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Income Inequality and Political Polarisation

An analysis of the relationship in the Swedish setting between 1980-2020

By

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Abstract

This thesis examines to what extent income inequality has been associated with political polarisation in Sweden during the 1980-2020. The study examines both national and municipal level data to examine the relationship between the two concepts. The national data cover 1980-2020 while the municipal data cover 2011-2020. It employs quantitative methods such as multiple Ordinary Least Squares regressions and graphical methods to measure and visualise the association between income inequality and political polarisation. Three main findings were identified in the study. First, Income inequality and political polarisation has increased since the 1980s. Second, the strength of the association between income inequality and political polarisation appears scale dependent where national data indicates that the two concepts are positively associated while municipal level data suggests a negative association. Third, the strength of the relationship between income inequality and political polarisation is influenced and partly determined by other socioeconomic factors.

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AI Statement

AI has been used to explore the existence of additional data as well as exploring different commands for Stata. None of the text or code used in this thesis has been generated by AI.

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1 Introduction

During the 1900 leading to today Sweden has undergone several structural changes leading the country from one of the poorest countries in Europe lagging behind industrial leaders, to one the wealthiest and most democratic country in the world. Alongside increasing living standards and sustained economic growth, income inequality has experienced a continuous increase since the 1980s when a trend of decreasing income inequality was reversed (World Inequality Lab, 2018). Similar trends of increasing income inequality have been experienced across many developed economies and countries around the world (World Inequality Lab, 2018).

At the same time political polarisation has become an all more common characteristics of electoral systems and societies across the world. In the Swedish setting political polarisation has become increasingly more common in the societal debate often characterised by affective and ideological polarisation (e.g. Renström et al. 2020; Oskarson & Demker 2015). The political parties in the Swedish parliament have increased from five to eight, reflecting a broader ideological spectrum within parliament and across Swedish voters resulting to a more complex political landscape (Hellström & Lindhal, 2021).

In the Swedish setting, rising income inequality may be associated to political polarisation by widening social divisions and intensifying conflicts on economic policies such as redistribution. These conflicts risks weaken the political middle ground while perceived inequalities may shape political attitudes and electoral behaviour.

Although Sweden continues to exhibit comparatively low levels of income inequality by international standards it still remains an important case to study. Its historical characteristics with low levels of income inequality, high social trust, and a concentrated political spectrum makes the historical shift even more notable. Furthermore, if rising income inequality is associated with political polarisation even with low levels of inequality, it suggests that distribution change may undermine political unity and stability in creating a more divided political spectrum and electoral base.

This study therefore examines the extent of which income inequality has been associated with political polarisation in Sweden over the period 1980-2020. The analysis will be divided into two parts, one focusing on national level covering 1980-2020 and one on municipal level between 2011-2020. Income inequality is measured using different variables such as Gini coefficient and examines the relationship between itself and political polarisation at national and municipal level.

Understanding this relationship is important for both policy and academic reasons. A comprehensive understanding is needed to address the issues and if income inequality is associated with political polarisation this may have implications for democratic stability, economic performance, and overall societal structure. Furthermore, given the international trend of increasing income inequality it is of extra important to understand the association between the two phenomena.

1.1 Aim and scope

Given the development of income inequality and the political landscape over time, the study aims to explore how income inequality has been associated with ideological political polarisation amongst Swedish voters represented by electoral success of political parties in the Swedish national elections over time. Furthermore, the study aims to determine and examine the relationship in terms of associations rather than determining causal relationship between the two concepts due to the complexity of both concepts and potential difficulties in determining the direction of causality.

The scope of the study is to examine the association in the Swedish setting using Swedish voters as the population for the study. Furthermore, the scope is to analyse ideological political polarisation among voters based on electoral results and support for the different political parties and blocks. The analysis is divided into two parts, one analysing the relationship on national level covering the 1980-2020 and a second part analysing the relationship on municipal level during the 2011-2020. The time periods are chosen to enable an examination of the relationship over time as well to start the analysis from when the trend of decreasing income inequality was reversed. Furthermore, the time periods have been selected based on available data. The study will adopt multivariable Ordinary Least Squares regression models as well as graphical methods and bivariate analysis visualising the relationship between income inequality and political polarisation.

In order to achieve the overall aim of the study, the following research question will be examined and answered in this thesis:

“To what extent has income inequality been associated with political polarisation among Swedish voters during 1980-2020”

1.2 Research problem and relevance

The research problem that is being addressed in this study is increasing income inequality since the 1980s and to what extent this has been associated with political polarisation in Sweden. Existing literature argues that income inequality has been on the rise both globally and in Sweden (e.g. Karimi et al. 2024; Roine & Waldenström, 2011). Similar, literature on political polarisation in the Swedish context argues that different kind of political polarisation has been on the rise over the last couple of decades including both affective and ideological polarisation (e.g. Renström et al. 2020; Oskarson & Demker 2015). However, little of the existing literature has focused solely on the association between income inequality and political polarisation and especially in the Swedish setting during a longer time period. Therefore, this study contributes to the existing literature by focusing on the association between the two concepts in the Swedish setting on both national and municipal level during a long time period for national levels.

The relevance of this study can be summarised in several ways. First, both income inequality and political polarisation are current issues that has experienced a steady increase over time (World Inequality Lab, 2018; Center for Business and Policy Studies, 2021). Simultaneously political polarisation has gained attention and fuel from international events increasing the usage of the term and its relevance (Farjam et al. 2024). Second, both of the phenomena constitute threats to societal structure and democratic principles. Third, understanding the associations between income inequality and political polarisation is an important step to

addressing the issues on both policy level and on societal level. And finally, Sweden has not been in the focus for studies examining the association between income inequality and political polarisation to any larger extent.

1.3 Definitions

In this paper there are two main concepts in need of a clear definition. The first concept is income inequality which the Organisation for Economic Co-operation and Development (n.d) defines as “the difference in how income is distributed among the population”. This is the conceptual definition that will be used in this paper where increasing income inequality refers to increasing inequality in how the income is distributed among the population.

The second fundamental concept in the paper is political polarisation. The common and general definition of political polarisation is a divergence in ideological positions between politicians, political parties, and voters, often leading to more extreme ideological positioning (e.g. Han, 2015; Renström et al. 2020). When discussing political polarisation, it is important to note that there are different kinds, such as affective polarisation measuring party voters’ behaviour and opinions towards their own and opposing political parties and their base Renström et al. (2020). Additionally, party-system polarisation refers to the ideological divergence of political parties towards the extreme left or right side (Dalton, 2021). This study defines political polarisation as the ideological dispersion amongst Swedish voters based on election results by measuring the ideological dispersion in electoral support. Thus, no other form of polarisation is measured.

1.4 Outline of the thesis

The thesis is outlined the following way. First, a historical context will be provided to understand the context of Sweden and its historical changes. The different concepts and models will be briefly described without going into too many details since the overall aim of the paper do not require more than general knowledge of historical events.

Following the historical context, the existing literature and theories will be addressed, and the current debate will be identified to create a comprehensive and holistic understanding of income inequality and political polarisation and their relationship. The structure within each subheading will be the following: starting with a summary of the main debate and consensus in the existing literature, a brief description of the global level, a heavy focus on Sweden and the development and discussion over time.

After the existing literature, the data and methodology will be addressed in two separate sections. The empirical results will be discussed next, structured into three different sections. The empirical results on national level will be presented first followed by the findings on municipal level. Both results will be addressed in the last part of the empirical findings under discussion where the results will be connected to existing literature and theories. To conclude

the thesis there will be a section for concluding remarks and practical implications and future research.

2 Historical context

In global measures, Sweden is part of a group of countries that are among the least unequal countries in the world. The development of income inequality saw a steady decrease during the 1900s but during the 1980s the national trend ended and instead an increase in income inequality was visible (World Inequality Lab, 2018). This section aims to provide a brief background to the historical context.

During the start of the 1900s Sweden was lagging behind industrial leaders and neighbouring countries, failing to provide work opportunities in a turbulent labour market resulting in mass emigration (Lundberg, 1985). As a response to issues such as high unemployment and inequality new policies that is known as “The Swedish Model” was introduced based on previous and new agreements and political ambitions (Lundberg, 1985).

The Rehn-Meidner model is the economic foundation of the model, created by the economists Gösta Rehn and Rudolf Meidner as a middle way instead of the Keynesian model or a more market-based economy (Erixon, 2010). The model, and ultimately the Swedish model, aimed for active labour-market policies to reach full employment, equal wage policies, low inflation and price stability, with a restrictive macroeconomic policy with high economic growth (Anxo & Niklasson, 2006). This should result in limited

The model was during a long time considered to be working with high employment and decreasing income inequality, however during the 1990 a domestic crisis hit reversing the trends and instead acting as fuel for increasing unemployment and increasing income inequality which is still on the rise today (Anxo & Niklasson, 2006; World Inequality Lab, 2018). Prior to the 1990 crisis, repeated devaluations of the Swedish krona aimed at strengthening industry and countering wage inflation contributed to low interest rates, rapid credit expansion, and rising asset prices, developments that ultimately fuelled the crisis (Anxo & Niklasson, 2006; Domeij & Flodén, 2010).

The changing macroeconomic policies and political decisions during this time could be seen as a change in the political course away from the “traditional” Swedish model, reversing the decreasing unemployment and income inequality (Therborn, 2020).

3 Literature review

3.1 Income inequality over time in the Swedish context

Income inequality has long been considered both a short- and long-term issue, frequently issued in global risk reports prepared by the World Economic Forum (Polacko, 2021; World Economic Forum, 2026). Furthermore, the development of income inequality has often been characterised by fluctuation over time and a slow but steady increase (Polacko, 2021). On a global level income inequality has increased since the 1980s with a moderate growth across the European region (World Inequality Lab, 2018). The same trend can be seen in Sweden from the 1980-1990 who previously experienced a decrease leading up to the continuous increase (World Inequality Lab, 2018).

The general consensus is that income inequality in Sweden and globally has increased since the 1980s and that a growing gap within the population can be seen. Different mechanisms behind increasing income inequality are analysed by the existing literature, where increasing gaps in capital gains, disposable income, earning inequality, and the role of geography is discussed (e.g. Roine & Waldenström, 2011; Karimi et al. 2024; Domeij & Flodén, 2010; Erlström et al. 2025).

From a political historical perspective, one prominent explanation of what is behind the increasing gap is contributed to the shift in political policy which enabled mechanism of increasing income inequality (Therborn, 2020; Blomquist et al. 2001). Therborn (2020) argues that a political shift caused the reversal of decreasing income inequality through a broad political underestimation of the power of financialisation and financial capital which sped up financialisation and de-industrialisation increasing reliance on financial markets. Furthermore, tax rates and transfer reforms were introduced simultaneously as a heavy reliance on financial markets grew which enabled a more rapid growth and concentration of capital income from the 1980s and onwards which is argued as one of the main mechanisms behind income inequality (Blomquist et al. 2001; Therborn, 2020). Similarly, Roine and Waldenström (2011) argues that the increase of capital gains since the 1980 has led to increased income inequality and that the skewedness within the society appears to be the main mechanism of how capital gains affects income inequality. Taken together, this literature suggests that the political and institutional changes since the late 1900 have primarily operated through increased capital concentration and financialisation in increasing income inequality.

