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Did Income Taxes Bite?

Evidence from High-Income Earners in Sweden, 1915–1935

by

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Abstract: This thesis examines how early twentieth-century Swedish tax records were shaped by the interaction between progressive taxation, taxpayer behaviour and local assessment institutions. It does so by bringing a modern bunching framework, rarely applied in historical studies, to 20,830 individual-level observations from Swedish taxation lists for 1915, 1919, 1927 and 1935, including 7,942 observations transcribed for this thesis. This makes it possible to test whether recorded incomes display excess mass around selected marginal tax thresholds in a historical setting usually studied through aggregate top-income series. The results show limited but not absent evidence of bunching. Evidence consistent with bunching appears at three thresholds: 1919 at 6,000 kronor, 1919 at 10,000 kronor, and 1927 at 3,000 kronor, while the remaining thresholds provide weaker or statistically inconclusive evidence. This suggests that precise threshold-based adjustment existed in some cases, but was not a general or stable feature of high-income tax reporting in the selected Swedish tax records.

The thesis argues that this uneven pattern must be understood historically. Early Swedish income taxation combined formal progressive thresholds with local assessment procedures, documentation requirements and administrative review. Reported income was therefore shaped not only by economic incentives, but also by how income was declared, assessed and recorded. The findings do not imply that taxation had no effect, but they provide little support for the view that Sweden's early twentieth-century decline in recorded top incomes was driven by systematic threshold-based adjustment in reported income.

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1 Introduction

Much of the long-run inequality literature relies on tax records to reconstruct the evolution of top incomes. These records have transformed our understanding of twentieth-century inequality by making it possible to trace income concentration over long periods and across countries (Atkinson, Piketty & Saez, 2011; Piketty, 2003; Piketty & Saez, 2006). Yet tax records also raise a central interpretive problem. Because they are produced by tax systems, changes in recorded top incomes may reflect not only changes in underlying economic resources, but also changes in how income was defined, declared, taxed, or strategically reported. The top-income literature has therefore repeatedly warned that tax-based series must be interpreted in light of changing income definitions, tax units, exemptions, avoidance opportunities, evasion, and behavioural responses to tax law (Atkinson, 2004; Roine & Waldenström, 2010; Saez, Slemrod & Giertz, 2012).

This problem is especially important for interpreting historical inequality decline. If high-income taxpayers responded to progressive taxation, then part of the observed fall in top income shares could reflect reporting behaviour rather than a real decline in economic concentration. This does not mean that tax data are unreliable; rather, it means that tax records capture the interaction between economic inequality and the fiscal institutions through which income became visible to the state. Recent work on taxation and inequality makes the distinction between observed income inequality and actual inequality: progressive taxation may reduce reported inequality more than underlying inequality if taxpayers respond through avoidance, evasion, income shifting, or changes in reporting behaviour (Duncan & Sabirianova Peter, 2012; Feldstein, 1995; Saez et al., 2012). The question is therefore not only whether top incomes declined, but whether part of that decline reflects the way income entered the tax record.

Standard models of taxable income start from a simple behavioural intuition: taxpayers generally prefer to pay less tax rather than more. In a progressive tax system, marginal tax rates increase at specific thresholds, and the bunching framework provides an *ex post* method of detecting whether taxpayers responded to these marginal tax incentives. If taxpayers do respond to these thresholds, we should expect unusually many observations at or just below the point where the higher tax rate begins, creating excess mass¹ in the income distribution around the threshold (Kleven, 2016; Saez, 2010). However, the existence of a tax threshold does not automatically imply a behavioural response. Bunching depends on taxpayers being able to adjust reported income, and is therefore often concentrated among those with more flexible income reporting² (see e.g. Bastani & Selin, 2012; Chetty, Friedman, Olsen & Pistaferri, 2011; Chetty, Looney & Kroft, 2009; Saez, 2010).

This distinction motivates the empirical question of this thesis. If part of the decline in recorded top incomes reflected behavioural responses to taxation, such responses should leave traces in the distribution of reported income around tax thresholds. This thesis examines whether such responses are visible among high-income earners in Sweden between 1915 and 1935, a period of rising taxes, the buildup of the welfare state and declining income inequality. Using individual-level income data from Swedish taxation lists³ for 1915, 1919, 1927 and 1935, it asks:

¹Excess mass measures how many more taxpayers are observed near the tax threshold than would be predicted by the counterfactual income distribution.

²Flexible income reporting refers here to the possibility that reported income could differ from underlying economic income because of deductions, timing, valuation practices, income classification, or local assessment procedures.

³*taxeringslängder*

To what extent is there evidence of bunching at marginal tax thresholds among high-income earners in Sweden between 1915 and 1935?

Two follow-up questions guide the interpretation of the results. First, if high-income earners did not systematically bunch around marginal tax thresholds, was this because the Swedish state was effective at monitoring taxpayers, or because broader social and institutional forces limited tax responsiveness? Secondly, what do the observed behavioural responses to marginal tax thresholds imply for our understanding of the decline in income inequality in the early 20th century?

The taxation lists are sampled from three high-income areas: Djursholm, Saltsjöbaden and Östermalm. These areas are sampled deliberately in order to capture taxpayers who were more likely to be located near progressive tax thresholds and therefore more likely, in principle, to respond to marginal tax incentives. The dataset combines previously digitised material used by [Bengtsson & Molinder, 2025](#), covering 12,888 individuals, with new manual transcription carried out for this thesis. The newly transcribed material includes Saltsjöbaden in 1915, 1919, 1927 and 1935, as well as Djursholm and Östermalm in 1919, adding 7,942 individual observations. In total, the analysis is based on 20,830 individual taxpayer observations. The data construction is an important contribution in itself, as it allows taxpayer behaviour around marginal tax thresholds to be examined directly rather than inferred from aggregate top-income series.

The analysis proceeds in three stages, each corresponding to one of the research questions. First, it establishes whether there is evidence of bunching at marginal tax thresholds among high-income earners. Secondly, it examines how any observed patterns, or lack thereof, can be explained by the conditions required for behavioural response, including the strength of marginal incentives, taxpayers' knowledge of the tax system and their ability to adjust reported income. Thirdly, it considers the broader implications of the findings for the interpretation of Swedish inequality decline.

By focusing on high-income earners – individuals with both the greatest incentives and the greatest capacity to adjust reported income – the analysis considers a “most-likely case” for bunching behaviour. The analysis presented in this thesis shows limited systematic evidence of bunching at marginal tax thresholds. Rather than treating this absence as merely a null result, the thesis uses it as a starting point for a broader historical question: why did high-income earners not appear to respond in the way that standard models of taxable income would predict? The answer may lie not only in economic incentives, but also in the administrative capacity of the Swedish state, the visibility of income, and the social norms surrounding taxation in early twentieth-century Sweden.

In doing so, the thesis brings together two strands of literature that are rarely integrated: the modern empirical literature on tax bunching and behavioural responses to income taxation, and the historical analysis of early twentieth-century fiscal institutions. While existing research has documented bunching behaviour in contemporary settings, less attention has been paid to whether such responses emerge in historical contexts characterised by different informational environments, administrative capacities, and state–society relations. The contribution is therefore methodological, empirical, and conceptual. Methodologically, the thesis extends the bunching framework beyond its usual contemporary setting by applying it to individual-level historical tax records. Empirically, it combines previously digitised material with 7,942 newly transcribed observations, making it possible to test for clustering around marginal tax thresholds in a setting usually studied through aggregate top-income series. Conceptually, it treats weak or uneven bunching

not merely as a null finding, but as evidence about the institutional conditions under which tax incentives became visible in the historical record.

The thesis proceeds as follows. Chapter 2 reviews the relevant literature on taxation, top incomes and behavioural responses to marginal taxation, and introduces the theoretical framework underlying the analysis. Chapter 3 presents the historical and institutional context, describes the taxation system and assessment procedures, and introduces the source material and dataset construction. Chapter 4 outlines the empirical strategy and explains the bunching framework used to identify excess mass around tax thresholds. Chapter 5 presents the empirical results and discusses their interpretation in relation to incentives, administrative institutions and the broader inequality literature. Chapter 6 concludes by summarising the findings, discussing their implications and suggesting directions for future research.

2 Theory and previous literature

This section situates the thesis within two related bodies of literature. The first concerns the use of tax records to study top incomes and long-run inequality. This literature shows why tax data are valuable for historical research, but also why they must be interpreted carefully. The second concerns behavioural responses to taxation, especially whether taxpayers adjust reported income around marginal tax thresholds. Together, these perspectives provide the framework for analysing whether high-income earners in early twentieth-century Sweden responded visibly to the tax system.

2.1 Taxation, top incomes and inequality

Modern inequality research has been transformed by the renewed use of administrative tax records to construct long-run series of top income shares. The revival began with Piketty's work on France and was subsequently extended to a wide range of countries, building on Kuznets' earlier use of income tax records to estimate top income shares in the United States (Atkinson et al., 2011; Piketty, 2003). The importance of this approach is primarily historical: tax records make it possible to study inequality over much longer periods than household surveys⁴, which are usually limited to the post-war era. They are also particularly valuable for studying the upper tail of the income distribution, where small groups can account for a disproportionate share of total income, wealth and tax liability (Atkinson, 2004; Atkinson et al., 2011). The basic method is to estimate the income received by top fractiles, such as the top 10, 1 or 0.1 per cent, and relate these amounts to reference totals for population and income. Because early income taxes often covered only a minority of households, researchers must construct external control totals from national accounts, population statistics and other aggregate sources (Piketty, 2003; Piketty & Saez, 2006).

Comparative studies show that top income shares declined sharply in many countries during the first half of the twentieth century (Atkinson et al., 2011; Piketty, 2003; Piketty & Saez, 2006; Roine & Waldenström, 2010). This decline was not simply a general compression of all incomes, but was closely connected to falling capital incomes, the erosion of large fortunes, major economic shocks and the expansion of progressive

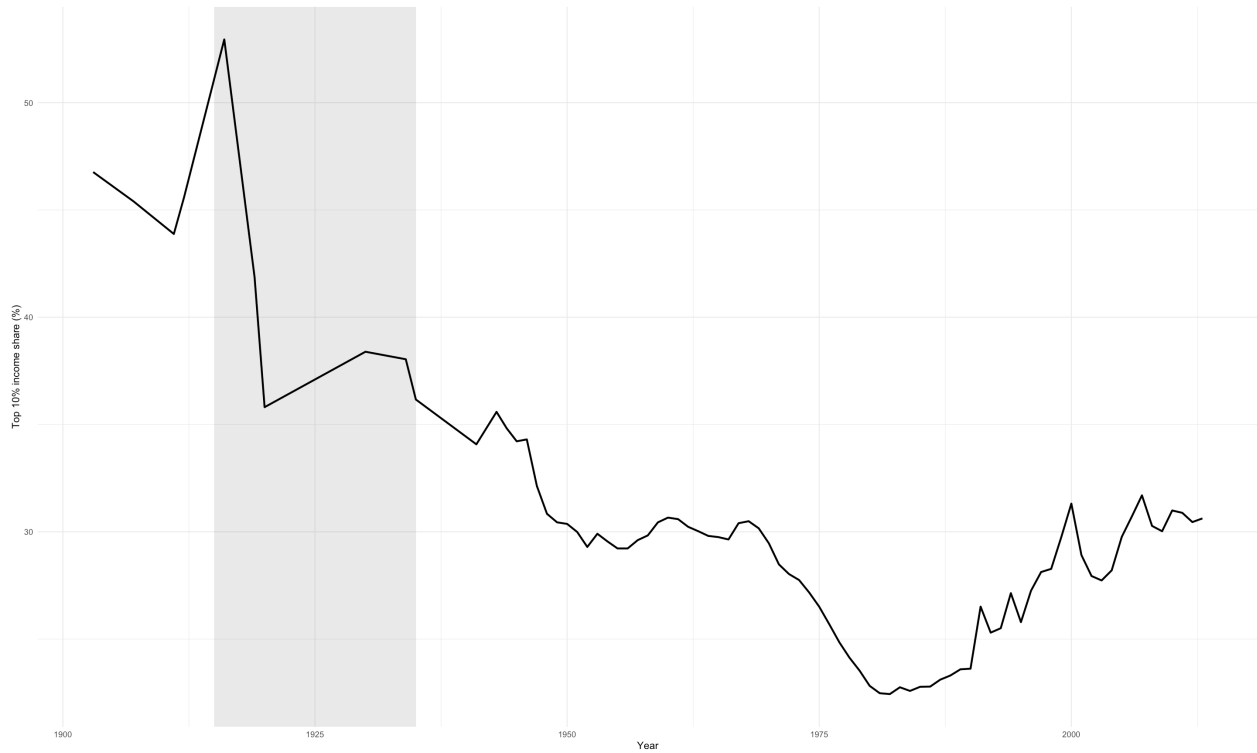
⁴Survey data are also often less suitable for studying the upper tail because high-income and high-wealth individuals are both few in number and less likely to respond to surveys, making them difficult to capture reliably.

taxation. For Sweden, [Roine & Waldenström, 2008](#) and [2010](#) show that the fall in top income shares was driven especially by the top percentile and by changes in capital income.

