108.3	134.3	179.9	72.5	76.9	85.2	11.9	63.7	154.3
1983	118.6	141.5	195.8	88.0	92.2	102.9	13.0	58.8	167.6
1984	101.5	127.9	175.3	79.9	84.5	93.6	-19.3	38.0	140.6
1985	92.0	118.3	167.1	72.7	77.3	86.6	-9.0	42.0	136.3
1986	92.7	99.5	140.3	70.1	71.5	80.2	29.0	41.6	117.4
1987	90.1	99.7	136.3	69.6	71.5	79.3	24.2	41.9	110.0
1988	110.7	110.7	148.8	75.0	75.0	82.6	42.5	42.5	115.1
1989	108.4	108.4	148.0	72.8	72.8	80.4	39.8	39.8	112.2
1990	103.5	131.0	152.6	58.7	62.9	66.3	25.3	71.4	107.6
1991	84.8	84.8	84.8	65.5	65.5	65.5	42.2	42.2	42.2
1992	44.8	44.8	44.8	43.4	43.4	43.4	27.9	27.9	27.9
1993	50.7	50.7	50.7	45.8	45.8	45.8	29.3	29.3	29.3

	New share issues			Retained earnings			Debt		
Year	0.67 APW	APW	Top	0.67 APW	APW	Top	0.67 APW	APW	Top
1994	26.7	26.7	26.7	34.1	34.1	34.1	29.9	29.9	29.9
1995	61.8	61.8	61.8	46.1	46.1	46.1	30.2	30.2	30.2
1996	54.8	54.8	54.8	43.4	43.4	43.4	28.3	28.3	28.3
1997	55.2	55.2	55.2	43.5	43.5	43.5	28.4	28.4	28.4
1998	53.4	53.4	53.4	42.8	42.8	42.8	27.9	27.9	27.9
1999	53.1	53.1	53.1	42.6	42.6	42.6	27.8	27.8	27.8
2000	56.6	56.6	56.6	44.1	44.1	44.1	28.8	28.8	28.8
2001	59.0	59.0	59.0	45.1	45.1	45.1	29.5	29.5	29.5
2002	61.1	61.1	61.1	45.9	45.9	45.9	30.0	30.0	30.0
2003	58.7	58.7	58.7	44.9	44.9	44.9	29.4	29.4	29.4
2004	53.8	53.8	53.8	42.9	42.9	42.9	28.0	28.0	28.0
2005	53.5	53.5	53.5	42.8	42.8	42.8	28.0	28.0	28.0
2006	56.9	56.9	56.9	44.2	44.2	44.2	28.9	28.9	28.9
2007	44.7	44.7	44.7	28.7	28.7	28.7	14.7	14.7	14.7
2008	48.9	48.9	48.9	30.3	30.3	30.3	15.8	15.8	15.8
2009	35.5	35.5	35.5	24.4	24.4	24.4	13.5	13.5	13.5
2010	40.0	40.0	40.0	26.3	26.3	26.3	15.0	15.0	15.0

Note: Based on assumptions given in the text. APW and 0.67 APW refer to the marginal tax rate of an average production worker and a tax payer earning 0.67 times the income of an average production worker. Top is the highest tax rate.
Source: Own calculations.

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