Karimi et al. (2024) highlights the role of disposable income and explains that the Gini coefficient has increased from the 1990s for disposable income together with the gap between income percentiles where the top earners accounts for approximately 40% of the increase in income inequality in the Swedish context. The debate on growing gaps due to increasing inequalities in disposable income is supported by reports from The Swedish Fiscal Policy Council (2024) and The Institute for Evaluation of Labour Markets and Education Policy (2025) that shows increased disposable income for the population as well as a growing gap for disposable income and income inequality as a whole in the population. The argument in the above presented literature indicates that the growing gap in disposable income is one main mechanism behind increasing income inequality.

The existing literature on Swedish income inequality is similar to the debate on global level where Chrisendo et al. (2025) cements that income inequality has increased across the majority of the world while the gross national income has increased simultaneously. In a paper by the Economic Policy Institute (2022), the case of US is examined and concluded that wages for the top earners have increased with over 200% while the majority of the population has experienced increases around 28% over the last decades. Pointing to a growing gap in earnings between the population as seen in the literature on the Swedish context.

Domeij and Flodén (2010) agrees that earning inequality in Sweden experienced a constant increase from the 1990 crisis where movements in and out of the labour market was a driver for the increased inequality. Which could be linked to the increasing unemployment rate as a result of the crisis (Anxo & Niklasson, 2006). Domeij and Flodén (2010) further argues that the main driver of earning inequality was increasing inequalities in residual earnings referring to wider dispersion in earnings between workers with similar skills and experience. The

authors describe how earning inequality based on labour market challenges have acted as a mechanism behind increasing income inequality.

Another variable that is discussed in connection to income inequality in the existing literature is the role of geography. Dahlberg et al. (2024) finds a growing gap in income between municipalities with varying levels of rural and urban areas arguing that municipalities with higher level of urbanisation experience higher income than municipalities with lower levels of urbanisation. This relationship has increased over time while income differences within municipalities have converged since the 1990s (Dahlberg et al. 2024).

Contrasting, Erlström et al. (2025) argues that regional inequalities decreased while local inequality has increased, further arguing that urban areas experience more uneven income distribution. The most disruptive period is described as the 1990s with rising unemployment, where increased polarisation took part between low-skilled labour and higher skilled labour that experience an easier time locating new jobs (Erlström et al. 2025). This was especially noticeable on local levels in urban areas leading to higher inequality while rural areas experienced lower levels of inequality between themselves (Erlström et al. 2025). The effect of unemployment and movements in and out of the labour market is similar to the conclusions made by Domeij and Flodén (2010) where this event had strong effect on earning inequality and income inequality at large. The literature thus displays two sides of whether inequalities has converged or diverged across and within municipalities. Furthermore, the labour market is described as a determinant for the differences between and within municipalities.

Finally, the literature presented above creates a unified image of income inequality in Sweden. Where the difference between the existing literature is the underlying mechanisms rather than questions on whether or not income inequality has increased in Sweden. The literature identifies several key mechanisms, including growing disparities in disposable income, rising earning inequality, labour market transformations, and increased concentration of capital income. The thesis builds on the existing literature by testing to what extent these mechanisms are associated with political polarisation. It does so by distinguishing between broader and narrower measures of income inequality to test to what extent income inequality is associated with political polarisation.

3.2 Political polarisation and the Swedish political landscape

Much of the literature on political polarisation agrees that the phenomena, regardless of kind, have a negative impact on societies in many ways, for example by weakening democracies, limiting political accountability, and hampering economic performance (Patkós & Plesz, 2025; Winkler, 2019). In an international context, political polarisation has increased over the last decades with Europe experiencing a rightward shift (Wagner & Meyer, 2017). The growing polarisation on global level has been visible in the Swedish debate, gaining fuel from global events such as the growing success of populist political ideas and leaders (Center for Business and Policy Studies, 2021). Furthermore, the concept of polarisation in political and social issues has gained traction and its usage has increased in Swedish media over the last couple of years (Farjam et al. 2024).

Different types of political polarisation in Sweden have been addressed and analysed in the existing literature. Renström et al. (2020) argues that affective polarisation, party voters' behaviour and opinions towards their own and opposing political parties and their base, has increased over time. Further supported by Renström et al. (2021) arguing that citizens hold a more positive view of their own political group and also displaying reluctance to socialise with members of the opposite group. Reiljan and Ryan (2021) further argues that in the case of Sweden, ideological standpoints of political parties is the main deterrent for attitudes towards different parties, rather than partisan identity, ultimately influencing affective polarisation something that is especially true in the case of the Sweden Democrats. The literature presented, suggests that affective polarisation has increased and further suggests that the ideological distance between different parties and voters is a key mechanism behind the increase.

Similar trends are experienced when measuring ideological distance between political parties, with an increase in ideological political polarisation with increasing importance of cultural values (Center for Business and Policy Studies, 2021). However, despite the development of ideological polarisation between political parties, a report from the Center for Business and Policy studies (2021) argues that from an historical perspective with historical levels the development is not as dramatic as first could be interpreted or understood in the societal debate.

As with income inequality, geography and the level of urbanisation is one aspect that is discussed as a deterrent for political polarisation. Urbanisation is defined as the concentration and movement of people from rural to urban centres which leads to a change in the land usage and a shift from rural to urban lifestyle and industries, a phenomenon that has occurred throughout a majority of human history (Evers et al. 2024; Aslam et al. 2025). In the European context there is a gap between rural and urban areas in political disenchantment, rural areas are more likely to be distrusting towards political systems and more drawn towards anti-immigration and anti-EU views and more likely to be drawn to vote for populist and anti-system parties and issues (Kenny & Luca, 2021). Roberts (2022) argues that populism is by its nature polarising due to its "us" vs "them" mentality, thus growing support for populist parties is itself a driver and risk of increased political polarisation on a global level. This literature indicates that rural areas in the European setting have a higher degree of political disenchantment and therefore increased likelihood to showcase higher degree of polarisation in elections.

Huijsmans et al (2024) argues that a growing divide between urban and rural election support is connected to the size of the electoral system and the number of political parties, where a multi-party system enables a broader geographic support while fewer parties like the US tends to attract support from either urban or rural areas. In the case of Sweden, Öhrvall et al. (2024) argues that Sweden has not experienced the same polarisation between rural and urbanised areas that has been seen in other countries, instead they argue that this type of polarisation has decreased over time with a few exceptions. These exceptions have taken place in recent years where the left party and the green party has seen increased support in urban areas while the Swedish Democrats has experienced increased support in all areas, but mainly in rural areas (Öhrvall et al. 2024). The same has been seen on the bigger political spectra with the middle-right block has seen higher support in rural areas and the middle-left block has seen increased support in urban areas (Öhrvall et al. 2024). The growing geographically centred support for newly establish green and right-wing parties can also be seen in global contexts as described

by Huijsmans et al. (2024). Thus, in the case of Sweden the electoral difference between urban vs rural does not have as much effect on political polarisation as in other countries.

Historically the Swedish political landscape has been characterised by two blocks, one socialistic and one non-socialistic block (Hellström & Lindhal, 2021). Elgenius and Wennerhag (2018) argues that during the last decades the Swedish political landscape underwent changes with clear examples in the growing number of political parties in parliament from five to eight and a shift from more traditional left-right socio-economic issues to be challenged by socio-cultural issues. Similarly described in a report by the Center for Business and Policy studies (2021) where the importance of cultural values has increased over time. The entrance of new political parties has had positive effect through greater representation but has also made it more difficult to form government and disrupted the traditional two “block” politics (Elgenius & Wennerhag, 2018; Hellström & Lindhal, 2021).

2010 is a clear example of this when the Sweden Democrats entered parliament (Hellström & Lindhal, 2021). Something that Oskarson and Demker (2015) argues created a “us” vs “them” mentality which was enabled by a convergence over time in ideological polarisation between the traditional left-right parties leaving room for new parties to express authoritarian attitudes fuelled by low political trust. Beyond new political entries the political environment has experienced a change in terms of political participations and its methods, with increasing citizen participation through new formal and informal movements and organisations and different actions such as petitioning and boycotting, which has been partly enabled by social media providing new ways of interaction and influence (Elgenius and Wennerhag, 2018).

Summarising the main mechanisms and the changing political landscape, the literature creates a picture of increasing polarisation and a dynamic and changing political landscape. Ideological differences between political parties and voters are indicated as a mechanism behind increasing affective polarisation and overall party-polarisation. Furthermore, the literature limits the geographical differences and the level of urbanisation within the Swedish context, unlike international context where the urban vs rural difference is significant. This thesis focuses on the mechanism of ideological distance of voters based on the success of parties in parliament while testing for geographic considerations and socioeconomic issues.

3.3 Relationship between income inequality and political polarisation

A significant body of literature examines the relationship between income inequality and argues for a relationship (e.g. Gunderson, 2022; Rodríguez-Pose, 2018). What separates the different sides in the global debate is the influence of other variables. One side argues that income inequality is a strong catalyst for driving political polarisation across both developed and less developed countries (Gu & Wang, 2022). Winkler (2019) further expands on the topic from a European context, arguing in favour of a correlation between the two concepts and that the probability of supporting political parties on either side of the political spectrum increases when the Gini coefficient increases.

On the other side, there is much literature that argues for a less strong relationship between income inequality and political polarisation and instead emphasises that other factors determine the strength of the relationship. Gunderson (2022) argues that the relationship is based on the most pressing election issues as well as the structure of income within the political bases. The results of Gunderson (2022) suggests that when these factors are strong, so is the relationship between income inequality and political polarisation and vice versa.

Similarly, Han (2015) argues that the permissiveness of electoral systems affects how strong the correlation between the two concepts is, showing a weak simple correlation between income inequality and political polarisation across different democracies. Suggesting that a more permissive electoral system allows for a stronger correlation between income inequality and political polarisation as the establishment of new more polarised parties is simpler. This literature shows that the strength of any association might be more related to the importance of socioeconomic issues and the dynamics of electoral systems.

There is extensive literature that adopts a broader focus describing how political polarisation is influenced and driven by economic challenges such as income inequality. Grechyna (2016) argues that one of the main determinants of political polarisation is economic polarisation and political trust and that high economic inequality increases political polarisation. Political trust as a result of economic inequalities enforces the argument made by Kenny and Luca (2021) that political disenchantment is a risk for broader political polarisation. Similarly, Frye (2010) argues that economic inequality often works as a social base for political polarisation and that large gaps in income within a society are features of a polarised political system but concludes that there are difficulties in determining the direction of causality. The literature above suggests that one key mechanism how of income inequality is associated with income inequality is by lowering political trust and creating a social base for growing political polarisation.

Similarly, Rodríguez-Pose (2018) describes “the revenge of the places that don’t matter” which refers to areas that has experienced years of decline and lagging behind after years of perceived economic and social neglect that are now “revolting” through elections with strong support for populism parties. As determined in the earlier section, populism is a mechanism for increases in political polarisation (Roberts, 2022). The political outcome with a more polarised political landscape and political distrust is one outcome of real and perceived economic inequalities according to Rodríguez-Pose (2018). This literature further strengthens the idea that economic inequalities in form of income inequality is associated with political polarisation by creating political distrust and discontent.