At the same time, tax-based inequality series must be interpreted carefully (see e.g. [Atkinson, 2004](#); [Atkinson et al., 2011](#); [Piketty & Saez, 2006](#); [Roine & Waldenström, 2008](#)). Tax records measure income as it appears within a tax system, not income in a neutral statistical sense. Changes in tax units, income definitions, exemptions, capital-gains rules, reporting incentives and avoidance opportunities can affect what appears in the data ([Atkinson, 2004](#); [Saez et al., 2012](#)). This is particularly important for top incomes, since high-income taxpayers often have greater access to income shifting, capital-income timing and legal tax planning ([Atkinson et al., 2011](#); [Pirttilä & Selin, 2011](#)). The literature therefore offers two related insights. First, tax records are indispensable for reconstructing long-run inequality ([Atkinson et al., 2011](#); [Piketty & Saez, 2006](#)). Second, they are themselves institutional artefacts: they reflect both the distribution of economic resources and the rules, incentives and administrative capacities through which those resources were reported to the state. This dual character is central to the present thesis, which treats Swedish tax records not only as evidence of inequality, but also as evidence of how progressive taxation may have shaped reported income.

Using the work of [Roine & Waldenström, 2008](#) and [Roine & Waldenström, 2010](#) Figure 1 places the thesis period in the broader development of Swedish income inequality. The top decile income share was high in the early twentieth century but declined substantially during the decades covered by this study. This makes the period especially relevant for examining possible mechanisms behind falling inequality. If progressive taxation contributed to the decline by changing how high-income taxpayers reported income, this could appear as bunching around marginal tax thresholds.

Figure 1: Top Decile Income Share in Sweden, 1903-2013



The shaded area indicates the study period, 1915-1935.

The period examined in this thesis coincides with a marked decline in top income shares. [Henrekson & Stenkula, 2015](#) show that the tax-to-GDP ratio increased during World War I and the early 1920s, remained around ten percent during the 1920s, and began rising more continuously from around 1930. This matters because recent micro-level studies show that Swedish inequality and top incomes were already declining before the full post-war high-tax expansion of the welfare state ([Bengtsson & Molinder, 2024](#)). It is therefore necessary to examine whether progressive taxation contributed to falling inequality through behavioural responses in reported income, or whether the decline is better explained by other structural changes, such as falling capital incomes, changes in wealth concentration, or broader economic shocks.

This thesis builds on the top-income literature by asking a different but related question. Rather than re-constructing aggregate income shares, it uses individual-level tax records to examine whether high-income taxpayers responded to the structure of the tax system itself. In doing so, it connects the historical inequality literature to the literature on behavioural responses to taxation, asking whether income recorded in Swedish tax sources reflected strategic adjustment around marginal tax thresholds or whether reported incomes appear comparatively unresponsive to such incentives.

2.2 Behavioural Responses to Marginal Taxation

A basic assumption in the literature on taxation is that taxpayers prefer to pay less tax rather than more. When marginal tax rates increase, taxpayers may therefore respond not only by changing how much they work, but also by changing how income is reported, timed, classified or shifted across tax bases (Feldstein, 1995; Saez et al., 2012). This broadens the traditional public-finance focus on labour supply alone (see e.g. Bastani & Selin, 2012; Chetty et al., 2011; Jakobsen & Sogaard, 2022). Instead of treating the labour supply elasticity⁵ as the central behavioural parameter (Saez et al., 2012), the elasticity of taxable income⁶ focuses on reported taxable income (Bastani & Selin, 2012; Chetty et al., 2011; Jakobsen & Sogaard, 2022). A change in taxable income may reflect changes in real economic activity, but it may also reflect changes in reporting, classification or income shifting across tax bases (Jakobsen & Sogaard, 2022; Saez et al., 2012). The elasticity of taxable income is therefore not a fixed structural parameter, but depends on the design of the tax system, the breadth of the tax base, the availability of deductions and the opportunities for avoidance (Saez et al., 2012).

This source-critical perspective is especially important when studying behavioural responses to taxation. Piketty, Saez & Stantcheva, 2014 argue that top marginal tax rates may affect top income shares through several channels, including real labour-supply responses, tax avoidance and compensation bargaining. High marginal tax rates may therefore reduce inequality not only through redistribution after income has been earned, but also by changing incentives and behaviour before income enters the tax record. The issue is thus not only that tax records are institutionally shaped, but that taxpayers themselves may respond to the incentives created by those institutions. If high-income taxpayers respond strongly to marginal taxation, the income distribution observed in tax records may partly reflect behavioural adjustment rather than underlying economic resources alone (Feldstein, 1995; Saez et al., 2012). This makes taxable-income responses particularly relevant for historical inequality research, while also making tax records useful for studying whether reported income responded directly to changes in tax law. This point motivates the present thesis.

Existing work on Sweden gives reasons to take both possibilities seriously. Roine & Waldenström, 2010 note that tax avoidance and evasion are a general problem in studies based on personal tax returns, and that Swedish evidence on this issue is scattered. At the same time, recent micro-level work using Swedish taxation lists shows that these records can provide detailed evidence on the composition, income sources and changing position of top earners, while still requiring attention to the incentives and limitations built into the tax system (Bengtsson & Molinder, 2025). Historical work also shows that avoidance, evasion and tax resistance were not confined to modern tax systems, but have long formed part of the relationship between taxpayers and fiscal authorities (Schönhärl, Hürlimann & Rohde, 2023). The available evidence suggests that evasion may have been concentrated at the top of the distribution, but relatively small in relation to total income (Roine & Waldenström, 2010). At the same time, the extent of evasion, the targeting of high-income groups, and the effectiveness of enforcement remain uncertain.

Sweden is therefore a useful case for studying behavioural response: high-income earners may have faced incentives to adjust reported income, but it remains unclear whether they perceived these incentives as important, understood how to act on them, or considered adjustment worthwhile (see e.g. Pirttilä & Selin,

⁵Labour supply elasticity refers to how strongly people change the amount they work when the financial return to work changes.

⁶The elasticity of taxable income refers to how strongly reported taxable income changes when tax rates change (Agostini et al., 2026; Bastani & Selin, 2012).

2011; Roine & Waldenström, 2008). Their ability to adjust reported income also depended on the structure of the tax system, the visibility of the rules, the type of income they received, and the administrative procedures through which income was declared, assessed and taxed (Schönhärl et al., 2023). Reported income should therefore not be treated as a neutral measure of underlying economic resources. The question is not only whether higher marginal tax rates created incentives to adjust income, but whether those incentives were clear and feasible enough to leave visible traces in the tax record. The next section turns to one way of observing such responses directly: bunching at marginal tax thresholds.

2.2.1 Responses to tax kinks

The bunching framework offers one way to study whether taxpayers respond to tax thresholds (Bertanha, McCallum & Seegert, 2023). In a progressive income tax system, the marginal tax rate rises when income passes certain points (Bastani & Selin, 2012; Kleven, 2016). If taxpayers notice these thresholds and are able and willing to adjust their reported income, some may report income just at or below the point where the higher tax rate begins. Saez argues that this type of clustering, or bunching, can be used as evidence that taxpayers respond to marginal tax incentives (Saez, 2010). The basic intuition is simple. If taxpayers do not respond to a threshold, the income distribution should be relatively smooth around it (see e.g. Bastani & Selin, 2012; Bertanha et al., 2023). If they do respond, there may be an unusually large number of taxpayers at or just below the threshold, compared with the surrounding income levels.

Identifying bunching requires enough observations close to the threshold to distinguish excess mass from random variation in the local income distribution (Bastani & Selin, 2012; Kleven, 2016). This is why bunching studies usually rely on large administrative tax datasets rather than surveys or small samples. In historical settings, such detailed individual-level data are rarely available. The taxation lists used in this thesis are therefore important because they make it possible to examine local income distributions around statutory thresholds directly.

The absence of bunching can arise through several mechanisms. First, incentives may be too weak (Chetty et al., 2011; Kleven, 2016). A statutory kink only creates bunching if the gain from remaining below the threshold is large enough to justify adjustment. If the marginal tax increase is small, if the tax base is broad and difficult to manipulate, or if the tax saving from small changes in reported income is limited, taxpayers may have little reason to adjust precisely around the threshold. In this case, non-bunching does not imply that taxpayers were unaware of taxation; it may simply indicate that the relevant kink was not economically important enough to generate a visible response. This mechanism will be referred to as “incentives”.

Second, knowledge of the threshold may not be widespread or precise enough (Chetty et al., 2011; Kostøl & Myhre, 2021; Saez, 2010). Bunching requires more than a general awareness that taxes exist or that higher incomes are taxed more heavily. Taxpayers must know where the relevant threshold lies, understand the marginal consequences of crossing it, and be able to act on this information before income is assessed. If taxpayers face complex tax schedules, uncertainty about deductions, or limited access to tax advice, they may not respond precisely even when formal incentives exist. In this sense, non-bunching may reflect limited salience rather than absence of tax incentives. This mechanism will be referred to as “salience”.

Third, taxpayers may be too tightly controlled for precise adjustment to be feasible (Chetty et al., 2011;

Kleven, 2016; Saez, 2010). This mechanism concerns the institutional conditions under which income is reported and assessed. If income is visible to employers, local tax boards or state authorities, or if reported income must be supported by accounts, declarations and third-party information, taxpayers may have limited room to choose an income just below a threshold. This is especially relevant for wage- and salary-earners, whose income is often fixed by employment contracts and easier for authorities to verify. For these taxpayers, strong control may prevent bunching even if incentives and knowledge are present. This mechanism will be referred to as “administrative control”.

A related but distinct version of this mechanism concerns the self-employed, business owners and taxpayers with capital income (Bastani & Selin, 2012; Chetty et al., 2011). These groups may have more scope to affect the timing, classification or reporting of income. For them, the absence of bunching is less likely to reflect complete administrative control and more likely to reflect a combination of modest incentives, limited kink salience, adjustment costs, or broader forms of tax planning that did not require locating reported income precisely below a statutory threshold. Non-bunching should therefore not be interpreted as absence of behavioural response in general. It only indicates that one particular form of response – precise local adjustment around a tax kink – is not visible in the income distribution.

These three mechanisms are not mutually exclusive. Weak incentives, limited salience and strong administrative control may reinforce each other. A taxpayer who faces only a small marginal-rate increase, does not know the precise threshold, and reports income through a locally assessed declaration system is unlikely to generate visible bunching. The empirical implication is that absence of bunching should be interpreted carefully. It may indicate that taxpayers did not respond to the tax system, but it may also indicate that the conditions required for this specific type of response were not present.

These limitations are particularly important in a historical setting. Early twentieth-century taxpayers may have faced formal marginal tax thresholds, but their ability to respond depended on the flexibility of income reporting, the visibility of the tax schedule, local assessment practices and norms surrounding compliance. Absence of bunching should therefore not be read as evidence that taxation had no effect. It only tells us about one specific type of response: whether taxpayers adjusted reported income precisely around tax thresholds. If clear bunching is absent, this suggests that this particular response was limited, difficult, or not visible in the tax records.

3 Context and Data

This chapter presents the historical, institutional and empirical setting for the analysis. It first situates the selected years within the development of Swedish progressive taxation, then describes the tax thresholds and assessment procedures relevant for the bunching analysis. It then explains the choice of high-income earners and presents the source material, digitisation process and descriptive statistics.

3.1 Progressive taxation in a developing fiscal state

The period examined in this thesis belongs to a formative stage in the development of modern Swedish income taxation. The selected cross-sections correspond to available taxation lists, but they also capture moments when the tax system was changing in ways that matter for the analysis. Between the 1910s and the late 1930s, Swedish income taxation moved from a relatively modest system, with low marginal rates and a combined income-and-wealth base, towards a progressive system shaped by wartime taxation and Depression-era fiscal pressures (Du Rietz, Johansson & Stenkula, 2013; Henrekson & Stenkula, 2015; Roine & Waldenström, 2008, 2010). The period is therefore well suited to studying whether marginal tax thresholds left visible traces in reported income before the emergence of the post-war high-tax welfare state.

The First World War added a layer of fiscal pressure (Besley & Persson, 2009; Du Rietz et al., 2013). The *värnskatt* was introduced as an extraordinary defence-related tax on income and wealth, justified by the need to finance increased military expenditure (Besley & Persson, 2009; Dahlström, 2025; Du Rietz et al., 2013). The 1914 and 1939 *värnskatter*, the 1915 and 1940 *krigskonjunkturskatter*, and the 1952 *konjunkturskatt* all belong to this wider tradition of crisis-related taxation (Dahlström, 2025). For this thesis, the 1915 cross-section is therefore important: it captures taxpayers shortly after the introduction of an additional fiscal instrument directed at those with greater assessed ability to pay (see e.g. Dahlström, 2025; Norrman, 1918). The interwar period brought further consolidation (Du Rietz et al., 2013). The 1920 reform formalised a permanent progressive architecture while remaining “proportional in practice” for 98% of taxpayers due to broad first brackets (Du Rietz et al., 2013). The reform introduced flexible rates via a withdrawal percentage and established that local taxes were deductible from the state income tax base. While foundational, the system was far less progressive than the post-WWII era, characterised by lower top marginal rates and higher relative income thresholds for the highest brackets. This distinction is also supported by later evidence on Swedish tax evasion. Giddey & Wendschlag, 2022 show that international tax evasion became a more visible political and administrative problem in Sweden in the 1970s, when high tax rates, capital mobility and offshore banking created stronger incentives and opportunities for avoidance.

The thresholds used in the bunching analysis were selected on the basis of secondary literature on historical Swedish taxation and reforms that introduced increases in marginal tax rates, and should be read as part of the identification strategy. Thresholds were identified by examining the statutory tax brackets for each year and selecting income levels where a clear marginal tax kink occurred. Preference was given to thresholds with sufficiently large changes in marginal tax rates and with enough observations around the cutoff to make bunching estimation feasible.

Table 1 summarises the institutional thresholds used in the bunching analysis. *Actual MTR change* is the percentage-point increase in the combined effective marginal tax rate at the threshold, based on statutory state, local, and temporary taxes. For years after 1920, local taxes are deductible from the state tax base⁷ (see Stenkula, Johansson & Du Rietz, 2014). For 1915 and 1919, before deductibility was introduced, rates are summed directly.

⁷so that $MTR = \tau_L + (1 - \tau_L) \sum_j \tau_{S,j}$

Table 1: Thresholds and marginal tax kinks used in the bunching analysis

Year	Source	Basis	Threshold	MTR below	MTR above	Actual MTR change
1915	Kungl. Maj:t, 1914	<i>Värnskatt</i>	5,000 kr	1.5%	2.5%	1%
1919	Du Rietz et al., 2015	Income-tax schedule	6,000 kr	2.2%	3.0%	0.8%
1919	Du Rietz et al., 2013	<i>Värnskatt</i>	10,000 kr	0%	2.5%	2.5%
1927	Du Rietz et al., 2015	Local progressive income tax	3,000 kr	0%	0.5%	0.44%
1927	Du Rietz et al., 2015	Local progressive income tax	10,000 kr	1%	2%	2.33%
		Ordinary State Tax	10,000 kr	3%	4%	
1935	Du Rietz et al., 2013	Extra state tax	6,000 kr	0%	0.5%	0.45%
1935	Du Rietz et al., 2013	Ordinary state tax	10,000 kr	1%	1.7%	1.53%

Notes: Thresholds are reported in nominal kronor. MTR refers to the marginal tax rate immediately below and above the selected threshold. For 1915, the rates refer only to the marginal *värnskatt* component, not the full combined marginal tax rate including ordinary state and local taxation.

Although the *värnskatt* was enacted in 1914, it is relevant for the 1915 taxation lists because the instalment was due in that year ([Dahlström, 2025](#); [Kungl. Maj:t, 1914](#)). The *krigskonjunkturskatt*, however, is not included in the bunching analysis because liability was based on the increase in wartime income relative to a pre-war baseline from 1912 and 1913. Identifying taxpayer-specific thresholds would therefore require individual-level data for those baseline years, which are not available in the current dataset. Between 1920 and the late 1930s, marginal tax rates rose and the tax system became more differentiated, while the first brackets remained broad and much of the population still faced relatively low marginal rates. By the 1930s, taxation was becoming more closely connected to the fiscal demands of a growing public sector ([Du Rietz et al., 2013](#); [Henrekson & Stenkula, 2015](#)). The tax-to-GDP ratio, which had been low and relatively stable in the earlier period, began to rise more sharply from the 1930s onwards. The years analysed in this thesis therefore span distinct fiscal moments. These differences matter because the incentive to respond to taxes was not constant over time. A lack of measured response in 1915 may have a different interpretation from a lack of bunching in 1935, when progressive taxation was more established and the fiscal environment more developed. Between 1915 and the late 1930s, Sweden was still constructing the fiscal institutions that later enabled much higher levels of taxation. If high-income taxpayers adjusted reported income in response to marginal thresholds, such behaviour may already be visible in the taxation lists. If they did not, the absence of bunching must be interpreted in relation to the specific institutional design of early Swedish taxation: progressive but still developing, increasingly capable but not yet fully transformed, and shaped by both ordinary tax reform and extraordinary crisis taxation.

3.2 Assessment Procedures

Tax records should be understood as the output of an administrative assessment process rather than as passive reflections of self-reported income. In such systems, recorded taxable income was shaped not only by taxpayers' declarations, but also by assessment practices, local tax authorities, and subsequent review procedures (see [Riksdagen, 1910](#)). This matters for the interpretation of bunching. If taxpayers faced both formal declaration duties and local administrative scrutiny, their ability to adjust reported income precisely around tax thresholds may have been more limited than in a setting based solely on anonymous self-reporting. For the earlier part of the period, the relevant assessment framework was established through

the 1910 tax reform (Kungl. Finansdepartementet, 1910; Riksdagen, 1910), which formalised the tax filling system. Taxation of income, wealth and real-estate values was administered through *taxeringsnämnder* and *prövningsnämnder*. The former operated as local assessment boards, generally organised at the municipal level, while the latter functioned as county-level review bodies responsible for reassessment and appeals. Tax liability was therefore not determined solely by individual declarations. Reported income entered an administrative process involving classification, review and assessment, meaning that the taxation lists recorded assessed taxable income rather than unprocessed self-reported income. Taxpayers who met specified income or wealth conditions were obliged to submit declarations, while others could be required to do so on request. Declarations had to be submitted *på heder och samvete*⁸ and include information on real estate, income-generating services or offices, business or occupational activity, income from each source, taxable wealth and claimed deductions (Riksdagen, 1910). Taxpayers were therefore required to classify income by source rather than report only a single total. For high-income earners, especially those with property, business income or capital income, the declaration process created a relatively detailed administrative record of economic position.

These declarations did not stand alone. Assessment authorities could request additional information where declarations were missing, incomplete or insufficient. The chair of the local tax board and the Crown's representative in the review board could require declarations to be submitted or supplemented, and assessment authorities could use information from public offices, institutions and court records where such material was relevant for taxation (Kungl. Finansdepartementet, 1910). Local tax boards also had a mixed administrative and local character: the chair and one member were appointed by the county authority, while other members were chosen locally, with different taxpayer groups represented as far as possible (Kungl. Finansdepartementet, 1910). The early Swedish assessment system therefore combined self-declaration, administrative verification and local knowledge. For the interpretation of bunching, this matters because reported income was not simply chosen by taxpayers; it was produced through a system of declaration, documentation and assessment.

The post-1928 assessment system, relevant for the 1935 cross-section, retained and formalised many of these features. Under the 1927 proposal for the new *taxeringsförordning*, annual assessment was carried out in the first instance by *taxeringsnämnder*, with *prövningsnämnder* above them (Kungl. Maj:t, 1927). The local board included a chair appointed by the county authority, a *kronoombud*, a *kommunombud*, and locally elected members, and the rules again emphasised representation of different taxpayer groups and knowledge of different parts of the district (Kungl. Maj:t, 1927). Self-declarations were still to be submitted *på heder och samvete*, and taxpayers could be required to provide additional information beyond the standard declaration form. Those required to keep accounts could be asked to provide bookkeeping records and related documents for inspection. Public authorities and employers were required to provide information on wages, salaries and pensions, while companies and other organisations could be required to report dividends, partnership income and other payments relevant for taxation (Kungl. Maj:t, 1927). These provisions reinforced the role of formal rules, locally situated knowledge and third-party information in the assessment process.

Enforcement mechanisms further limited the assessment system's dependence on voluntary compliance alone. Under the earlier framework, failure to submit required declarations or supporting material could lead to loss of appeal rights, fines, and notation of the failure in the tax roll. Knowingly false information

⁸on one's honour

could also be fined, with higher penalties where the false statement caused the taxpayer to avoid assessment or to be assessed too low (Kungl. Finansdepartementet, 1910). The 1927 framework similarly provided consequences for failure to submit or complete a declaration, including loss of appeal rights, possible fines, and notation in the income roll (Kungl. Maj:t, 1927). Contemporary commentary suggests that this administrative framework was not merely formal. Davidson, 1934 described the 1928 income-tax legislation as having improved the declaration apparatus and the practical guidance available to taxpayers and tax authorities, while also noting that more complex income types remained difficult to define, classify and fix in amount. This reinforces the interpretation of tax records as assessed administrative outcomes rather than simple self-reports: the post-1928 framework strengthened control and standardisation, but did not remove all discretion or uncertainty from income assessment.

For the purposes of this thesis, the key implication is that early twentieth-century Swedish taxation was not based on self-reporting alone. The assessment process combined self-declaration, local tax boards, administrative review, third-party information, bookkeeping requirements and sanctions. Importantly, the 1927 reform makes it possible to examine whether changes in the assessment framework affected the administrative control condition relevant for bunching.

3.3 High-Income Earners as Most-Likely Responders

The empirical material used in this thesis is drawn from three high-income areas – Djursholm, Östermalm and Saltsjöbaden – rather than from a nationally representative sample of Sweden. This choice is deliberate. Since the aim of the thesis is to study high-income taxpayers, the geographical sample is centred on the Stockholm region, where wealth and high incomes were historically concentrated (see Appendix A in Bengtsson & Molinder, 2025). Following the sampling logic in Bengtsson & Molinder, 2025, the thesis includes both affluent suburbs and an affluent inner-city district. Djursholm and Saltsjöbaden represent elite suburban environments, whilst Östermalm represents an affluent inner-city setting. Saltsjöbaden was founded by members of the Wallenberg family as a refuge for the wealthy, and Djursholm has long been associated with prestige and wealth (Holmqvist, 2015 cited in Bengtsson & Molinder, 2025). Östermalm has been Stockholm’s most clearly upper-class inner-city district from the late nineteenth century onwards.

The aim is not to estimate the average behavioural response of all Swedish taxpayers, but to examine whether bunching is visible in settings where such behaviour should, in principle, have been more likely to appear. The selected areas are treated not as interchangeable observations, but as historically meaningful settings chosen because they are especially relevant to the theoretical expectation being tested (Ragin, 1997). In this sense, they can be understood as a “most-likely” case for bunching (Ragin, 1997; Ragin & Schneider, 2011). High-income taxpayers faced stronger incentives to consider marginal tax rates because they were more likely to be located near progressive thresholds (Pirttilä & Selin, 2011; Saez et al., 2012). They may also, in principle, have had greater scope to influence the timing, form or reporting of income than ordinary wage earners. If behavioural responses were important in early Swedish marginal taxation, it should therefore be more likely to appear in these areas than in the population as a whole.

At the same time, this argument should not be overstated. High-income status did not imply full control over reported income, since taxpayers still operated within the assessment system described above. The se-

lected areas should therefore be understood as relatively favourable settings for observing bunching rather than as settings in which bunching must necessarily occur. This makes the absence of responses informative. If high-income taxpayers did not cluster clearly below marginal tax thresholds, this suggests that the conditions required for visible threshold-based adjustment may have been limited even among taxpayers for whom the thresholds were most relevant. They remain the closest observable historical group in this thesis to the taxpayers found to bunch in modern studies, although the data do not allow separate analysis of self-employed taxpayers, business owners or capital-income recipients.

3.4 Source Material, Digitisation and Descriptive Statistics

The information available in the records varies somewhat across years and areas, but the core variables used in the analysis are comparable. The rolls generally include the taxpayer's name, location or address, income, and in many cases occupation or social title. The analysis uses the income measure recorded in the taxation lists, since the thresholds examined in the thesis are defined in relation to income. The data are treated as repeated cross-sections rather than as a panel. Although some individuals may appear in more than one year, the analysis does not attempt to link taxpayers across time. Each year is analysed separately, with pooled estimates used only as supplementary evidence. This reflects both the structure of the source material and the fact that tax rules, thresholds, assessment practices and roll formats were not identical across all years. As discussed by [Bengtsson & Molinder, 2025](#), previous source-critical studies of the taxation lists generally regarded them as reliable. [Bengtsson & Molinder, 2025](#) point in particular to Järnek (1968, p. 19) and Kuuse (1970, pp. 35–40) (as cited in [Bengtsson & Molinder, 2025](#) p. 7; appendix A p. 6), while noting that self-employed taxpayers with good accounting skills may have been able to reduce their tax liability.

A central limitation is that the taxation lists do not contain all information that would be desirable for analysing behavioural responses. They do not reveal taxpayers' knowledge of the tax schedule, their opportunities for avoidance, or the precise mechanisms through which income may have been adjusted. A related limitation concerns heterogeneity within the category of high-income taxpayers. Although the records often include occupation or social title, the number of observations becomes too limited for reliable subgroup analysis once the data are divided by year, threshold, area and taxpayer category. The thesis therefore does not estimate separate bunching responses by occupation or income type. This means that possible differences between, for example, salaried professionals, business owners and capital-income recipients cannot be examined directly, but must instead be treated as an interpretive limitation when discussing the uneven evidence of bunching observed in the analysis.

The dataset used in this thesis combines already digitised material with new manual digitisation from the original taxation lists. This data construction is a central part of the empirical contribution of the thesis. Rather than relying on aggregate tax statistics or published top-income series, the analysis uses individual-level observations to examine the distribution of recorded income around specific tax thresholds. The already digitised data, as well as photographs of the non-digitised material, were provided by Erik Bengtsson and Jakob Molinder and originate from the Stockholm City Archive (*Stockholms stadsarkiv*) and the National Archives in Stockholm (*Riksarkivet*) ([Bengtsson & Molinder, 2025](#)). The starting point was digitised material for Djursholm and Östermalm for 1915, 1927 and 1935, used in [Bengtsson & Molinder, 2025](#) to ana-

lyse income concentration and top incomes. In addition to the 12,888 digitised individuals, the taxation lists for Saltsjöbaden in 1915, 1919, 1927 and 1935, as well as Djursholm and Östermalm in 1919, were manually digitised from the original tax assessment rolls, totalling to an additional 7,942 individuals. The total for all years combined is 20,830 individuals with recorded income. For each observation the taxpayer's name, location, occupation or title where available, and the relevant income and tax variables were recorded. The relevant income columns are grouped under assessed taxable income, divided into income from capital, employment or pensions, and business or occupational activity ⁹. Figure 2 illustrates the type of archival material from which these observations were transcribed.