Concluding the literature on the relationship between income inequality and political polarisation the literature that there exists a relationship between the two variables, however the direction of the relationship is hard to determine as a result of the complexity of the concepts. However, the literature suggests that income inequality drives political discontent and risks creating a more polarised society when socioeconomic issues is pressing in elections suggesting that high income inequality may cause a widening in ideological stance between voters and parties. The thesis connects to the existing literature by testing several socioeconomic factors alongside more direct measures of income inequality to determine to what extent income inequality has been associated with political polarisation amongst Swedish voters.

3.4 Contribution to discussion

There exists, as demonstrated above, extensive literature on both income inequality and political polarisation and their development over time. Similar, there is extensive literature and studies analysing the relationship between the two using different factors to explain and control for the relationship. In the existing literature on the global level this relationship has been studied, this study can contribute and strengthen the conclusions made in those studies.

Contrasting, in the Swedish context there is not extensive literature on the relationship between the two and to what extent income inequality is associated with political polarisation. This study contributes with only focusing on the Swedish case, using the time period 1980-2020 to enable a long-term national analysis and the time period 2011-2020 for a municipal analysis. Furthermore, the national and municipal analysis allows for interpreting the associations on different scales and comparing differences between municipalities.

4 Data

4.1 Source material

To achieve the aim and answer the research question of the paper, several different data sources has been used to create the different variables that was used to produce the results. A thorough and comprehensive examination of different sources has been made to identify sources with high credibility and datasets that are representative and valid to use for this study. The datasets are secondary sources, that has previously been collected and used by other researchers. Instead of creating different variables consisting of different time spans and definition, the study has chosen to use sources and variables that covers the entire time period for national level and for municipal data. Due to the risk of having different measures which could affect the outcome of the study. The overall lack of data on municipal level prior to 2000-2010 is the reason that the second analysis of municipal level data covers the period 2011-2020.

The main source that has been used is Statistics Sweden (n.d). This source has been used to abstract several datasets which in turn has been used to create the variables used in this study. The main strength of the source and data is its reliability as a governmental agency for statistics as well as the extensive time period that the data constitutes. It is representative and deemed valid for the purpose of this study. One limitation of the source could be depending on how the data has been collected, if it uses surveys or access official records directly. This could lead to responder's bias, something that official records such as tax statistics would mitigate. Another limitation with Statistics Sweden data is the limited existence of municipal level data on economic inequality which unbaled using their municipal level data further back then 2011. Statistics Sweden data has been used to construct the polarisation index on both national and municipal level, income inequality variables on municipal level, Gini coefficient on municipal level, and socioeconomic factors on both municipal and national level.

As mentioned, political polarisation has been constructed using data from Statistics Sweden (n.d). Additionally, data from the 1999 – 2024 Chapel Hill Expert Survey trend file (Rovny et al. 2025) has been used to construct parts of the variable. The source is an academic project tracking political parties positioning for several countries across different topics, including ideology which is the data has been used. The ideological positioning score that has been used in this study has been constructed using the mean of each parties' ideological stance for seven observations in time: 1999, 2002, 2006, 2010, 2014, 2019, 2024 (Rovny et al. 2025). Using this dataset allows for a more nuanced and correct ideological score for each party than simply awarding every party a score at random which could result in unconscious bias and faulty results.

Data from The Standardized World Income Inequality Database version 8-9 (Solt, 2019) has been used to calculate the Gini-coefficient for Sweden covering 1980-2020. This source was

one of few sources that provided data on Gini coefficient for the entire period that is examined. The data consist of one hundred imputed values, therefore, as some values are statistically estimated the Gini-coefficient constructed from this data and used in this study is the average of all imputed values. The database itself uses several other sources to construct the imputed Gini values which is a strength since it provides a broad and comprehensive suggestion based on the existing data from sources such as OECD, World Bank, Eurostat, etc (Solt, 2019). There are some potential limitations of this source, the strength of using difference sources could be a limitation if the datasets behind it have different measurements and definitions of Gini coefficient. The temporary usage of estimations instead of observations for some years and the number of imputed values could also be seen as a limitation of the source. These issues are important to address and keep in mind when making conclusions from the results. However, the database is a valid due to its consistent methodology and its time-series coverage that is hard to locate elsewhere which is why the data is still valid and used in this study.

Two additional sources of data are the World Bank Group (2026) and the World Inequality Database (n.d). These sources are used to fill gaps where Statistics Sweden did not provide the data or did not provide the appropriate time period for the variables on national level. The World bank group is a credible source that consist of different international organisations with the goal to reduce poverty and promote shared prosperity in the developing world. This source provides data for many countries over extensive time periods. One limitation could be seen as only providing national data, however in the case of this study that is valid since the data is used for national unemployment data and not for municipal results. The second source, World Inequality Database provides similar data as the World Bank Group on national data for several countries, focusing instead on historical evolution of income and wealth distribution. Similar, one limitation could be the usage of this data beyond national level but since the usage of the data in this study is limited to national analysis the use of the data and source is valid.

4.2 Sample selection

Given the studies focus on Sweden all selections of and in the data has been to represent the scope and aim of the study. The sources and data explained above have been modified and choices have been made to create a more representative sample for this study. For starters, only political parties in the Swedish parliament that has been elected to parliament for several years is included in the dataset used to construct political polarisation on both national and municipal level which indicates both longevity and size of party. The reason for this is to enable a broader analysis of electoral patterns that is more representative for a majority of the Swedish voters. If all parties were to be included there is a risk of smaller “one issue” parties with more extreme placement on the ideological scale would create outliers that would affect the overall level of polarisation which is not representative.

Furthermore, since the variable for political polarisation only provides observations every third year in the beginning of the time period and every fourth year for the majority of the time span due to the frequency of elections the data for political polarisation will carry the last observation forward to the missing values. In some cases, this could be problematic for studies due to results become influenced and incorrect and show faulty relationships. Due to the nature of the variable and it being constant between elections this study will carry the observations forward to allow for more observation in the analysis. Furthermore, since the variable does not measure polarisation at societal level and instead in electoral results the

results will still be accurate to the levels of polarisation among Swedish voters based on electoral patterns. This procedure will be employed on both national and municipal level data.

There are some datasets that displays missing observations on national level. One of the variables are unemployment that has two gaps in the years 1981 and 1988 but despite this is reliable and propriate to use in this study since it is being used as a control variable and is consistently missing those values for national level. Similarly, the share of tertiary education used as a control variable is missing five observations for national level since it starts 1985. Missing values can also be observed on municipal level for unemployment where individual years within municipalities are missing. However, the missing values is consistent through all the analysis on national level which is why it is still used in this study.

4.3 Variables

To measure income inequality and political polarisation different measurements has been used to create the variables in the analysis. The study uses five different measures for income inequality. Three measures for income inequality are used for the analysis on both national and municipal level. The measures for income inequality are the independent variable. All variables used can be read from table 4.1 including construction, units, and more.

As seen in table 4.1 the Gini coefficient is consistently used for both national and municipal level analysis which is a commonly used measure of income inequality and measures the inequality of income distribution on a scale from 0-1 or in percentage between 0-100 where a higher number indicates higher inequality. It measures how much of the distribution is concentrated and a 1 indicates that all of the income is concentrated to one person and 0 a perfect distribution. The alternative measures of income inequality on both national and municipal level enables a narrower understanding of how the distribution of income is associated with political polarisation.

As seen in the literature review, parts of the existing literature argues that one mechanism behind overall increases in income inequality is the growing gap in earnings amongst the population, fuelled by the top earners experiencing more substantial increases in income than the rest of the population (e.g. Karimi et al. 2024). Therefore, the usage of different measures of income inequality enables the possibility to examine how income inequality has been associated with political polarisation on a broader scale and more in detail how differences between income groups have affected the relationship.

One important difference between the income inequality measurements is when they are measured. On national level the measure for income share for the top 10% and the income share for the bottom 50% is measured pre-tax and transfers which often resulting in higher levels of inequality while the Gini-coefficient represents equalised household disposable income after tax and transfers. Something that generally lowers the level of inequality. On municipal level, all variables for income inequality are measured after taxes and transfers. One similarity across the dataset is that capital gains is excluded which generally also tend to increase the levels of inequality. The construction of data in pre- or post-tax is something that affects the outcome of the results and could be one reason for why the precise level of some measures might vary between studies.

The construction of the variable measuring political polarisation is based on electoral data. The variable is constructed using a variation of the Dalton Polarisation Index that analyses

polarisation in party systems by measuring the distribution of the political parties amongst a left-right scale (Dalton, 2008). The Index ranges between 0-10 where 0 implies that all parties hold the same position and 10 is the opposite where the political parties are split between the two extremes (Dalton, 2008). Each political party in the Swedish parliament has been awarded an ideological score based on the Chapel Hill Expert Survey trend file (Rovny et al. 2025) followed by calculating the weighted ideological score for each party and the ideological centre for each year. This was used to calculate the distance from the middle for each party which was collapsed into one variable showing the general dispersion from the ideological centre for each year. That number represents the political polarisation and measures how far from the ideological middle the electoral results are which can be used to see if ideological distance increases over time suggesting on ideological political polarisation. This variable acts as the dependent variable in the analysis.

Several control variables have been introduced in the analysis on both national and municipal level. The purpose of this is to control for other factors that can influence and affect the relationship between income inequality and political polarisation and instead influence political polarisation. The controls are chosen to represent socioeconomic factors that could influence the association.

Two control variables are used for national level analysis. First, the share of tertiary education in the population is used to account for structural change in the society that can influence attitudes and voting behaviour over time. This variable may act as confounder as changes in educational attainment can affect both income inequality and political polarisation. However, tertiary education could also act as a mediator if income inequality influences the level of educational opportunities and attainment. The second control variable on the national level is unemployment, defined as all those in the population of working age currently not employed and actively looking for employment (International Labour Organisation, n.d). Unemployment enables controlling for macroeconomic trends and crisis like economic downturns and labour market instabilities. The control variable may, similar to the share of tertiary education, act as both as a confounder and a mediator by shaping both income inequality and political polarisation while being driven by inequalities.

For municipal level analysis both share of tertiary education and unemployment was used and constructed in similar ways except for including the 290 different municipalities instead of national levels. Another difference is the construction of unemployment that on municipal has been constructed from three different datasets from Statistics Sweden (n.d) and covers a broader definition than on national level due to the data consisting of either employed or unemployment which does not capture students for example. However, this variable is still interesting and measures the development of unemployment over time. Similar to the national level of unemployment, municipal unemployment can act as both a mediator and be a confounder in the relationship between income inequality and political polarisation.

Additionally, there were three more control variables on municipal level analysis. First there is a population size index to account for the size and population of each municipality to see to what extent municipality size is related to political polarisation. The index is based on comparing sizes between municipalities and awarding each municipality a number between 0-1 based on size. The index most likely works as confounder since size of municipality may shape electoral dynamics independently of income inequality.

Second, a variable for average wage for each municipality was used, displayed by the average salary in each municipality. Third and last, was a variable accounting for the numbers of employees in each municipality to see if there is any difference between municipalities with high number of employees and political polarisation and how they have developed over time. Both control variables most likely acts as possible mediators by income inequality influencing local labour market strength, employment conditions, and wage structure.

The reason the study uses two control variables on national level and five on municipal level is due to what is being measured. National level results are broader while municipality level analysis provides a narrower comparison between municipalities where it is easier to analyse additional socioeconomic factors such as urbanisation and average salary and how they affect political polarisation.

Table 4.1 Compressed Table of Variables Used

Variable:	Source:	Level:	Year:	Units:	Construction:	Missing values %:	Expected sign:
Gini Coefficient	The Standardized World Income Inequality Database version 8-9 (Solt, 2019)	National	1980-2020	Index (0-1)	Measure of income inequality, based on distribution of income across individuals - post tax and transfers	0%	+
Gini Coefficient	Statistics Sweden (n.d)	Municipal	2011-2020	Index (0-1)	Measure of income inequality within municipality, based on distribution of income across individuals - post tax and transfers	0%	+
Income Share Top 10%	World Inequality Database (n.d)	National	1980-2020	%	Share of total national income earned by individuals in the top income decile - pre-tax and transfers	0%	+
Income Share Bottom 50%	World Inequality Database (n.d)	National	1980-2020	%	Share of total national income earned by individuals in the top income decile - pre-tax and transfers	0%	-
P90/10	Statistics Sweden (n.d)	Municipal	2011-2020	Ratio	Income at the 90th percentile divided by income at 10th percentile - post tax and transfers	0%	+
P90/50	Statistics Sweden (n.d)	Municipal	2011-2020	Ratio	Income at the 90th percentile divided by income at 50th percentile (Median Income) - post tax and transfers	0%	+
Political Polarisation	Statistics Sweden (n.d) & The 1999 – 2024 Chapel Hill Expert Survey trend file (Rovny et al. 2025)	National	1980-2020	Index (0-10)	Distance from the ideological middle for all parliament parties based on national electoral results	0% When value is being carried forward	Dependent Variable
Political Polarisation	Statistics Sweden (n.d) & The 1999 – 2024 Chapel Hill Expert Survey trend file (Rovny et al. 2025)	Municipal	2011-2020	Index (0-10)	Distance from the ideological middle for all parliament parties based on municipal electoral results	0% When value is being carried forward	Dependent Variable
Share of Tertiary Education	Statistics Sweden (n.d)	National	1980-2020	%	Share of individuals aged 18-64 with completed tertiary education	12%	- / +
Share of Tertiary Education	Statistics Sweden (n.d)	Municipal	2011-2020	%	Share of individuals aged 18-64 with completed tertiary education within each municipality	0%	- / +
Unemployment	World Bank Group (2026)	National	1980-2020	%	Share of labour force that is unemployed	5%	+
Unemployment	Statistics Sweden (n.d)	Municipal	2011-2020	%	Share of labour force aged 16-64 that is not employed within each municipality	9%	+
Population Size Index	Statistics Sweden (n.d)	Municipal	2011-2020	Index (0-1)	Population size ranking between all municipalities	0%	- / +
Average Salary	Statistics Sweden (n.d)	Municipal	2011-2020	SEK (per month)	Mean gross monthly salary per individual	0%	- / +
Numbers of Employees	Statistics Sweden (n.d)	Municipal	2011-2020	Count	Total Number of persons employed within each municipality (annual total)	0%	-

5 Methodology

5.1 Method

To answer the research question, the study will use quantitative methods. Tools such as Stata and Excel will be used to quantify variables, relationships, and visualise the results. The study combines two levels of analysis. First, national level time series data covering 1980-2020 are used to examine long-term trends in the relationship between income inequality and political polarisation over time. Second, municipal level data covering the period 2011-2020 is used to examine variation across municipalities as well as variation over time with yearly observations.

The main quantitative methodological approach has been a multiple Ordinary Least Squares (OLS) regression model to examine the relationship between the independent variable and the dependent variable while controlling for additional factors. Although the municipal level data have a panel structure consisting of repeated yearly observations for all municipalities the analysis uses a simpler OLS regression in line with the aim and scope of the thesis to examine associations rather than identify causal effects. Control variables are introduced to account for alternative factors that may influence political polarisation. A total of two to four control variables have been introduced into the model depending on if the regression is on national or municipal level data. Robust standard errors have been used in the regressions to address and mitigate potential heteroskedasticity, that risks bias standard errors and statistical inference (Hayes & Cai, 2007). More advanced panel data approaches, such as municipal and year fixed effects could further deepen the analysis and account for additional unobserved factors. However, due to the aim of the study simpler OLS regressions has been used.

Graphical methods are used to visualise associations and regression-based relationships between income inequality and political polarisation. The study has combined the usage of linear graphs, bivariate scatterplots and binned scatterplots, and marginal effects plots based on estimated OLS Regression models to present and visualise associations between the two variables. It is important to note that the bivariate analysis methods do not identify or determine causal effects since it focuses on associations between two variables (Bryman, 2018). Linear graphs are a good method for visualising the development of variables over time and observe general trend for different variables. It can also be used to visualise how different variables have moved in comparison to each other over time. Scatterplots are a good method to visualise the distribution of observation and observe clear outliers. Binned scatter plots are used in the study to visualise the average level of political polarisation across different intervals of income inequality which visualises the relationship between the variables for each level of income inequality. It is especially helpful to use when there is an extensive number of observations. Marginal effects plot visualises the predicted relationship between the Gini coefficient and political polarisation based on regression model where control variables are held at their mean value for each of the OLS regression models used to plot marginal effects. The graphical tools use regression and trend lines to clearer visualise the

relationship between income inequality and political polarisation and whether the association is negative or positive.

5.2 Political Polarisation Framework

To construct a variable for political polarisation, an adaption of Dalton polarisation index (Dalton, 2008) is used as framework to measure political polarisation. As described in the variables section, the Dalton Polarisation Index measures polarisation in party systems by measuring the distribution of political parties along an ideological scale ranging from 0-10 and can be described through the following formula: (Dalton, 2008).

$$PI = \text{SQRT}\{\sum(\text{party vote share}_i) * ([\text{party L/R score}_i - \text{party system average L/R score}]^2 / 5)\}$$

The model is similar to measures of standard deviation of distribution, where a zero would suggest that all parties are clustered on the index and ten would imply an extreme division of parties on two opposing sides of the scale (Dalton, 2008). The variable “i” in the formula represents party vote share for individual parties representing its electoral size. Individual political parties ideological positioning is measured through “party L/R score_i” and the party system average L/R score is the weighted ideological average of all parties that provides the ideological centre of the political system. Subtracting the individual parties ideological score from the ideological centre provides the distance for each party from the centre that is used to see the distribution amongst parties in the political system. The model thus provides a polarisation score based on the weighted ideological dispersion of political parties across an ideological scale.

In this study the ideological scale consists of an ideological score ranging from 0-10. Using data from the 1990 – 2024 Chapel Hill Expert Survey trend file (Rovny et al. 2025) each political party in the Swedish parliament has been giving an ideological score on the spectrum. Thereafter, the Dalton (2008) model was used to estimate the ideological centre of each election year and the distribution of political parties from the ideological middle based on the electoral support. The usage of this model, therefore, shows the development of ideological political polarisation in the Swedish electoral system and its development for Swedish voters over time since the distribution and polarisation index is based on the electoral result of Swedish voters. Therefore, it is not possible to draw conclusions on other forms of political polarisations with the result from this study. It is important to note but in line with the aim of the study it is still a relevant framework for the study.

This model and calculations have been used in both section of the study, on both national and municipal level data to determine the ideological score for each year for the different measures. No larger difference is implied in the model for constructing the municipal and national index except for a larger number of observations on municipal level.

5.3 Limitations

The methodology and data used in this study to explore and answer the research question could constitute some limitations. One limitation, especially relevant for national data and results are the limited observations due to only using national election results. As a result, less observations are made which risks limiting the statistical power and the robustness of the analysis than it would have been with more observations. Which also limits the level of generalisability on other countries and the relationship in general. It is not possible to create more observation on national levels when using national election results since elections are held a limited number of times. To address this limitation the second part of the study examines the relationship on municipal level with data for 290 Swedish municipalities. The usage of this data has its own limitations due to limited data on municipal level income inequality as well as data for some control variables prior to 2011. This constitutes a limitation for identifying long term trends in the relationship between income inequality and political polarisation. However, the usage of municipal data aims to enable an analysis on cross-sectional variation to identify to what extent income inequality has been associated with political polarisation on municipal level and analyse the variation of the development between municipalities. The combination of national and municipal level allows to capture both the broader general relationship over time and how the association has been influenced by other factors and across different municipalities. In the perfect world the study would have pursued an analysis with municipal data reaching back to the 1980s as is the case for the national data.

Income inequality and political polarisation has experienced an upward trend during the recent decades. Therefore, due to the complexity of the variables there is a risk of spurious correlation, an observed relationship that could reflect or partly reflect a shared time trend or a third variable rather than a direct causal relationship. Resulting in potentially strengthening the relationship over time. To mitigate the risk of spurious correlation the study has employed several control variables throughout the analysis to capture alternative factors that can influence the relationship. Despite the action to limit the risk there is a risk of omitted variables affecting the relationship. Furthermore, there is a potential limit in determining causality as the variable could present revers causality where political polarisation could shape the distribution of income and affect income inequality. Therefore, the direction of causality cannot be fully established. Furthermore, as the model do not explicitly control for year fixed effects, share time trends as mentioned may partially influence the observed relationship.

As stated in the aim of the thesis, it is to analyse to what extent income inequality has been associated with political polarisation amongst Swedish over time. The method and data capture aggregate levels of both income inequality and political polarisation. This creates a possible limitation when it comes to ecological fallacy, where individual levels cannot be deduced from the aggregated data. It is therefore not possible to analyse whether polarisation is bigger amongst people in the top or bottom of the income distribution. However, this is not the main goal of the study and does therefore not constitute any bigger limitation to the study but still worth noting to prevent similar conclusions.

6 Empirical Analysis

6.1 Results on National level

Figure 6.1 visualise the development over time in income inequality for the measurements Gini coefficient, income share for the top 10% and the income share for the bottom 50% as well as the measurement of political polarisation. We can observe that all variables except for the income share of the bottom 50% earners have increased. This is consistent since an increase in the bottom 50% share would indicate decreasing income inequality. The development of the variables for income inequality suggests that the phenomena has increased similar to what has been outlined in the section about existing literature. The overall increase and level of all variables does not appear to be drastic, instead it visualises a steady increase over time.

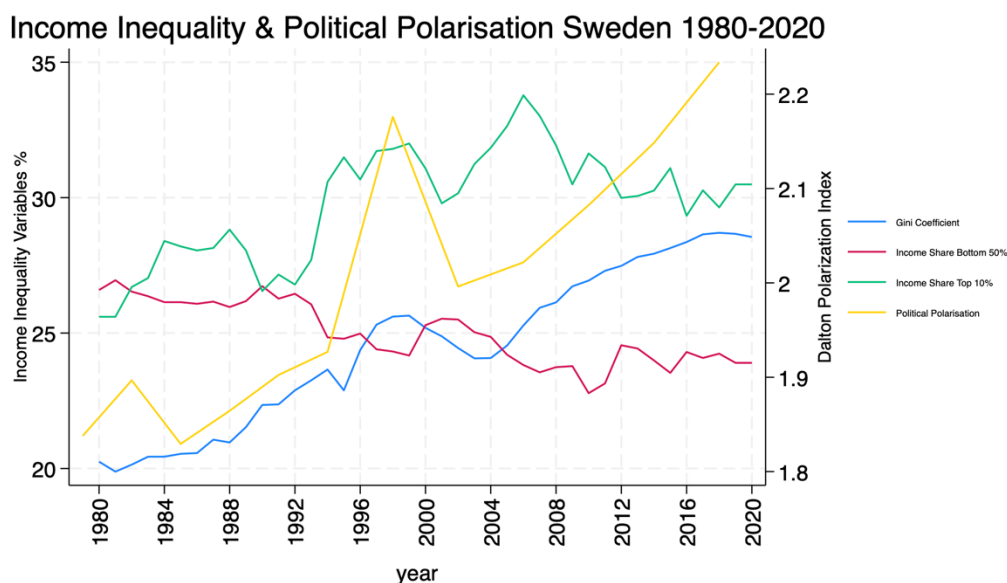


Figure 6.1 Income Inequality Variables & Political Polarisation Sweden 1980-2020 | Sources: Statistics Sweden (n.d); Solt (2019), World Inequality Database (n.d) and authors calculations

Figures 6.2 visualise the overall relationship between political polarisation and Gini coefficient showing the average level of political polarisation across different intervals. Figure 6.2 shows a positive relationship where an increase in the Gini coefficient is associated with an increase in political polarisation, which is visualised by the upward sloping regression line.