⁹*taxerad inkomst: av kapital, av tjänst eller pension, av arbetsanställning, tjänst eller pension, and av rörelse, yrke eller eljest*

Figure 2: Example Page from the 1919 Taxation Lists for Djursholm

Nummer å uppgift eller annan tillägg.	Den skattskyldiges		Nummer å hus, hemman eller lägenhet.	Den skattskyldiges civilstånd. ¹	Taxering enligt beviljande Av taxeringsnämnden taxerad inkomst					Av gröningsnämnden beviljad	Taxering enligt förordning Av taxeringsnämnden		
	namn och titel eller yrke.	bostad.			av kapital.	av arbetsställning, tjänst eller pension.	av rörelse, yrke eller eljest.	Summa.	monetär skatt enligt 18 §		taxerad belopp.	monetär skatt enligt 18 § 1 mom. a), b) och c).	belopp.
295	Antell, Lin. M., Försäkr. tj. man	Bylgia	3	o	3120			3120					
296	Antell, Lilly, Banktj. man	"	"	o	3320			3320					
	Guustafson, Josef G., Kaldgar.	"	"	o	2000			2000	2000		2780	1500	
297	Moll, V. L., Bank. direktör	"	4	g 1	5860	47100	3830	56790			3320	1500	
298	Moll, Sarah, Skriv. bitr.	"	"	o	50	3320		3370			2000	1500	
299	Morthensen L. T. M., Disponent	"	5	g 5	17.050	139.210	520	156.780			57790	2100	5
300	Kalling, C. O., Greve	"	6	g 1	10.080	38.500	50	48.630			3260	1500	
301	Siölander, N., Inkefru	"	7	ä	15.400	940		16.340			150540	3300	14
302	Andersson, A. V., Tottthandl.	"	"	g 2		750	5900	6650			56240	2100	
303	Andersson, Joh. Fr., Gärdskar	"	"	g 1	2400			2400	2400		11600	1500	
304	o. Hagebadeu, G., Ingenjör	"	8	g 1	750	7410	90	8250			6320	2400	
305	o. Hagebadeu, Ernst	"	"	o	20	7200		7220			2620	2100	
306	Ledervall, E. J., Godägare	"	"	g 5	27.210			27.210			13840	2100	
307	Eckholm, H. A., Kaldg. mail.	"	"	g 1	2600			2600	340		6900	1500	
308	Beskow, Carl, f. g. Löjtnant	"	9	g 1	8440			8440			33880	3300	
309	Manheim, J. A., Snickare	"	"	g 2	2370			2370	230		2480	2100	
310	Manheim, Karl A., Bitr.	"	"	o	1360			1360	670		9070	2100	
311	Manheim, Anna, Telefonist	"	"	o	3500			3500			3720	2400	
312	Salander, E. H. L., Fru	"	10	ä	14.440	810		15.250			3430	1500	
313	Salander, Ulla, Fröken	"	"	o	1190	2490		3680			20320	1500	
314	Salander, Sven, Löjtnant	"	"	o	490	5070		5560			3990	1500	
315	Salander, Lisa, Fröken	"	"	o	1320	4000		5320			5160	1500	
316	Salander, Nils, Banktj. man	"	"	o	380	7730	100	8210			5490	1500	
318	Thedenmark, Rayah, Inkefru	"	11	ä	1230	2100		3330			8150	1500	
319	Sberg, Carl R., Kontorschef	"	"	o		9440		9440			3310	1500	
320	Triste, Edv., Disponent	"	12	g 2	1410	37030		38440			36180	2400	
322	Timell, C. H., Löjtnant	"	"	g		9.800		9.800			8610	1800	
323	Schlossman, Antur, Disp.	"	13	o	5400	12.000		17.400			24420	-	
	Schmidt, Ebba H., Lär.	"	"	o		2000		2000			2000	-	
					10.720	357.570	10.490	478.780	4730	17250	496090		

Note: The figure illustrates the archival source material used to construct the dataset. The taxation lists contain handwritten information on taxpayers, including names, occupations, addresses and taxable income. The records were manually transcribed into a machine-readable dataset, requiring repeated checking during data construction.

Figure 3: Example Page from the 1919 Taxation Lists for Östermalm

[illegible]

Several checks were carried out to reduce transcription errors. The manually entered data were inspected for implausible values, such as negative incomes, impossible category totals, or values inconsistent with the structure of the original roll. Where the source allowed it, totals were checked against component income categories. Observations around the relevant tax thresholds were reviewed especially carefully, since

transcription errors in this region could directly affect the bunching estimates. The cleaning process involved a small number of standardisation decisions. Monetary values were kept in nominal kronor, since the bunching analysis concerns the thresholds faced by taxpayers in each year. Observations with missing or unreadable values for the main income variable were excluded from the bunching analysis, although identifying information was retained where useful for descriptive purposes. Duplicate entries were checked manually and removed only when they clearly referred to the same taxpayer in the same year and area.

Table 2 reports basic descriptive statistics for the income variable used in the analysis. The number of observations differs across years, reflecting differences in the underlying tax districts. The table reports the mean, median, selected percentiles and range of recorded income. These measures are useful because the income distribution is expected to be right-skewed: a small number of very high-income taxpayers can raise the mean substantially above the median. The median and interquartile range therefore provide a better indication of the typical taxpayer in the sample, while the upper percentiles and maximum values document the presence of very high-income observations.

Table 2: Descriptive statistics by year

	1915	1919	1927	1935
Observations	2639	3858	6771	7562
Mean income	5454	10264	7487	6568
Median income	1690	3940	2420	2500
25th percentile	1000	1900	1200	1300
75th percentile	4870	8940	5830	5999
Minimum income	10	30	30	10
Maximum income	534200	527510	2444860	535460

Notes: Observations refer to taxpayers with positive, non-missing values for total income.

Table 3 shows the distribution of observations across the three areas. This is important because the empirical sample is constructed from local tax assessment rolls, and the number of observations is not necessarily balanced across areas or years. Differences in the size of the year-area cells may affect how much information each locality contributes to the later analysis. The table therefore clarifies whether the empirical results are based on a relatively even distribution of observations across the three areas or whether some years are driven more strongly by one locality.

Table 3: Observations by area and year

Area	1915	1919	1927	1935
Djursholm	1218	1480	2938	3398
Östermalm	639	1331	2295	2400
Saltsjöbaden	782	1047	1538	1764
Total	2639	3858	6771	7562

In addition to the tax assessment rolls, the thesis uses a set of contemporary and secondary sources to contextualise the empirical findings and interpret the conditions under which behavioural responses could emerge. These sources are not used as direct evidence of taxpayer behaviour itself, but to reconstruct the informational and institutional environment surrounding taxation.

The supplementary material includes official government documents and legislative proposals, especially

the 1914 *värnskatt* proposal, the 1910 assessment framework and the 1927 proposal for the new *taxeringsförrordning* (Kungl. Finansdepartementet, 1910; Kungl. Maj:t, 1914, 1927). These sources are used to describe the statutory thresholds, declaration duties, assessment procedures and administrative controls surrounding income taxation. The thesis also uses practical tax handbooks aimed at taxpayers and tax authorities, including Palmgren's *Själodeklaration* and Norrman's handbook on the *krigskonjunkturskatt* (Norrman, 1918; Palmgren, 1928). Palmgren's handbook was first published in 1910 and was repeatedly revised as tax rules changed; by 1928 it had reached its seventeenth edition. The foreword to the seventh edition described the handbook (available in Palmgren, 1928) as a practical aid for declaration and assessment after the 1910 reform had made earlier editions obsolete, and noted that the presentation followed the declaration form itself, with references to the relevant tax provisions (Palmgren, 1928). These handbooks are used to assess whether tax rules and calculation procedures were available and practically explained to taxpayers.

The analysis also draws on administrative summaries based on tax records, especially Larsson's processing of the 1919 *krigskonjunkturskattelängder* (Larsson, 1920). This source is used to show how wartime taxation generated systematic administrative information about assessed incomes. The thesis uses contemporary local material, such as the Djursholm advertisement, see Appendix B, to illustrate how taxation could be made salient in affluent residential environments (Djursholms Aktiebolag, n.d.).

Finally, the thesis uses secondary literature on tax morale, compliance, state capacity and Swedish fiscal development to interpret the broader social and institutional conditions surrounding taxpaying. This includes work on tax compliance and tax morale (Alm & Torgler, 2006; Frey & Torgler, 2007; Torgler, 2007), the relationship between compliance, legitimacy and state capacity in Sweden (Jansson, 2018; Nistotskaya & D'Arcy, 2018), and broader theoretical work on fiscal capacity and public authority (Besley, 2020; Levi, 1988). The top-income literature is also used to frame the interpretation of tax records as administrative sources that may be affected by avoidance, underreporting and institutional assessment procedures (Atkinson, 2004; Atkinson et al., 2011; Roine & Waldenström, 2008, 2010).

These sources serve an interpretive purpose. They do not show whether individual taxpayers deliberately adjusted income around thresholds, nor do they allow taxpayer motives to be observed directly. Instead, they help assess whether the conditions discussed in Section 2.2.1 were plausibly present: sufficiently strong incentives and salience of the tax schedule, and the practical ability to adjust assessed income based on administrative control. They are therefore used in the discussion to interpret why bunching appears uneven or absent, rather than as independent quantitative evidence of bunching.

4 Empirical strategy

This section presents the empirical strategy used to test for taxpayer responses to marginal tax rates, through bunching around marginal tax thresholds. It first outlines the conceptual bunching framework and the estimation of excess mass around institutional tax kinks. It then discusses the selection of thresholds, the baseline specification, and the robustness checks used to assess whether the results depend on particular modelling choices.

4.1 Bunching Framework and Estimation of Excess Mass

The basic intuition behind the bunching framework is that, in the absence of behavioural response to taxes, the income distribution should be relatively smooth around a marginal tax threshold (Kleven, 2016; Saez, 2010). A tax kink changes the marginal tax rate at a specific income point, but it does not by itself imply that many taxpayers should be located exactly at that point. If taxpayers do not respond to the kink, the number of observations just below and just above the threshold should follow the general shape of the local income distribution. Figure 4 illustrates this case.

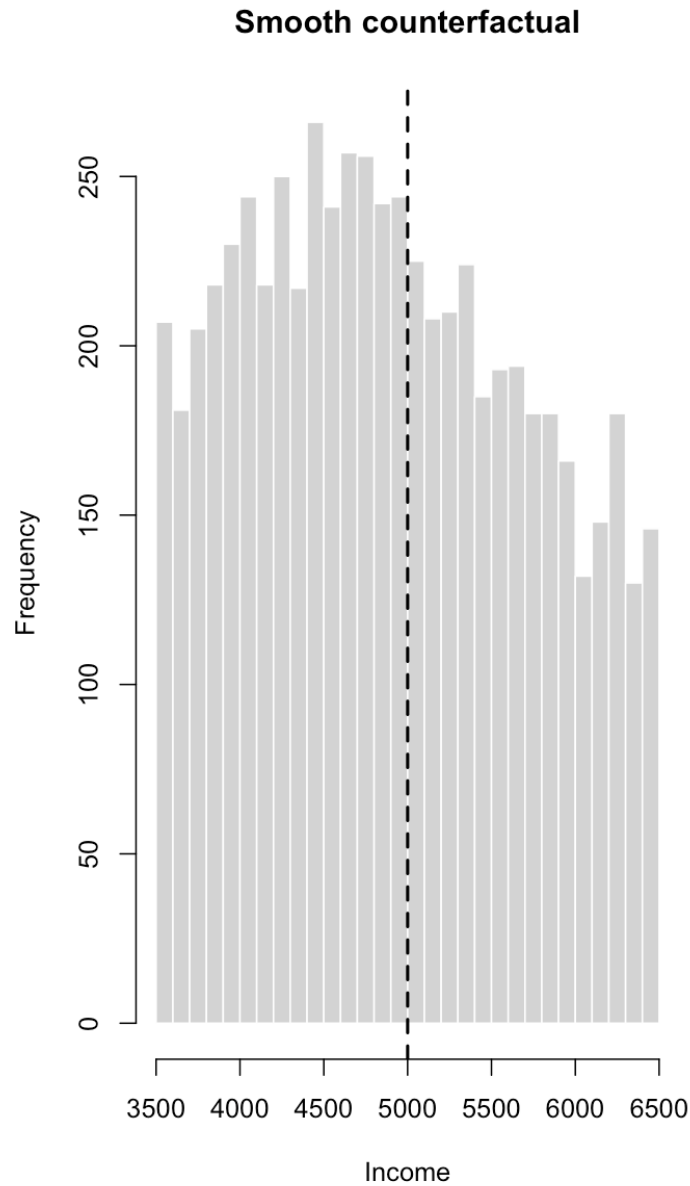


Figure 4: Illustration of a smooth income distribution around a tax threshold

If taxpayers do respond, however, the distribution is no longer smooth. Individuals who would other-

wise have reported income slightly above the threshold may instead reduce, shift or report income so as to remain at or below it. This produces excess mass around the kink, concentrated on the lower-tax side of the threshold (Kleven, 2016; Saez, 2010), and a missing mass on the higher-tax side. However, visible bunching requires more than a statutory kink. Taxpayers must understand the incentive, find it worthwhile to respond, and be able to adjust reported income with sufficient precision, as discussed in Section 2.2.1. Existing evidence shows that bunching is often strongest where income is flexible or self-reported, while wage earners may display little or no bunching because of adjustment costs, limited salience, third-party reporting or institutional constraints (Bastani & Selin, 2012; Chetty et al., 2011, 2009; Saez, 2010). Figure 5 illustrates the case of excess mass around a threshold.

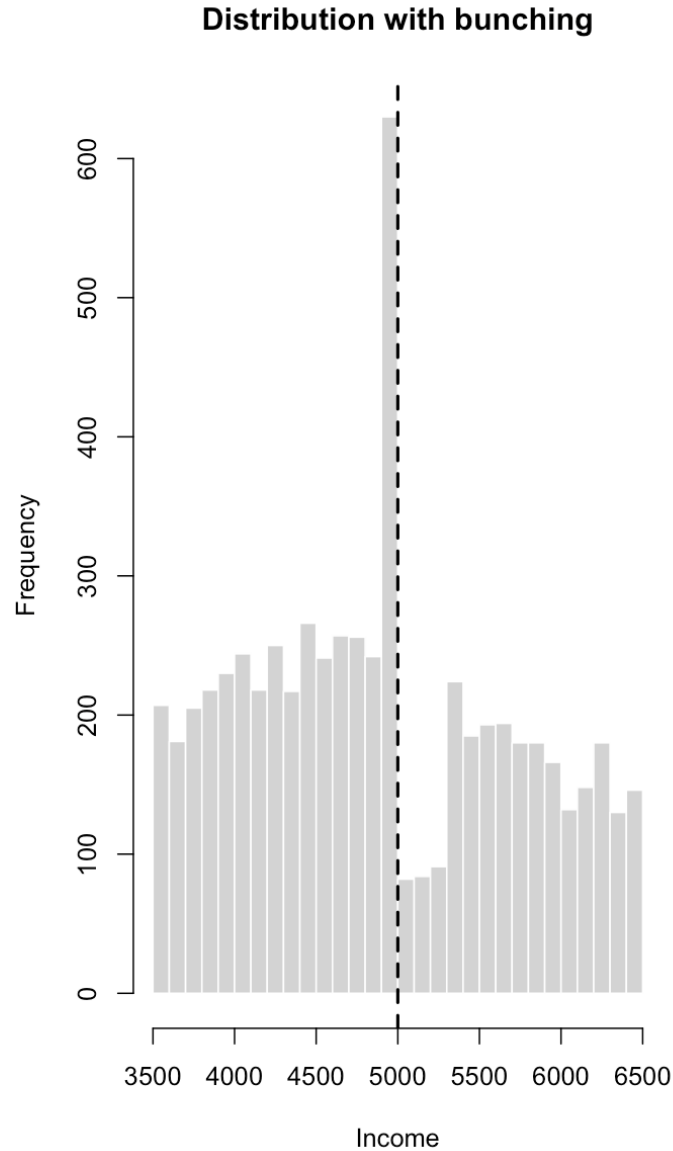


Figure 5: Illustration of excess mass around a tax threshold

The empirical analysis begins by constructing income distributions around each selected threshold. Let z_i

denote the recorded income or tax-relevant amount of taxpayer i , and let z_t^* denote the relevant threshold in year t . Income is normalised relative to the threshold as

$$x_i = z_i - z_t^*.$$

The threshold is therefore located at zero. Negative values refer to taxpayers below the threshold, while positive values refer to taxpayers above it. This normalisation is useful because the thresholds differ across years, while the object of interest is the local distribution of taxpayers around each institutional threshold.

The bunching test asks whether there are more taxpayers close to a tax threshold than would normally be expected. To do this, the observed number of taxpayers around the threshold is compared with a counterfactual estimate: an estimate of how the income distribution would have looked if taxpayers had not adjusted their reported incomes in response to the threshold. This counterfactual is constructed from the surrounding income distribution, while excluding the area closest to the threshold because this is where behavioural responses are most likely to appear (Bertanha et al., 2023; Kleven, 2016; Saez, 2010). In practice, reported income is divided into bins of equal width, and a smooth polynomial is fitted to the bin counts outside the excluded region. The estimated excess mass is then the difference between the observed number of taxpayers near the threshold and the number predicted by the counterfactual distribution. Because the result depends on how this counterfactual is constructed, the estimates should be interpreted as evidence of local clustering around thresholds, rather than as direct structural estimates of taxable-income elasticity¹⁰ (Bertanha et al., 2023; Blomquist, Newey, Kumar & Liang, 2021).

Let C_j denote the observed number of taxpayers in bin j , and let x_j denote the midpoint of that bin. The counterfactual distribution is estimated as

$$C_j = \sum_{p=0}^P \beta_p x_j^p + \varepsilon_j, \quad j \notin K,$$

where P is the polynomial order and K is the excluded region around the threshold. The fitted values from this regression give the predicted counterfactual bin counts, denoted $\hat{C}_j$.

Excess mass is then calculated as the difference between the observed and predicted number of taxpayers in the bunching region. If B denotes the set of bins included in this region, excess mass is defined as

$$\hat{B} = \sum_{j \in B} (C_j - \hat{C}_j).$$

A positive value indicates that more taxpayers are observed around the threshold than would be expected from the surrounding distribution. To make estimates more comparable across years, excess mass is also expressed relative to the average predicted counterfactual density in the bunching region:

¹⁰Taxable-income elasticity refers to how strongly reported taxable income changes in response to changes in tax rates.

$$\hat{b} = \frac{\sum_{j \in B} (C_j - \hat{C}_j)}{\frac{1}{|B|} \sum_{j \in B} \hat{C}_j}.$$

This normalised measure is useful because the number of observations differs across years and thresholds. It follows the logic of expressing bunching relative to the counterfactual density rather than relying only on the absolute number of excess observations (Kleven, 2016; Saez, 2010).

The purpose of this procedure is not to estimate how strongly taxable income responded to taxation in general. Instead, it is used to identify a narrower pattern: whether unusually many taxpayers appear close to specific tax thresholds. In this thesis, the method is therefore used as a descriptive test for visible excess mass around institutional thresholds. If no bunching is found, this should be interpreted as the absence of clear threshold-based adjustment in the tax records. It does not mean that taxation had no effect on taxpayer behaviour in other ways, such as broader avoidance, evasion, changes in labour supply, or income shifting.

4.2 Robustness Checks

Several robustness checks are used to assess whether the results depend on arbitrary specification choices (see Bastani & Selin, 2012). First, the analysis is repeated using alternative bin widths, meaning different sizes of the income intervals used to group observations in the histogram. This tests whether any evidence of bunching depends on how finely income is grouped. Secondly, the bandwidth around the threshold is varied, meaning the total income window included on either side of the threshold. Narrower bandwidths focus more closely on taxpayers near the threshold, while wider bandwidths use more observations but may include parts of the income distribution that are less locally comparable. Thirdly, the excluded region around the threshold is varied. This is the income range closest to the threshold that is omitted when estimating the counterfactual distribution, because it may contain the behavioural response being tested. Varying this region tests whether the results depend on how narrowly or broadly the potential bunching area is defined.

Uncertainty is assessed using a bootstrap procedure. The data are repeatedly resampled, the bunching estimate is recalculated for each resample, and the standard deviation of the resulting estimates is used as a measure of statistical uncertainty (Bastani & Selin, 2012; Saez, 2010). Given the limited size of the historical samples, the bootstrap estimates are interpreted cautiously. This is important because absence of statistically significant bunching does not necessarily imply absence of behavioural response. Weak or invisible bunching may reflect optimisation frictions, adjustment costs, limited salience, reporting constraints or difficulties in identifying the correct counterfactual distribution (Bertanha et al., 2023; Blomquist et al., 2021; Chetty, 2012; Chetty et al., 2011).

Where possible, the analysis further checks the treatment of observations exactly at the threshold. This is important because historical tax records contain round-number reporting even in the absence of tax-induced bunching. Distinguishing between observations just below the threshold and observations exactly at the threshold helps assess whether any clustering is more likely to reflect strategic adjustment or general

rounding. Taken together, these checks assess whether the findings are driven by the baseline specification or by the underlying income distribution. If little or no bunching is observed across alternative bin widths, bandwidths, excluded regions, local-count comparisons and pooled specifications, the result can be interpreted with greater confidence as evidence that precise threshold-based adjustment was not clearly visible in the tax records.

5 Results and Discussion

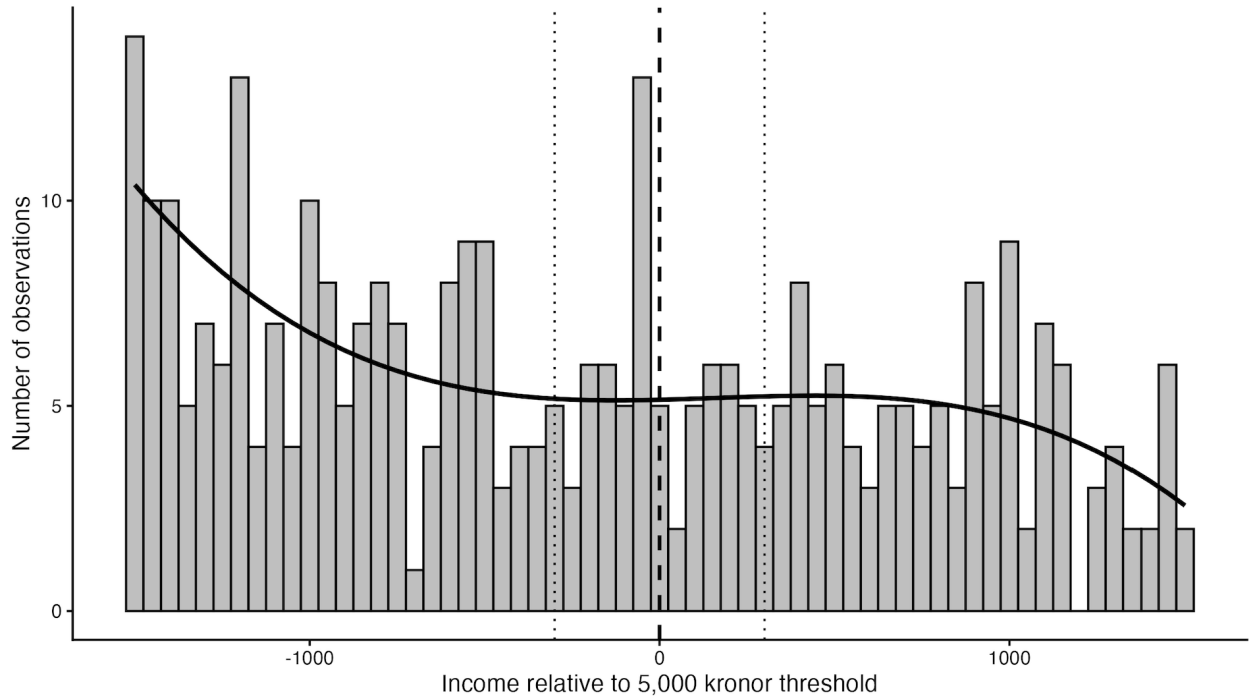
This section presents the empirical results. It first examines whether there is evidence of bunching around the selected marginal tax thresholds. The analysis begins with year-by-year evidence and then considers pooled estimates. The section then turns to the interpretation of the results, asking why visible threshold-based adjustment appears limited and what this implies for the use of tax records in the study of early 20th income inequality.

5.1 Evidence of bunching across thresholds

The first research question asks to what extent there is evidence of bunching at marginal tax thresholds among high-income earners in Sweden between 1915 and 1935. The results are mixed. Across the thresholds examined, the evidence does not point to a general or systematic pattern of bunching. Some estimates are small, statistically insignificant, or visually ambiguous. However, there are some exceptions, most notably the 1919 10,000 kronor threshold and the 1927 3,000 kronor threshold, where the formal excess-mass estimates suggest more visible clustering below the kink.

The first test concerns the 5,000 kronor threshold created by the 1915 *värns katt*. Figure 6 plots the distribution of recorded income around this threshold, with income normalised relative to the kink. The dashed vertical line marks the threshold, while the black curve shows the estimated smooth counterfactual distribution.

Figure 6: Bunching analysis, 1915



Notes: The figure shows the distribution of recorded income around the 5,000 kronor threshold. The exact-threshold observations are counted below the threshold.

The figure shows some concentration of observations close to the threshold, including at the threshold itself. However, the pattern is not clearly concentrated below the kink in a way that would provide strong visual evidence of bunching. The distribution is uneven on both sides of the threshold, and the visible mass near the kink does not form a clear pile-up only on the lower-tax side.

The baseline excess-mass estimate gives a similar impression. Using a bin width of 50 kronor, a bandwidth of 1,500 kronor, an excluded region of 300 kronor around the threshold, and a third-order polynomial counterfactual¹¹, 38 taxpayers are observed in the bunching region. The smooth counterfactual predicts approximately 30.87 taxpayers in the same region. The estimated excess mass is therefore 7.13 taxpayers, with a normalised excess¹² mass of 1.39. The estimate is positive, but modest.