Similarly, as seen in appendix A figure A.1, a similar relationship where an increase in the income share for the top 10% earners is associated with increasing political polarisation. However, the different observations in each interval are more scattered from the regression line. This suggest that the association between the income share for the top 10% earners and political polarisation is weaker and that other variables might affect polarisation to a larger extent or alternative, there is a larger variation amongst observations for each of the intervals.

Unlike the Gini coefficient and income share for the top 10%, the income share of the bottom 50% suggests a negative relationship to political polarisation, as seen in appendix A figure A.2. This suggest that an increase for the bottom 50% earners decreases the limit of political

polarisation, which is consistent with what is showed in figure 6.2 and A.1 where an increase in income inequality is associated with an increase in political polarisation.

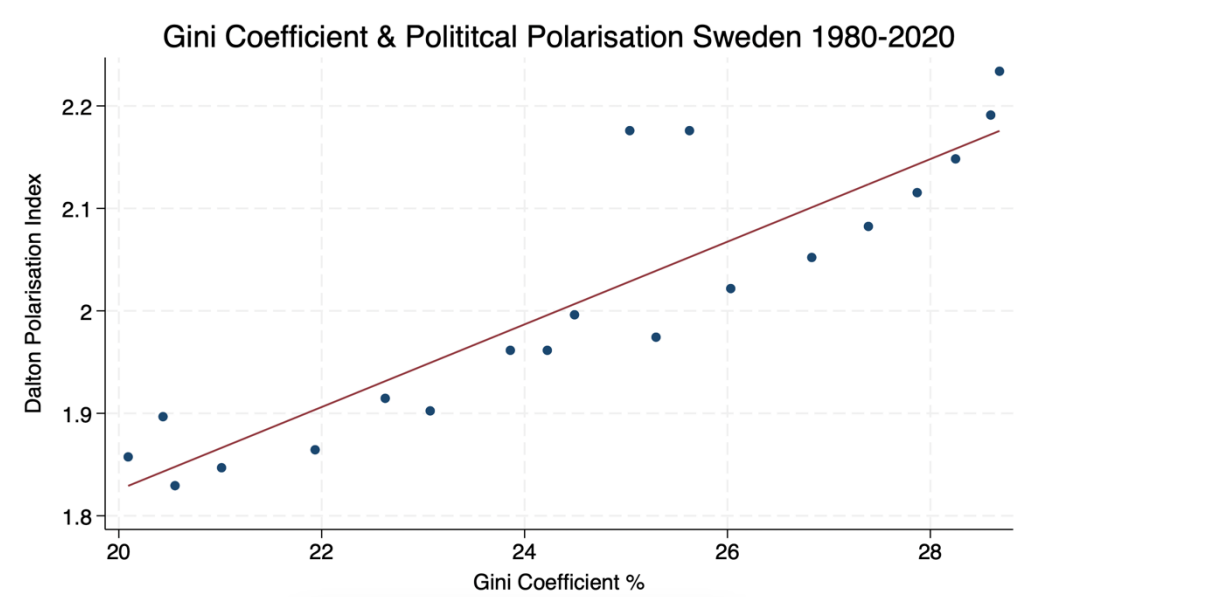


Figure 6.2 Bin Scatter Plot of Gini Coefficient and Dalton Polarisation Index Sweden 1980-2020 | Sources: Statistics Sweden (n.d); Solt (2019) and authors calculations

Table 6.1 shows an OLS regression with political polarisation as the dependent variable and Gini coefficient as independent variable while controlling for unemployment and share of the population with tertiary education. The regressions find a strong positive relationship between Gini coefficient and political polarisation, finding that when holding unemployment and share of tertiary education constant an increase in Gini is associated with an increase in political polarisation. Furthermore, the model suggest that one unit increase in the Gini coefficient is equal to around 5.8 time increase in polarisation. However, a one unit increase in Gini coefficient is highly unlikely due to its scale being 0-1 and therefore it could be better described by an increase of 0.1 in Gini is equal to approximately 0.58 increase in polarisation. The model explains around 78% of the change in political polarisation as indicated by the R-squared value indicating a high explanatory power. The control variables however appear not to be statistically significant unlike the Gini coefficient that appear statistically significant due to its p value being below 0.05.

Contrary to the OLS regression with Gini coefficient as independent variable, when using the alternative measures for income inequality, as seen in appendix B in figures B.1 and B.2, the model finds that there is no statistically significant relationship between income share for the top 10% or the income share for the bottom 50% and political polarisation. However, unlike the previous regression where the control variables were statistically insignificant the regressions using alternative measures for income inequality finds that the share of tertiary education is positively and statistically significant suggesting that higher levels of education are associated with higher levels of political polarisation. Unemployment remains statistically insignificant through all the regressions in explaining the relationship between the variables.

Table 6.1 OLS Regression Polarisation & Gini Coefficient Sweden 1980-2020

OLS Regression Gini Coefficient & Political Polarisation Sweden 1980-2020	
	(1) Model 1
Gini Coefficient	5.831*** (1.491)
Unemployment Rate	-0.008 (0.005)
Share of Tertiary Education	-0.005 (0.009)
Constant	0.705*** (0.226)
Observations	35
R-squared	0.780

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sources: Statistics Sweden (n.d); Solt (2019); World Bank Group (n.d) and authors calculations

In figure 6.3 Marginal effects plot visualises the predicted relationship between Gini coefficient and political polarisation based on the regression model and holding control variable constant at mean. It shows an upward slopping line indicating a positive relationship between the dependent and independent variable similarly to figure 6.1 and table 6.1. Furthermore, the figure suggests that higher levels of Gini coefficient is associated with less accuracy in predicting the outcome of political polarisation. Similarly, income share for top 10% and bottom 50% suggests that higher values is associated with greater difficulties to predict the level of political polarisation as seen in Appendix A (Figure A.3 and A.4).

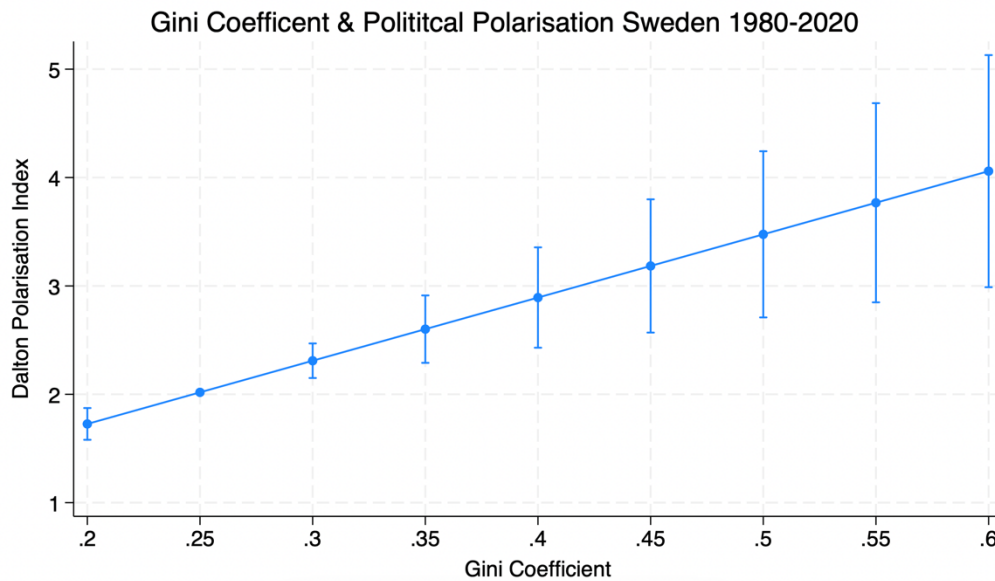


Figure 6.3 Marginal Effects Plot Gini coefficient & Political Polarisation Sweden 1980-2020 | Sources: Statistics Sweden (n.d); Solt (2019) and authors calculations

6.2 Results on Municipal level

In contrast to national levels, municipal level data consist of 290 different municipalities. Table 6.2 shows the different variables across each municipal observation and suggests that there exists a variation across the different municipalities. Political Polarisation is showed to vary across municipalities with a standard deviation of around 0.1. Both the Gini coefficient and P90/50 suggest that municipalities is fairly clustered with some outliers while P90/10 appears to have a much higher standard deviation with bigger differences between municipalities. Similar trends of differences between municipalities are observed for the controlling variables. Furthermore, unemployment is missing a number of observations in the data, as a result of lacking municipal data on unemployment for individual years.

Table 6.2 Summarising Variables on Municipal Level Sweden 2011-2020

Variable	Obs	Mean	Std. dev.	Min	Max
polarisation	3,480	2.115208	.1168695	1.355929	2.503014
gini	3,480	.247946	.0260941	.206	.59
p90p10	3,480	2.902997	.244039	2.42	5.03
p90p50	3,480	1.659557	.0578585	1.53	2.29
unemployment	3,190	24.98232	3.895972	15.67521	40.14295
urban_index	3,480	.5	.2897139	0	1
avg_salary	3,480	29877.18	2742.259	23900	39800
n_employees	3,480	2739.152	4272.95	270	45400
share_tertiary	3,480	16.90913	5.793172	8.176101	43.29549

Sources: Statistics Sweden (n.d) and authors calculations

As seen in table 6.2 there appears variation amongst municipalities. Figure 6.4 is a scatter plot to better visualise outliers and the relationship between Gini coefficient and political polarisation. It shows that a majority of municipalities are clustered along the lower levels of Gini coefficient and moderate polarisation. Unlike national records the trend line suggests a negative relationship where the outliers with higher Gini coefficient experience lower levels

of political polarisation. Overall, the scatterplot shows a cluster of the majority of the municipalities with some outliers.