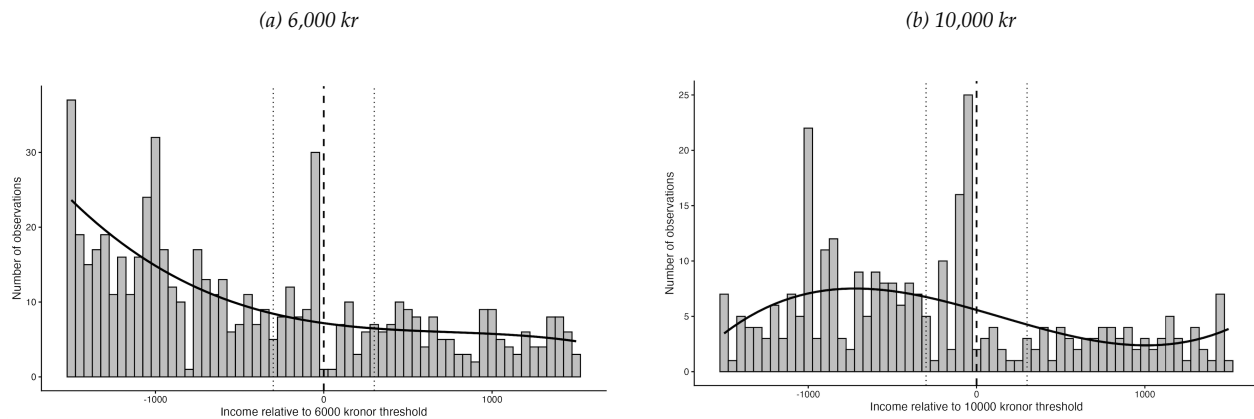
The bootstrap standard error measures the sampling uncertainty around the excess-mass estimate. In 1915, the estimated excess mass is 7.13 taxpayers, with a bootstrap standard error of 7.37. The 95 percent confidence interval ranges from -6.06 to 22.02 taxpayers. Since this interval includes zero, the estimate is not statistically distinguishable from no excess mass. Taken together, the results provide limited evidence of bunching at the 1915 *värns katt* threshold.

¹¹The bin width, bandwidth, excluded region and third-order polynomial counterfactual have been used consistently for all thresholds

¹²Normalised excess mass is the estimated excess number of taxpayers in the bunching region divided by the average predicted counterfactual count per bin in that region. It makes bunching estimates more comparable across thresholds with different sample sizes.

The 1919 results both show evidence of bunching. At first glance, both thresholds appear to show some concentration of observations close to the kink. However, visual clustering alone does not necessarily imply bunching, since concentrations may also reflect the underlying income distribution rather than behavioural adjustment. At the 6,000 kronor threshold in Figure 7a, the excess-mass estimate is 24.85 taxpayers, with a confidence interval from 6.36 to 44.58. Since this interval excludes zero, the baseline estimate suggests statistically significant excess mass at this threshold. At the 10,000 kronor threshold in Figure 7b, the evidence is also positive: the baseline estimate gives an excess mass of 21.29 taxpayers, with a confidence interval from 5.97 to 39.94. This estimate is likewise statistically distinguishable from zero. The robustness checks indicate that both results are relatively stable across alternative specifications, although the 10,000 kronor threshold is the more robust of the two. The 10,000 kronor estimate remains positive in 105 of 108 specifications, while the 6,000 kronor estimate remains positive in 95 of 108 specifications. Taken together, the 1919 results suggest evidence of bunching at both thresholds in the baseline estimates, with the strongest and most stable evidence at the 10,000 kronor threshold.

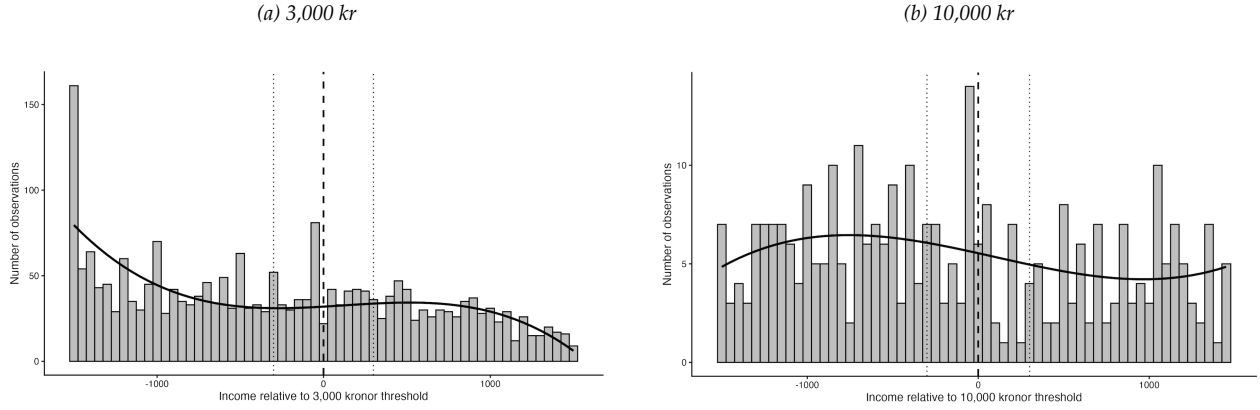
Figure 7: Bunching Analysis, 1919



Notes: The figures show the distribution of recorded income around the 6,000 and 10,000 kronor threshold. The vertical line marks the tax threshold. The exact-threshold observations are counted below the threshold

The 1927 thresholds show more variation. At the 3,000 kronor threshold in Figure 8a, the baseline evidence is relatively strong. The estimate indicates an excess mass of 80.48 taxpayers, with a normalised excess mass of 2.58. The confidence interval ranges from 41.14 to 120.64 and therefore excludes zero, suggesting statistically significant bunching. However, the robustness checks in Appendix C show that this estimate is sensitive to specification choices, with estimates ranging from -270.59 to 304.20 and positive estimates in 96 of 108 specifications. This means that the result is sensitive to specification choices and should not be treated as equally stable as the 1919 thresholds, especially the 10,000 kronor result. By contrast, the 10,000 kronor threshold in Figure 8b provides much weaker evidence. Although the excess-mass estimate is positive, at 3.86 taxpayers, the confidence interval ranges from -8.55 to 17.52 and includes zero. This difference suggests that bunching was not equally strong across tax thresholds, even within the same year.

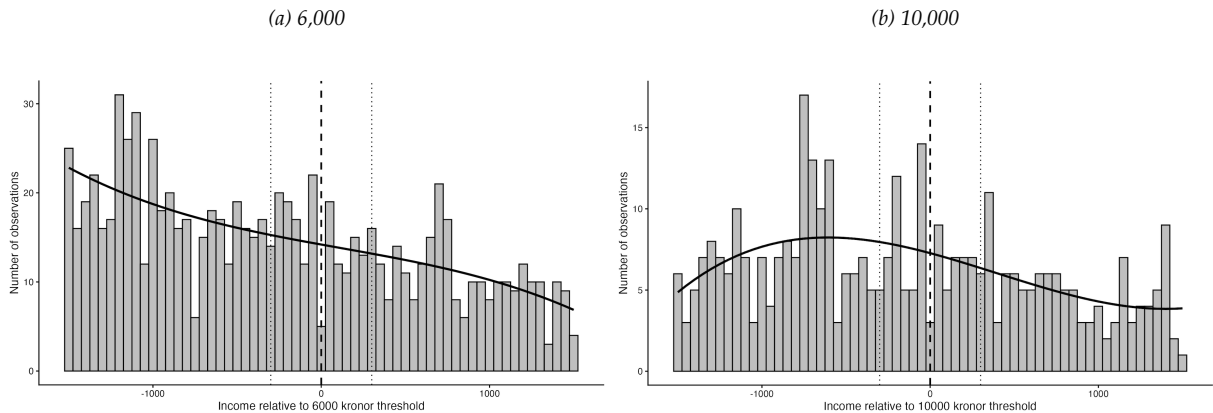
Figure 8: Bunching Analysis, 1927



Notes: The figures show the distribution of recorded income around the 3,000 and 10,000 kronor thresholds. The vertical line marks the tax threshold. Exact-threshold observations are counted below the threshold.

The 1935 results provide limited evidence of bunching. At the 6,000 kronor threshold in Figure 9a, the estimate is positive, with an excess mass of 15.14 taxpayers and a normalised excess mass of 1.02. However, the confidence interval ranges from -10.62 to 37.57 and therefore includes zero. The robustness checks in Appendix C show that the estimate is positive in all 108 specifications, with estimates ranging from 6.96 to 90.17. This suggests that the result consistently points in the direction of excess mass, but the statistical uncertainty of the baseline estimate means that it should be interpreted as suggestive rather than conclusive evidence of behavioural response. At the 10,000 kronor threshold in Figure 9b, the estimate is smaller, at 1.81 taxpayers, with a normalised excess mass of 0.24. The confidence interval ranges from -13.62 to 19.24 and includes zero, while the robustness checks show positive estimates in 85 of 108 specifications. Taken together, these results suggest that precise adjustment around the selected 1935 thresholds is not clearly visible in the data.

Figure 9: Bunching Analysis, 1935

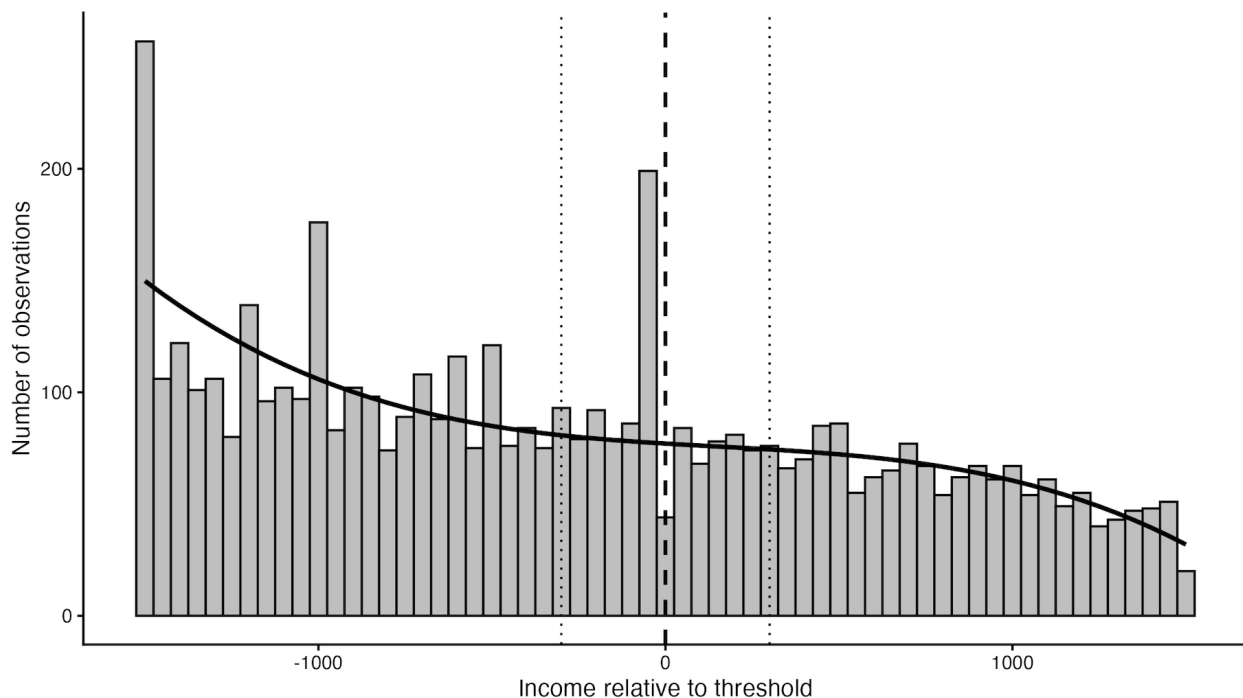


Notes: The figures show the distribution of recorded income around the 6,000 and 10,000 kronor thresholds. The vertical line marks the tax threshold. Exact-threshold observations are counted below the threshold.

The pooled threshold-level analysis in Figure 10 provides a complementary perspective. In this specifica-

tion, observations from all year-threshold combinations are combined after normalising income relative to each relevant threshold. This increases statistical power and makes it possible to test whether there is a more general tendency for taxpayers to cluster below tax kinks across the full sample. The pooled estimate indicates a positive excess mass of 153.8 taxpayers, a normalised excess mass of 1.95, and the bootstrap confidence interval excludes zero, suggesting that the pooled estimate is statistically distinguishable from no bunching. The advantage of pooling is that it increases statistical power by using more observations around the normalised thresholds. However, this result should be interpreted cautiously. Because the pooled analysis combines different years, thresholds, tax bases and marginal tax changes, it does not show that taxpayers responded strongly to any single kink. Pooling also risks masking heterogeneity: a positive pooled estimate may be driven by a few thresholds rather than by a general response across the tax system. Rather, the result indicates that when the threshold-year observations are considered together, there is a tendency for reported incomes to cluster below marginal tax thresholds. The pooled result therefore complements the year-specific estimates rather than replacing them. It suggests that behavioural responses may have existed, but were often too small, or too unevenly distributed to appear clearly in every individual year-threshold analysis.

Figure 10: Bunching Analysis Across Years



Notes: The figures show the distribution of recorded income relative to all thresholds across years. The vertical line marks the tax threshold. Exact-threshold observations are counted below the threshold.

The historical character of the data is also important across all years and thresholds. The income distributions around individual thresholds are noisy, reflecting smaller samples and uneven local distributions. Local spikes may therefore reflect random variation, rounding behaviour or features of the underlying income distribution rather than clear behavioural responses to taxation. These results raise two methodological risks. Some null results may reflect Type II error, since the number of observations around individual

thresholds is limited. At the same time, being cautious of Type I error is important, especially given multiple specifications, round-number thresholds and common rounding in the tax records. Section 5.2.1 returns to this issue by asking whether the positive results are consistent with the historical conditions under which bunching would be expected. This caution is particularly important because the study applies a modern bunching framework to historical tax data with much smaller local samples than most contemporary applications. The results should therefore be interpreted as descriptive evidence about whether bunching is visible in the available records, rather than as definitive evidence about whether taxpayers responded at all.

Nevertheless, the robustness checks in Appendix C strengthen the interpretation that the clearest positive finding is not simply an artefact of the preferred specification, although they do so unevenly. The 1919 10,000 kronor threshold is the most stable positive result, remaining positive across 105 of 108 alternative specifications. The 1919 6,000 kronor and 1927 3,000 kronor thresholds are also positive in most specifications, but the wide ranges of estimates indicate greater sensitivity to specification choices. This does not remove the broader concerns about noise, rounding and limited sample size, but it does suggest that the positive findings should not be dismissed as products of the baseline specification alone. For the remaining thresholds, where the baseline estimates already provide little evidence of statistically significant bunching, the robustness checks do not reveal a hidden stable pattern. Instead, the wide bootstrap confidence intervals suggest that the analysis may have limited statistical power to detect smaller responses.

Taken together, the results provide limited, but not entirely absent, evidence of bunching at marginal tax thresholds. Three individual thresholds show evidence consistent with bunching, whilst the other thresholds do not show statistically significant excess mass. The pooled analysis strengthens the interpretation that some threshold-related adjustment was present across the sample as a whole, but also confirms that the behaviour was not consistently visible at every kink. The overall pattern therefore suggests that some high-income taxpayers adjusted reported income around particular tax thresholds, but that this behaviour was not widespread enough to produce a uniform pattern across the period. This supports a cautious interpretation: tax thresholds mattered in some cases, but the evidence does not suggest a general pattern of strong and precise threshold-based adjustment among high-income earners.

5.2 Explaining Uneven Bunching: Incentives, Salience, Adjustability and Assessment

Building on the mixed evidence in Section 5.1, this section asks why bunching appeared at some thresholds but not consistently across the tax system. The results suggest that the conditions for behavioural response were only partly present: some taxpayers could and did respond, but precise threshold-based adjustment was constrained by modest incentives, administrative assessment, documentation requirements and local visibility.

The discussion first considers whether the conditions required for bunching were present: incentive strength, knowledge of the kink, and the ability to adjust assessed income. It then turns to broader social and institutional explanations, including legitimacy, trust, local visibility and state capacity. The aim is to show that the absence of bunching does not imply that taxation was irrelevant, but rather that precise threshold-based adjustment was weak, constrained or not visible in this setting.

5.2.1 Were the conditions for bunching present?

For bunching to appear, at least three conditions had to be present at the same time, as discussed in Section 2.2.1: the marginal incentive had to be large enough, the relevant threshold had to be sufficiently salient, and taxpayers had to be able to adjust assessed income with enough precision (Chetty et al., 2011, 2009; Kleven, 2016; Saez, 2010). These conditions make it possible to interpret the threshold-level results systematically. The absence of bunching at a given threshold need not have the same explanation in every case. In some cases, the marginal incentive was probably too small. In others, the incentive was stronger, but the relevant kink may have been less transparent or harder to act upon. In still others, taxpayers may have known about the tax but lacked the timing or administrative flexibility needed to place assessed income just below the threshold.

The first condition concerns the strength of the incentive (Kleven, 2016; Saez, 2010). For an individual taxpayer, the relevant question was how much tax could be saved by remaining below a threshold. The selected thresholds created very different marginal-rate increases. Some were small: 0.8 percentage points at 6,000 kronor in 1919, 0.44 percentage points at 3,000 kronor in 1927, and 0.45 percentage points at 6,000 kronor in 1935. Others were sharper: 2.5 percentage points at 10,000 kronor in 1919, 2.33 percentage points at 10,000 kronor in 1927, and 1.53 percentage points at 10,000 kronor in 1935.

The second condition is salience. The historical evidence does not support a simple ignorance explanation. The tax rules were not hidden: the *värnskatt* proposal contained schedules and examples (Kungl. Maj:t, 1914), while practical handbooks provided guidance for taxpayers and tax authorities. Palmgren's *Självdeklaration* was repeatedly revised and reissued as tax rules changed (see e.g. Palmgren, 1928), and Norrman's handbook included tax tables, declaration rules and worked examples (Norrman, 1918). Taxes also appear to have been salient in affluent environments: a contemporary advertisement for Djursholm promoted *billiga skatter*¹³ alongside schools, electricity, transport links and villa plots (Djursholms Aktiebolag, n.d.). In other words, high-income taxpayers could be tax-conscious without necessarily calculating the marginal gain from remaining just below a specific kink.

The third condition concerns administrative control. Even if taxpayers understood the rules, bunching required that they could move assessed income with sufficient precision. This was not self-evident in early twentieth-century Sweden. Declaration forms divided income into several sources and required information on deductions and wealth, while taxpayers with property or business income could be required to provide additional documentation, including certified balance sheets and profit-and-loss accounts (Palmgren, 1928).

The 1915 *värnskatt*, however, was deliberately based on declarations already submitted before the tax was decided, limiting the scope for special manipulation after the tax became known (Kungl. Maj:t, 1914). The result here is therefore best interpreted through adjustability and timing. The empirical evidence provides limited support for bunching, despite the existence of a statutory kink, consistent with the design of the tax itself: because liability was based on already submitted declarations, taxpayers had limited scope to adjust reported income after learning about the new tax (Kungl. Maj:t, 1914). The absence of bunching in 1915 therefore does not require an ignorance explanation. Rather, the relevant condition that appears to be

¹³Low taxes.

missing is the one concerning salience – in this case the knowledge of the tax to act in time.

The 1919 threshold at 10,000 kronor provides a clear case where the conditions for bunching appear to align. The marginal tax increase was larger, around 2.5 percentage points, and the wartime tax rules were explained in detail in contemporary guidance material. [Norrman, 1918](#)'s handbook shows that the *krigskonjunkturskatt* required special declarations, information from employers on certain payments, administrative requests for further information and penalties for non-compliance or false reporting ([Norrman, 1918](#)). The completed declaration form reproduced in the handbook illustrates the level of detail expected: income sources, previous comparable income, *tantième*¹⁴ and the basis for payments were to be specified ([Norrman, 1918](#)). This detailed guidance may have made the tax more salient to knowledgeable taxpayers: by showing how liability was calculated, it also indicated which parts of reported income could matter for remaining below the threshold.

Both the bunching results concerning the 1919 threshold at 6,000 kronor and the 1927 threshold at 3,000 kronor remain somewhat surprising given the modest marginal tax increase of 0.8 percentage points and 0.44 percentage points. Both of these thresholds should, however, be interpreted in relation to the timing of institutional change. They fall before the new *taxeringsförrordning*¹⁵, adopted in 1927 and implemented from the 1928 tax year, which consolidated procedures for annual assessment, review, documentation and third-party information ([Kungl. Maj:t, 1927](#)). This does not mean that taxpayers could simply report any income they wished: the earlier system also relied on declarations, local assessment and review ([Riksdagen, 1910](#)). However, the later framework appears to have strengthened and standardised administrative control. The bunching observed at the 1919 and 1927 thresholds is therefore consistent with a setting in which reported income may still have been more adjustable. When combined with relatively high salience and less standardised administrative control, even modest marginal incentives may have been sufficient to generate visible bunching.

By contrast, the 1927 threshold at 10,000 kronor shows the opposite pattern. The marginal tax increase was relatively large, around 2.33 percentage points, but there is little evidence of bunching. One possible explanation is that this threshold reflected the combined effect of two different taxes, including local progressive income taxation and ordinary state taxation. The relevant marginal increase may therefore have been less transparent to taxpayers than the more direct wartime threshold in 1919 or the income tax at 3000 kronor in 1927, which had a simpler marginal increase. In this case, the absence of bunching may therefore reflect limited kink salience rather than weak incentives.

The 1935 threshold at 6,000 kronor fits a weak-incentive interpretation. The marginal tax increase was only around 0.45 percentage points, and the empirical evidence does not show clear bunching. One possible explanation is that the tax saving from precise adjustment was too small to generate a visible behavioural response. The 1935 threshold at 10,000 kronor is less clear. The marginal tax increase was larger, around 1.53 percentage points, but the evidence of bunching remains weak. One possible explanation is that, by 1935, reported income was embedded in more established assessment procedures, documentation requirements and local review. As discussed, the 1927 *taxeringsförrordning* formalised the role of local assessment boards and review boards, whilst declarations required detailed income classification, deductions, wealth inform-

¹⁴*Tantième* refers to profit-related remuneration, usually paid to directors, managers or senior employees as a share of company profits.

¹⁵Tax Assessment Ordinance

ation and, for some taxpayers, accounting documentation (Kungl. Maj:t, 1927; Palmgren, 1928; Stockholms stads statistiska kontor, 1918). The 1927 framework also strengthened the use of supplementary information from employers, public authorities and other institutions, which further limited the idea that reported income was freely chosen by taxpayers (Kungl. Maj:t, 1927). Davidson, 1934's contemporary assessment of the 1928 income-tax legislation points in the same direction: he emphasised the improved declaration apparatus and practical guidance, while also noting that more complex income types remained difficult to define, classify and fix in amount (Davidson, 1934). A broader explanation, discussed in Section 5.2.2, is that taxation was increasingly connected to the fiscal demands of a growing public sector. These interpretations should remain tentative, since the data do not allow taxpayer motives to be observed directly.

The threshold-by-threshold pattern therefore suggests that the weak overall evidence of bunching should not be explained in only one way. It is not strong evidence that high-income taxpayers were unaware of taxation, since tax rules and guidance were available. Nor should it simply be interpreted as a Type II error, or be only a question of statistical power. Instead, the results suggest that visible bunching required several conditions to coincide. The clearest case is the 1919 threshold at 10,000 kronor, where the marginal tax increase was relatively large and the tax rules were comparatively salient. At other thresholds, one or more conditions were weaker: the marginal tax increase was small, the relevant kink was harder to identify, or taxpayers had limited opportunity to adjust assessed income with precision. This interpretation should remain cautious, since the data do not show individual motives or differences in adjustment opportunities across taxpayer groups.

5.2.2 Responses beyond incentives

The previous section argued that the immediate conditions for bunching were unevenly present across thresholds. However, the weak evidence of bunching at the 1935 10,000 kronor threshold suggests that incentives and salience alone may not fully explain the results. Even where the marginal tax increase was relatively substantial, visible threshold-based adjustment remained limited. This raises a broader question: whether tax behaviour in early twentieth-century Sweden was shaped not only by incentives and administrative constraints, but also by the wider political and social context in which taxation operated.

Research on tax compliance suggests that taxpayer behaviour is not determined only by audit probabilities or financial incentives. It can also depend on legitimacy, expectations about other taxpayers and perceptions of state capacity (Alm & Torgler, 2006; Frey & Torgler, 2007; Pirttilä & Selin, 2011; Torgler, 2007). For the Swedish case, enforcement and legitimacy should therefore not be treated as competing explanations (Jansson, 2018; Nistotskaya & D'Arcy, 2018). Taxpayers may comply because evasion is difficult, but also because taxation is viewed as a legitimate obligation or because contribution is expected from others.

The normative context may therefore matter for interpreting the results. Contemporary discussions of taxation framed income taxation in terms of tax capacity and the distribution of burdens (see e.g. Davidson, 1922). Progressive taxation was not only a technical question of schedules and thresholds, but part of a political debate about the role of the state and legitimate contribution. Sweden's high-compliance tax state has been linked to long-run monitoring capacity, information gathering and direct fiscal relations between state and taxpayers (Nistotskaya & D'Arcy, 2018; Torgler, 2007). This is not direct evidence of the motives of taxpayers in Djursholm, Östermalm or Saltsjöbaden, and it should not be treated as such. However, it

provides relevant context for interpreting the absence of bunching. If taxpayers expected income to be visible, assessments to be reviewed and others to be subject to similar procedures, then precise manipulation around a single threshold may have been less attractive or less feasible.

At the same time, these ideas were contested. The founding of *Skattebetalarnas Förening* shows that taxpayers did not necessarily share the same view of fairness or redistribution. Rather than supporting progressive taxation, the organisation emerged partly as a response to growing tax burdens and represented groups concerned about the expansion of taxation (*Skattebetalarnas Förening*, 2021). The existence of such organisations therefore does not demonstrate broad agreement about tax justice. Instead, it suggests that taxation had become politically salient enough to generate competing political positions.

Taken together, this does not imply that wealthy taxpayers accepted progressive taxation willingly, nor that they refrained from avoidance. It suggests instead that taxation could be understood simultaneously as an obligation, a fairness issue and a source of conflict (*Besley*, 2020; *Jansson*, 2018). The evidence in this thesis cannot identify individual motivations directly, but it does indicate that the absence of bunching should not automatically be interpreted as indifference to taxation.

5.3 Implications for the Inequality Literature

This section addresses the third research question: what do the observed behavioural responses to marginal tax thresholds imply for our understanding of the decline in income inequality in the early twentieth century? The results speak to an important concern in the top-income literature: tax-based inequality series may partly reflect changes in reported income rather than changes in the actual distribution of economic resources (*Atkinson*, 2004; *Atkinson et al.*, 2011; *Piketty & Saez*, 2006; *Saez et al.*, 2012). If high-income taxpayers responded to progressive taxation by moving reported income below marginal tax thresholds, then part of the decline in recorded top incomes could be a tax-record artefact.

The analysis tests one concrete version of this concern: whether taxpayers clustered just below marginal tax thresholds. The evidence is uneven: some thresholds show bunching, but this pattern is not systematic across years or thresholds. The results therefore provide little support for the idea that the early decline in Swedish income inequality was primarily driven by threshold-based manipulation of reported income. This does not rule out other responses, such as longer-run behavioural adjustment. It only shows that precise bunching below the thresholds examined here was not a general feature of the data.