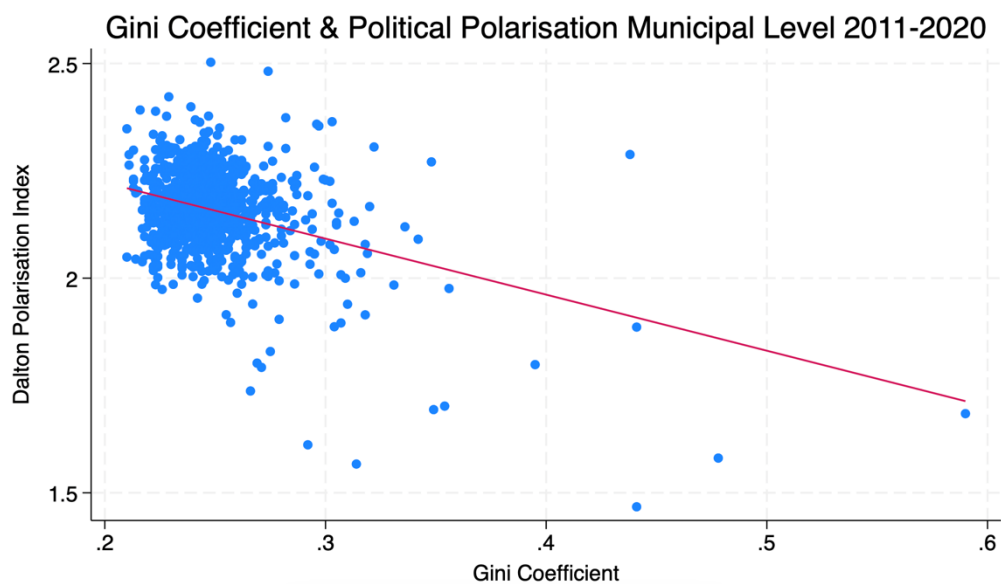


Figure 6.4 Scatter Plot Gini Coefficient & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

After visualising the dispersion between municipalities figure 6.5 shows a downward sloping regression line based on the average level of political polarisation across different intervals. This line suggests a negative relationship where an increase in Gini is associated with decreasing political polarisation. This contradicts the national level but could be explained by the short time period or the outliers. Same negative relationship is seen for P90/10 and P90/50 in association to political polarisation as seen in appendix A (A.5 & A.6).

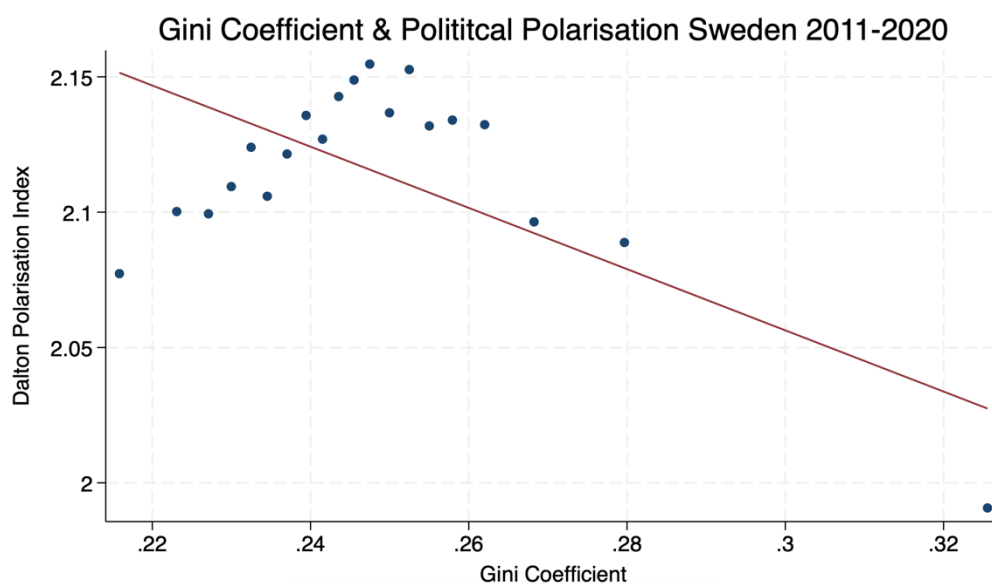


Figure 6.5 Bin Scatter Plot Gini Coefficient & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

Table 6.3 shows the results of two OLS regression. Model 1 uses two control variables, unemployment and share of tertiary education while Model 2 includes additional control variables. The results of both regressions support the patterns observed in the descriptive results showing a statistically significant negative relationship between Gini coefficient and political polarisation. When comparing the two regression models we see that controlling for additional variables increases the explanatory power of the model where the first model explains around 8.6% of the variation in polarisation and the second around 40%.

The relationship between the Gini coefficient and political polarisation becomes more negative in the second regression suggesting that the first regression might have been affected by omitted variable bias that was controlled for in the extended model. Furthermore, it appears that the share of the population with tertiary education has a negative relationship with political polarisation. However, that relationship is only statically significant in the second regression when controlling for additional variables. Unemployment is positively associated with political polarisation at municipal level. Similarly, both number of employees and average salary is positively associated even though some coefficients are relatively small in magnitude.

When using pP90/10 and P90/50 as alternative measurements of income inequality similar results are found as seen in Appendix B (table B.3 & B.4). This strengthens the findings that income inequality is negatively associated with political polarisation at municipal level. Share of tertiary education has a negative relationship while unemployment is positively associated with political polarisation. Similar across all regressions is that controlling for extra variables improves the explanatory power of the models suggesting that the relationship between income inequality and political polarisation appears to be conditional on broader socioeconomic characteristics at municipal level.

Table 6.3 OLS Regression Gini Coefficient & Political Polarisation Sweden Municipal Level 2011-2020 with Additional Control Variables

OLS Regression Gini Coefficient & Political Polarisation Sweden Municipal Level 2011-2020 with Additional Control Variables

	(1) Model 1	(2) Model 2
Gini Coefficient	-1.235*** (0.164)	-2.197*** (0.102)
(mean) unemployment	0.003*** (0.001)	0.007*** (0.001)
Share of Tertiary Education	-0.001** (0.000)	-0.005*** (0.001)
Population Size Index		-0.016* (0.008)
Average Salary		0.000*** (0.000)
Numbers of Employees		0.000*** (0.000)
Constant	2.352*** (0.038)	1.773*** (0.028)
Observations	3190.000	3190.000
R-squared	0.086	0.405

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sources: Statistics Sweden (n.d) and authors calculations

Figure 6.6 visualises the predicted relationship between Gini coefficient and political polarisation based on the OLS regression model. The figure shows a negative relationship, where higher levels of Gini coefficient is associated with lower levels of Political Polarisation. Furthermore, the figure shows that the predicted level of political polarisation becomes less precise with higher level of Gini coefficient. This may be due less observation at the extremes or more variation across other factors at higher levels.

Similar patterns are observed when using the P90/10 and P90/50 measures of income inequality as seen in Appendix A (Figures A.7 & A.8). Across all specifications, higher levels of income inequality are associated with lower levels of political polarisation. In addition, predication uncertainty increases at higher levels of inequality.

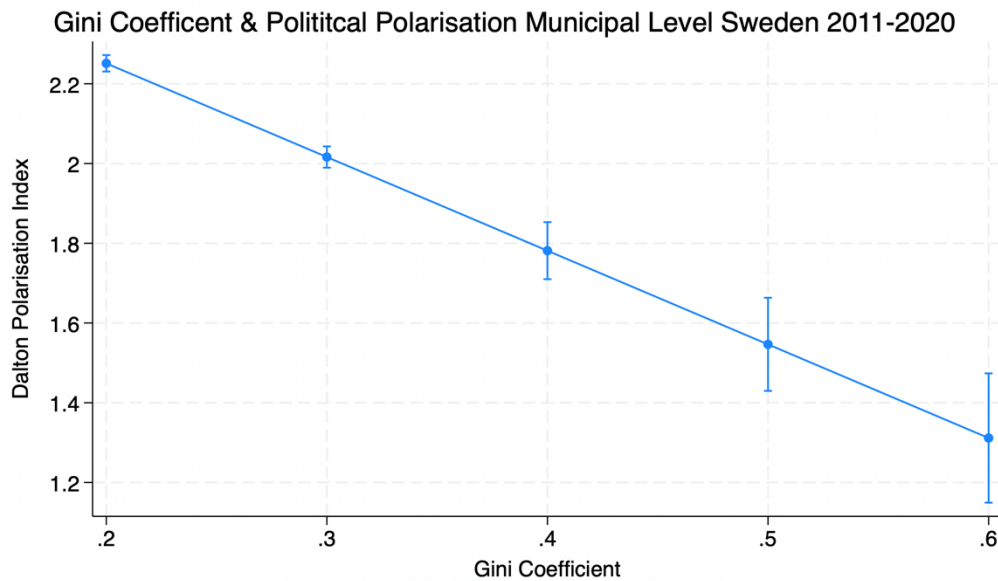


Figure 6.6 Marginal Effects Plot Gini Coefficient & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

6.3 Discussion

Analysing the results presented in the sections above, there are three key observations connected to the existing literature and research question. It is important to acknowledge that despite the increasing income inequality and political polarisation the levels are in international context low. However, this study has its focus on Sweden and what the increasing income inequality since the 1980s has had for effect on political polarisation.

First, the results support the extensive literature arguing that income inequality has increased over the last decades in the Swedish context (e.g. World Inequality Lab, 2018; The Swedish Fiscal Policy Council, 2024). Similarly, the results are in line with increasing ideological political polarisation in Sweden (Center for Business and Policy Studies, 2021). Through the descriptive statistics it is possible to draw similarities in time where changing political attitudes and policies and the 1990 crash coincided with increasing income inequality and political polarisation as argued by Therborn (2020) and Anxo and Niklasson (2006). The results further suggest that the Swedish electoral support has become more unevenly distributed across ideological party positions. This could be the result of one or several of the following reasons: either vote is more concentrated at the ideological extremes of the spectrum, centre parties lose electoral support, or different ideological blocs experience increased support, or votes are generally less clustered and more spread out from the centre.

Second, comparing the relationship and how income inequality has been associated with political polarisation on national and municipal level the results are contradicting. National results are in line with the existing literature as previously presented where increasing income inequality is associated with increasing political polarisation. However, on municipal level the association appears negative where an increase in income inequality is associated with decreasing political polarisation. This could be an indication of the different mechanisms behind the relationship on municipal and national levels. One possible explanation for the reversed relationship is that municipalities with higher income inequality could be more

concentrated in electoral patterns with concentration around one bloc despite having high income inequality.

The difference between national and municipal results appears to be in the composition and scale of the electoral group being examined. The municipal level provides an insight into how political polarisation has been influenced by income inequality across 290 different cases measuring internal electoral compositions and local political concentrations that shows allowing a more thoroughly understanding of different mechanisms and their importance. On the other hand, national level explains the broader relationship between income inequality and political polarisation and the broader ideological conflict. The study thus find support for a positive association between income inequality and political polarisation on national levels for Swedish voters since the 1980s and a negative relationship between the two concepts on municipal level.

Additionally, the different results for the relevance of inequality across both levels could point to the sensitivity of inequality effects in different measurements choices. This could account for why some of the income inequality measurers appears statistically significant and other not. One possible explanation for this is that Gini coefficient captures broader inequalities while factors like income share for top 10% and bottom 50% as well as P90/10 and P90/50 capture narrower dimensions that might affect polarisation differently. These narrower measures of income inequality are used in the existing literature to capture changes and within-distribution gaps which is argued to be important mechanism of increasing income inequality (e.g. Karimi et al. 2024; Roine & Waldenström, 2011). However, the results suggest that these distribution specific measures do not show association with political polarisation in the Swedish context. This may indicate that broader inequality dynamics are more closely related to changes in political polarisation or alternatively that the relationship varies depending on how inequality is used.

Thirdly, extensive literature argues that the relationship between income inequality and political polarisation is dependent on several other factors that determines how strong the relationship is (e.g. Gunderson, 2022; Han, 2015). Similarly, the findings in this paper finds that the relationship between the two appears stronger when controlling for other socioeconomic variables. This relationship becomes extra visible at municipal level where the introduction of additional control factors increases the explanatory power for all the models. This supports the motion that several other factors influence the relationship between income inequality and political polarisation.

Other noticeable observations were the relationship between the share of tertiary education and political polarisation that in the majority of data had a negative association with political polarisation across both national and municipal level data. Suggesting that higher level of tertiary education tends to exhibit lower levels of political polarisation.

For municipal level results, similarly to Öhrvall et al. (2024) the results strengthen the argument that geographic considerations such as urban vs rural areas do not affect the relationship between income inequality and political polarisation to any larger extent and appears to be statistically insignificant. This is contradicting to international context where Huijsmans et al (2024) argues that electoral support is highly divided between urban and rural areas in countries such as the US because of few political parties. This could suggest that Sweden's multi-party electoral system and general high levels of urbanisation mitigates geographical factors that otherwise could spur on polarisation.

The finding of this study contributes to the literature in three main ways. First, it provides updated data on the long-term relationship between income inequality and political polarisation in Sweden capturing several decades of structural change. Second, it shows that the association between income inequality and political polarisation is not consistent across level of analysis. Highlighting the importance of scale differences when interpreting economical-political relationship. Third, the relationship is sensitive to measurement choices as different inequality indicators captures different dimensions of inequality that might affect political polarisation differently

There are potential limitations that remains after the analysis. One limitation is still the methodological design that limits causal inference and the direction of it, but instead captures associations between income inequality and political polarisation. Furthermore, the risk of omitted variables that could affect political polarisation still constitutes a limitation to the results.

7 Conclusion

7.1 Concluding remarks

Sweden's changed from a country lagging behind industrial leaders to becoming one of the wealthiest and most democratically stable countries in the world. But during the 1980s income inequality started to increase after experiencing years of decreasing inequality. Simultaneously, an increasing ideological polarised society has been visible in the last decades with Swedish voters diverging from the centre.

This study set out to examine the following question: To what extent has income inequality been associated with political polarisation amongst Swedish voters during the 1980-2020? It is important to note that the level of income inequality and political polarisation is relatively low in the international context. However, within the Swedish context both income inequality and political polarisation have experienced a steady increase which is why it is important to address and examine the development in Sweden.

Three main findings can be drawn from the results. First, income inequality has experienced an increase from the 1980s, while electoral support has become more unevenly distributed across the ideological spectrum. The increase in both variables can be identified to occur around historically important changes in policies and societal changes as well as a domestic economic crisis.

Second, the relationship between income inequality and political polarisation is different between national and municipal level suggesting that the association is scale dependent. Meaning that depending on the level of study, national or municipal the relationship will vary. At the national level higher income inequality is associated with higher political polarisation. In contrast, at the municipal level, increasing income inequality is associated with lower political polarisation on municipal level.

Third, the strength of the relationship between income inequality and political polarisation is partly influenced by other socioeconomic factors such as share of tertiary education and unemployment this effect was especially noticeable at the municipal level. Furthermore, the

In regard to the existing literature, these findings support the broader consensus that both income inequality and political polarisation have increased in Sweden since the 1980s (Center for Business and Policy Studies, 2021; World Inequality Lab, 2018). Furthermore, the findings support the arguments made by several scholars, including Grechyan (2016) who argues that political polarisation is closely connected to socioeconomic and economic conditions. The findings also indicate that additional socioeconomic factors influence the strength of the relationship between income inequality and political polarisation, particularly at the municipal level.

The main contribution of this paper lies in its scale-based perspective, showing how income inequality is associated with political polarisation differently depending on what level it is measured at. Further, the study contributes with a long-term analysis of the association between income inequality and political polarisation on national level in the Swedish setting.

Overall, the study suggests that increasing income inequality has been associated with growing political polarisation among Swedish voters since the 1980s, although the relationship varies depending on the level of analysis.

7.2 Practical Implications and future research

The results have several practical implications. For policy makers the results highlight two important issues, income inequality and political polarisation, that has been consistently growing since the 1980s and may pose as a threat to our society in form of weakening democratic principles and structure and hampering economic development.

Furthermore, the paper hopefully provides a strong foundation for future research on how the difference in the association between income inequality and political polarisation varies depending on what scale it is being studied at. A longer time period study, especially for municipal data, would be necessary to fully understand the effect of measuring across different levels for income inequality and political polarisation. Additionally, the results create an interesting question of what mechanisms drive the development of both variables and how those mechanisms have changed and developed over time.

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Appendix A

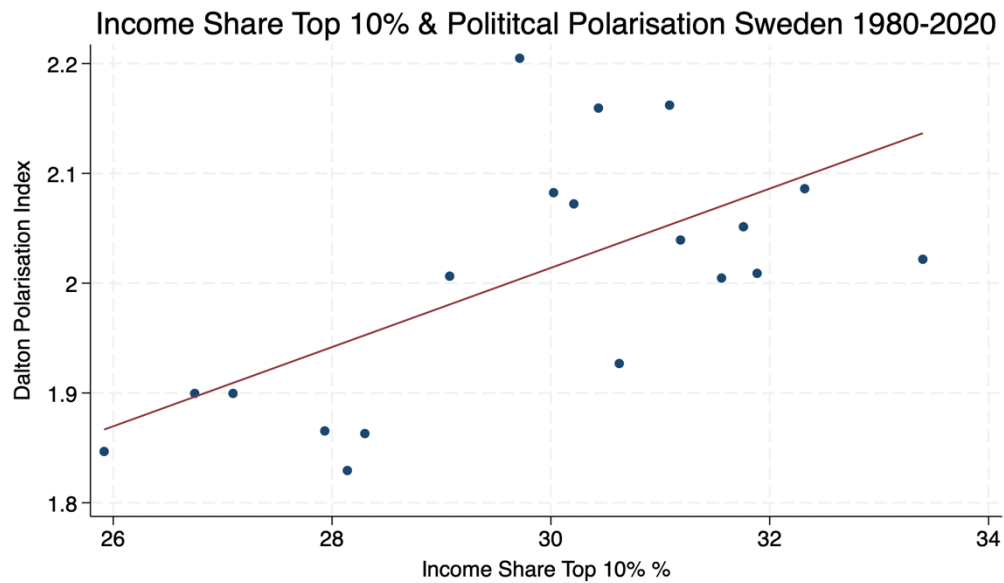


Figure A.1 Bin scatter plot of Income Share Top 10% and Dalton Polarisation Index Sweden 1980-2020 | Sources: Statistics Sweden (n.d); World Inequality Database (n.d) and authors calculations

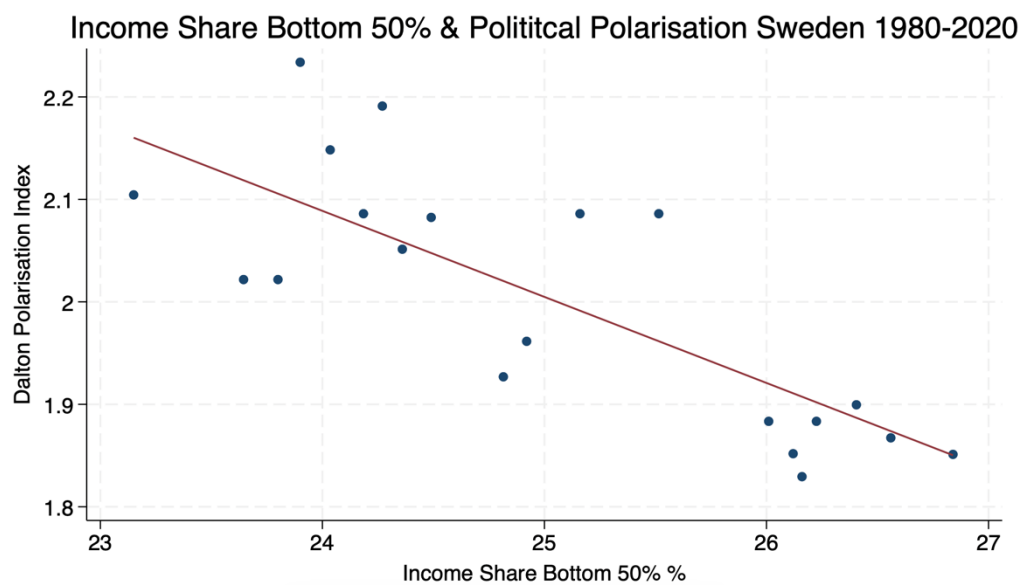


Figure A.2 Bin scatter plot of Income Share Bottom 50% and Dalton Polarisation Index Sweden 1980-2020 | Sources: Statistics Sweden (n.d); World Inequality Database (n.d) and authors calculations

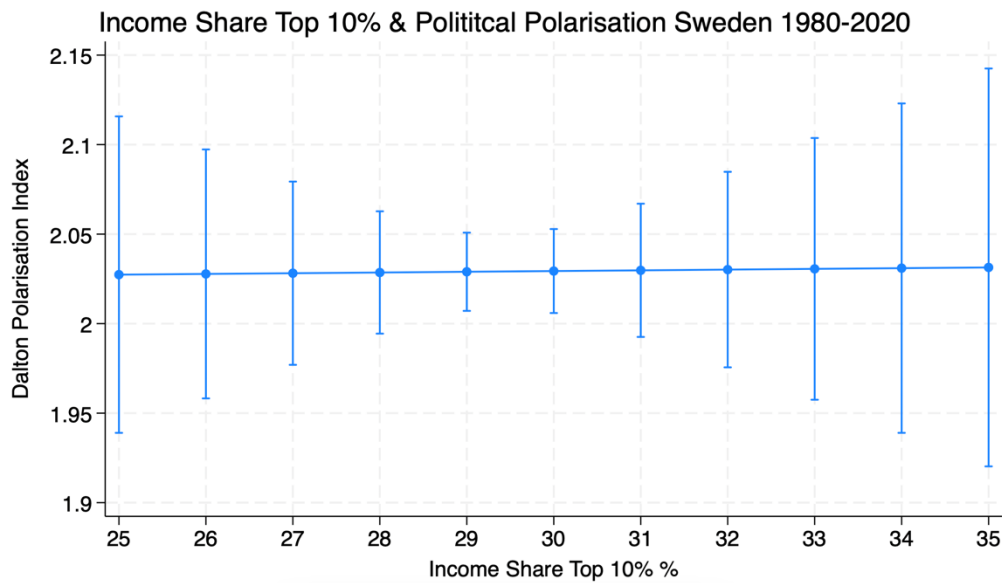


Figure A.3 Marginal Effects Plot Income Share Top 10% & Political Polarisation Sweden 1980-2020 | Sources: Statistics Sweden (n.d); World Inequality Database (n.d) and authors calculations