The findings also fit a longer Swedish chronology of tax responsiveness. Later Swedish tax evasion became more visible under the much higher tax regime of the 1970s, when offshore opportunities and currency movements created new channels for avoidance (*Giddey & Wendschlag*, 2022). The weak and uneven bunching found in this thesis therefore suggests that the early twentieth-century tax system had not yet generated the kind of strong behavioural responses associated with Sweden's later high-tax period.

This also suggests that the Swedish case should be distinguished from countries where progressive taxation became a more powerful redistributive instrument earlier in the twentieth century. In Sweden, marginal tax rates remained comparatively low during much of the period studied here, and the selected thresholds often involved modest marginal-rate changes (*Du Rietz et al.*, 2013; *Henrekson & Stenkula*, 2015). Taxa-

tion may therefore have played a less direct role in the Swedish equalisation process between 1910 and 1950 than in France, the United States or possibly Britain, where higher top rates made progressive taxation a more central mechanism of redistribution (Atkinson et al., 2011; Piketty, 2003; Piketty & Saez, 2006; Scheve & Stasavage, 2016). The Swedish decline in top incomes is therefore more plausibly interpreted through a combination of falling capital incomes, changing wealth concentration, economic shocks and later wage compression, rather than through strong short-run tax responses around marginal thresholds (Roine & Waldenström, 2008, 2010).

The broader implication is therefore that Sweden's early twentieth-century decline in recorded top incomes should not be explained too readily as a reporting artefact. The findings do not show that Swedish tax records were free from avoidance or underreporting, but they provide little evidence that high-income taxpayers systematically moved reported income below marginal tax thresholds. Taxation may still have mattered through broader and longer-run channels affecting capital accumulation, wealth transmission and the persistence of high incomes, but the results do not support the view that the early decline in recorded income inequality was largely driven by visible short-run bunching around tax thresholds. The results therefore sit between two interpretations: they are not a pure null finding, since some thresholds show evidence of bunching, but they do not support the view that the early decline in recorded income inequality was largely a tax-record artefact driven by threshold-based changes in reported income.

6 Concluding Remarks

This thesis has examined whether high-income earners in early twentieth-century Sweden responded visibly to marginal tax thresholds. Using individual-level observations from Swedish taxation lists for Djursholm, Östermalm and Saltsjöbaden in 1915, 1919, 1927 and 1935, it tested whether reported incomes clustered around selected institutional tax kinks. The purpose was to assess whether one specific behavioural channel – precise adjustment of reported income around tax thresholds – can be observed in historical tax records.

The first research question asked whether there is evidence of bunching at marginal tax thresholds among high-income earners. The results suggest that threshold-based responses existed in some cases, but not as a general pattern across years and thresholds. The clearest and most stable evidence appears at the 1919 10,000 kronor threshold, while the 1927 3,000 kronor threshold also shows evidence of bunching but with greater sensitivity to specification choices. For the remaining thresholds, the evidence is weaker and does not support clear conclusions of systematic adjustment. Taken together, the results indicate that visible threshold-based responses were limited and unevenly distributed rather than a general feature of the historical tax records.

The second research question asked why such responses appear limited. The results suggest that no single explanation is sufficient. At some thresholds, marginal incentives were probably too small to generate visible adjustment; at others, the relevant kink may have been less salient or harder to act upon. The thresholds that show evidence of bunching fall before the new *taxeringsförrättning* was implemented in 1928, suggesting that changes in administrative control may have been relevant. This does not mean that earlier taxpayers could freely choose reported income, since the pre-1928 system also relied on declarations, local assessment

and review. Rather, the results suggest that reported income may still have been somewhat more adjustable before the later framework consolidated administrative control. The absence of systematic bunching should therefore not be read as evidence that taxpayers were unaware of taxation or indifferent to tax incentives. Instead, it suggests that threshold-based adjustment was possible in some cases, especially salience aligned, but that it was not a general or stable feature of high-income tax reporting once viewed within the changing institutional structure of Swedish tax assessment.

The third research question asked what the findings imply for the interpretation of inequality decline. The results do not show that Swedish tax records were free from avoidance, evasion or underreporting. They do, however, provide little support for the claim that falling recorded top incomes were mainly produced by taxpayers relocating income below statutory thresholds. The decline is therefore more plausibly understood through broader structural mechanisms, including changes in wealth concentration, the development of progressive taxation and later wage compression. Taxation may still have mattered, but more likely through gradual and institutional channels than through visible short-run bunching around the thresholds examined here.

The thesis contributes methodologically by showing how bunching analysis can be applied to historical tax records, while recognising the limits imposed by smaller samples, archival source structures and historically specific assessment procedures. Empirically, the thesis contributes new individual-level evidence from Swedish taxation lists, including 7,942 observations transcribed for this thesis. Conceptually, it shows that modern bunching methods can be useful in economic history, but only when interpreted in relation to the institutions that produced the data. In this case, the absence of systematic bunching is not merely a null result. It provides evidence about the conditions under which high-income taxpayers did, or did not, translate tax incentives into observable changes in reported income. The results therefore matter not only for Swedish inequality history, but also for how modern behavioural tax methods can be used in economic-historical research.

A natural extension would be to increase the number of observations. One challenge in this thesis has been the trade-off between statistical power and historical specificity. Analysing thresholds separately preserves differences across years, reforms and local settings, but reduces the number of observations available around each threshold. Future research could address this by digitising additional taxation lists or by using taxation calendars.¹⁶ A larger dataset would make it possible to examine additional thresholds and assess whether the limited bunching found here was specific to the selected high-income areas or more characteristic of early twentieth-century Swedish taxation. With more observations, it would also become possible to conduct subgroup analyses, for example comparing salaried taxpayers, business owners, self-employed taxpayers and capital-income recipients. This would help clarify more directly whether the uneven responses found here reflect differences in income type or taxpayer flexibility, and would further clarify the role of taxation in Sweden's early twentieth-century inequality decline.

¹⁶Taxation calendars were printed publications listing assessed taxpayers, often including names, addresses and taxable income or tax-related information.

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A AI statement

During the writing of this thesis, AI tools – most notably ChatGPT – were used in limited contexts related to troubleshooting R code for data cleaning, bunching estimation, robustness checks and visualisation. ChatGPT was also used to resolve occasional LaTeX formatting errors. The thesis text was not generated by AI, although AI was used for limited language editing, including grammar, clarity and occasional synonym suggestions.

B Djursholm Commercial

This advertisement from Djursholms Aktiebolag illustrates how Djursholm was presented as an affluent residential environment in the early twentieth century. Alongside schools, electricity infrastructure and transport links, the advertisement explicitly promotes billiga skatter ("low taxes") as an attractive feature of the municipality. The inclusion of taxation in a commercial advertisement suggests that taxes formed part of the public image and appeal of the area, indicating that taxation could be visible and relevant to residents beyond formal tax legislation and administrative documents. In the thesis, this material is used as an illustrative example supporting the argument that tax considerations may have been salient in affluent environments, rather than as direct evidence of taxpayer behaviour or motives.

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Djursholms Villastad

Sveriges bäst ordnade villastad.

Omkring 4,000 inv., öfver 25,000,000 kr. taxeringsvärde.

Billiga skatter. Djursholms kommun är största delägare i Djursholms Aktiebolag, hvarför detta icke är ett spekulationsföretag i likhet med öfriga villastäder, enär större delen af vinsten kommer villaägarne till godo i form af billigare skatter m. m.

Djursholm är den enda af Sveriges villastäder som har egen

Samskola med dimissionsrätt.

Nytt, ståtligt och tidsenligt skolhus.

Djursholms kommun har eget elektricitetsverk. Elektrisk ström för kokningsändamål under dagen endast 9 öre per kilowatt. Elektriska tåg från kl. 6 f. m. till kl. 1 på natten. Fjorton hållplatser inom samhället.

Väbelägna tomter till salu.

Djursholms Aktiebolag åtager sig byggandet af villor till billigaste priser och fördelaktiga betalningsvillkor.

Villor på 9 rum, kök, värmeledning, W. C., elektr. belysning m. m. med tomt å 2,000 kvm. från **28,000 kronor**.

Villor på 6 rum med tomt från **21,000 kronor**.

Full garanti för solidt arbete. Mindre än hälften erfordras kontant.

Vidare å Djursholms Aktiebolags kontor i Djursholms slott.

Riks och Allmänna telefon.

Upplysningar lämnas äfven i Aktiebolaget Sandbergs bokhandel, Sturegatan 8.

60 b.

C Robustness Checks

This appendix reports robustness checks for the bunching estimates presented in the main analysis. The baseline specification uses a bin width of 50 kronor, a bandwidth of 1,500 kronor, an excluded region of 300 kronor around the threshold, and a third-order polynomial counterfactual. To assess whether the results depend on these choices, the estimates are recalculated using alternative bin widths, bandwidths, excluded regions, and polynomial orders.

The purpose of these checks is not to identify a single preferred estimate, but to assess whether the main conclusions are sensitive to reasonable changes in the empirical specification. This is particularly important because the analysis uses historical tax records, where the number of observations close to each threshold is limited and where the estimated counterfactual distribution may be affected by the choice of bandwidth and polynomial order.

C.1 Baseline estimates

Table 4 reports the baseline bunching estimates and bootstrap confidence intervals for all thresholds examined in the analysis.

Table 4: Baseline bunching estimates

Threshold	Excess mass	Normalised excess mass	Bootstrap SE	95% CI
1915: 5,000 kr	7.13	1.39	7.37	[−6.06, 22.02]
1919: 6,000 kr	24.85	3.16	9.68	[6.36, 44.58]
1919: 10,000 kr	21.29	3.39	8.83	[5.97, 39.94]
1927: 3,000 kr	80.48	2.58	19.69	[41.14, 120.64]
1927: 10,000 kr	3.86	0.66	7.28	[−8.55, 17.52]
1935: 6,000 kr	15.14	1.02	11.38	[−10.62, 37.57]
1935: 10,000 kr	1.81	0.24	7.60	[−13.62, 19.24]

Notes: The baseline specification uses a bin width of 50 kronor, a bandwidth of 1,500 kronor, an excluded region of 300 kronor, and a third-order polynomial counterfactual.

The baseline results show that three thresholds are statistically distinguishable from zero: the 1919 threshold at 6,000 kronor, the 1919 threshold at 10,000 kronor, and the 1927 threshold at 3,000 kronor. The remaining thresholds have positive point estimates, but their confidence intervals include zero. They should therefore be interpreted as weaker or statistically inconclusive evidence of bunching.

C.1.1 Pooled specification

Table 5: Pooled bunching estimate

Excess mass	Normalised excess mass	Bootstrap SE	95% CI	Positive specifications
153.88	1.95	27.86	[96.45, 205.61]	101/108

Notes: The pooled estimate combines observations from all year-threshold combinations after normalising income relative to each threshold. The baseline specification uses a bin width of 50 kronor, a bandwidth of 1,500 kronor, an excluded region of 300 kronor, and a third-order polynomial counterfactual. Positive specifications refer to the number of alternative robustness specifications in which the estimated excess mass is positive.

The pooled estimate indicates an excess mass of 153.88 taxpayers, with a normalised excess mass of 1.95. The bootstrap confidence interval ranges from 96.45 to 205.61 and therefore excludes zero.

C.2 Sensitivity to specification choices

Table 6 summarises how the estimated excess mass changes across alternative specifications. The table reports the minimum and maximum excess-mass estimate across the robustness checks, together with the number of specifications in which the estimated excess mass is positive.

Table 6: Robustness of excess-mass estimates across specifications

Threshold	Minimum estimate	Maximum estimate	Positive specifications
1915: 5,000 kr	−40.13	13.93	90/108
1919: 6,000 kr	−98.17	65.08	95/108
1919: 10,000 kr	−29.21	58.14	105/108
1927: 3,000 kr	−270.59	304.20	96/108
1927: 10,000 kr	−18.24	13.82	101/108
1935: 6,000 kr	6.96	90.17	108/108
1935: 10,000 kr	−39.46	28.85	85/108

Notes: The table reports the range of excess-mass estimates across alternative bin widths, bandwidths, excluded regions, and polynomial orders. The 108 specifications combine alternative bin widths, bandwidths, excluded regions and polynomial orders.

Table 6 shows that the robustness checks generally support a cautious interpretation of the results. The 1919 threshold at 10,000 kronor is the most stable positive finding, with positive estimates in 105 of 108 specifications. The 1919 threshold at 6,000 kronor and the 1927 threshold at 3,000 kronor are also positive across most specifications, but their wide range of estimates suggests greater sensitivity to modelling choices. The 1935 threshold at 6,000 kronor is positive in all specifications, but since the baseline confidence interval includes zero, it should be interpreted as suggestive rather than statistically clear evidence. Overall, the robustness checks indicate that bunching appears at selected thresholds, but not as a general or stable pattern across all years and specifications. For the remaining thresholds, the robustness checks do not reveal a clear or stable pattern of bunching. Some specifications produce positive estimates, but the estimates are either sensitive to modelling choices or accompanied by baseline confidence intervals that include zero.

Overall, the robustness checks reinforce the main conclusion of the thesis. There is evidence consistent with bunching at selected thresholds, especially the 1919 threshold at 10,000 kronor, which is the most stable positive finding. The 1919 threshold at 6,000 kronor and the 1927 threshold at 3,000 kronor are statistically significant in the baseline specification, but the robustness checks indicate greater sensitivity to specification choices. The results should therefore be interpreted cautiously: Swedish high-income taxpayers may have responded to particular tax kinks in some cases, but precise adjustment around marginal tax thresholds was not consistently visible across all years and thresholds.