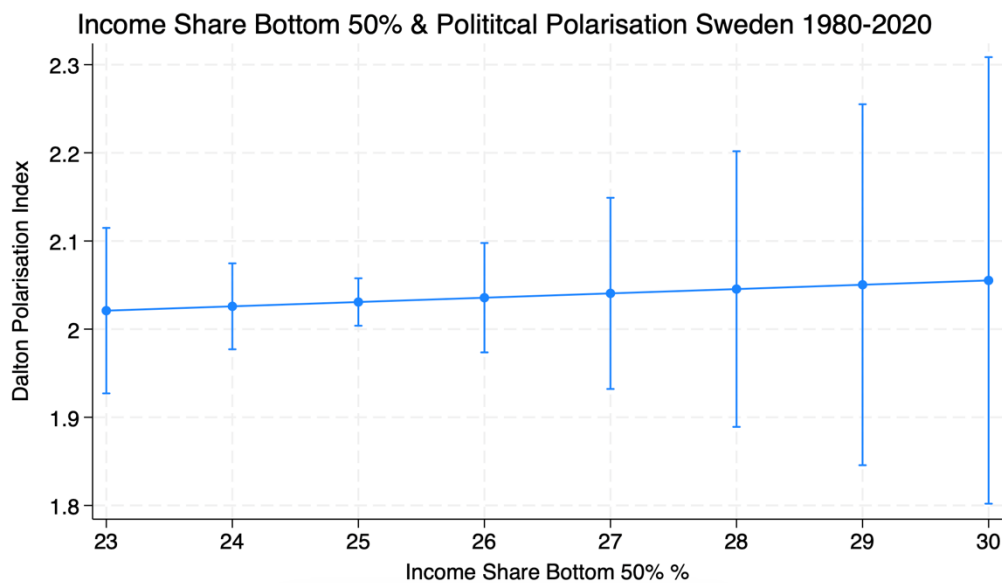


Figure A.4 Marginal Effects Plot Income Share Bottom 50% & Political Polarisation Sweden 1980-2020 | Sources: Statistics Sweden (n.d); World Inequality Database (n.d) and authors calculations

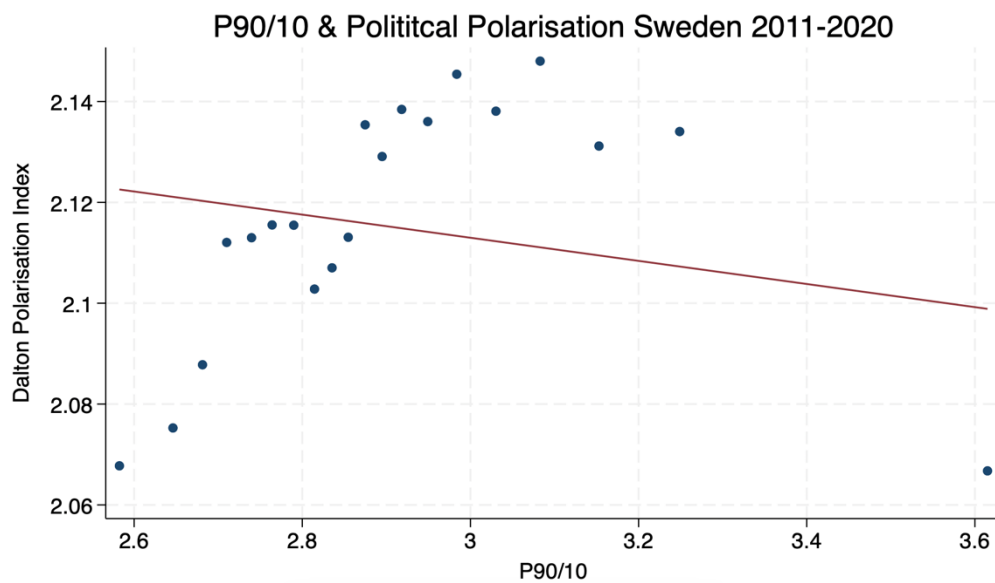


Figure A.5 Bin Scatter Plot P90/10 & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

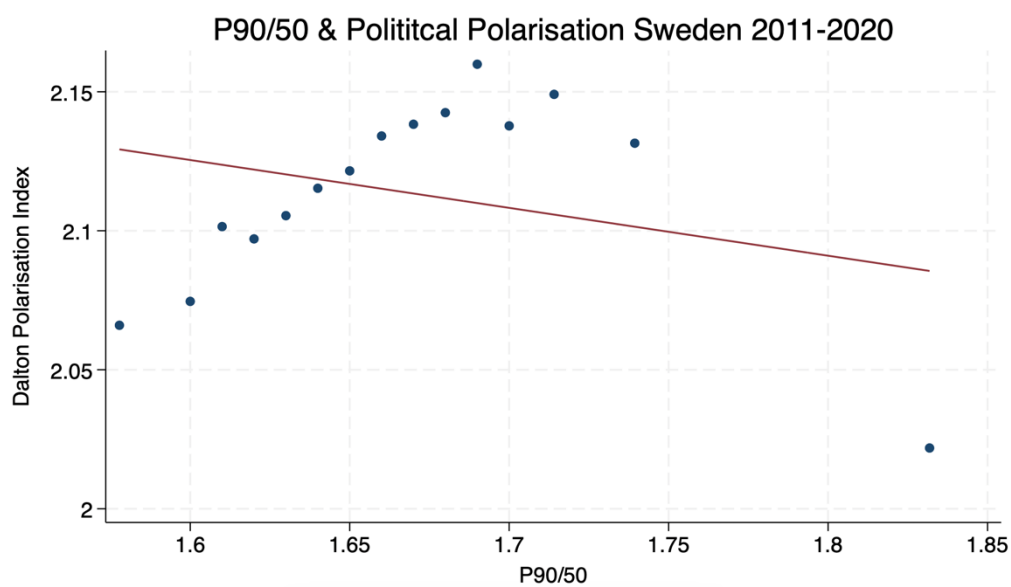


Figure A.6 Bin Scatter Plot P90/50 & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

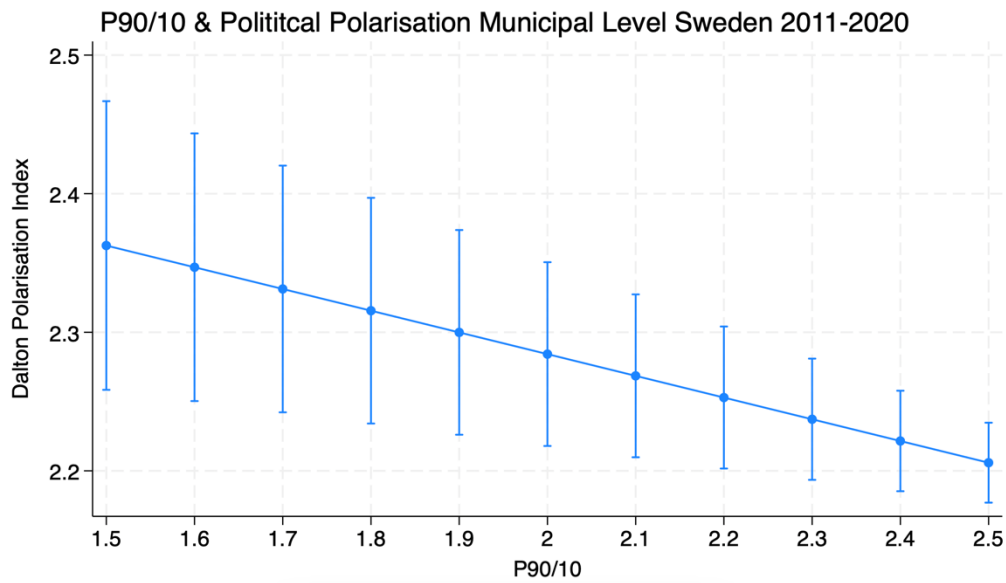


Figure A.7 Marginal Effects Plot P90/10 & Political Polarisation Municipal Level Sweden 2011-2020 | Sources: Statistics Sweden (n.d) and authors calculations

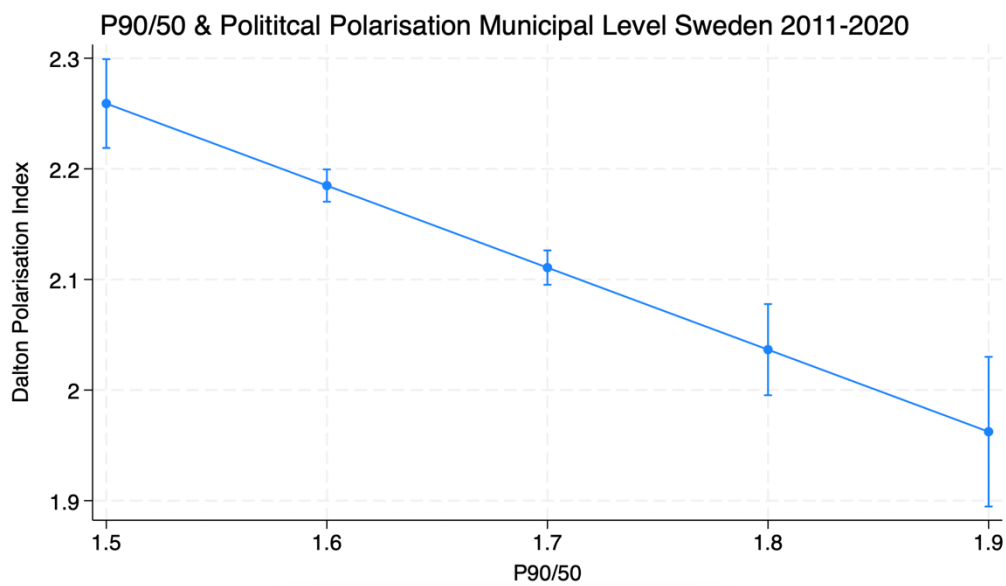


Figure A.8 Marginal Effects Plot P90/50 & Political Polarisation Municipal Level Sweden 1980-2020 | Sources: Statistics Sweden (n.d) and authors calculations

Appendix B

Table B.1 OLS Regression Income Share Bottom 50% & Political Polarisation Sweden 1980-2020

OLS Regression Income Share Bottom 50% & Political Polarisation Sweden 1980-2020	
	(1) Model 1
Income Share Bottom 50%	0.005 (0.024)
Unemployment Rate	0.001 (0.005)
Share of Tertiary Education	0.024*** (0.006)
Constant	1.481** (0.683)
Observations	35.000
R-squared	0.669
Standard errors in parentheses	
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$	
Sources: Statistics Sweden (n.d) and authors calculations	

Table B.2 OLS Regression Income Share Top 10% & Political Polarisation Sweden 1980-2020

OLS Regression Income Share top 10% & Political Polarisation Sweden 1980-2020	
	(1) Model 1
Income Share Top 10%	0.000 (0.010)
Unemployment Rate	-0.000 (0.006)
Share of Tertiary Education	0.023*** (0.003)
Constant	1.610*** (0.235)
Observations	35.000
R-squared	0.669
Standard errors in parentheses	
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$	
Sources: Statistics Sweden (n.d) and authors calculations	

Table B.3 OLS Regression P90/10 & Political Polarisation Municipal Level Sweden 2011-2020 with Additional Control Variables

OLS Regression P90/10 & Political Polarisation Sweden Municipal Level 2011-2020 with Additional Control Variables

	(1) Model 1	(2) Model 2
P90/10	-0.002 (0.023)	-0.138*** (0.017)
(mean) unemployment	0.001* (0.001)	0.008*** (0.001)
Share of Tertiary Education	-0.003*** (0.000)	-0.008*** (0.001)
Population Size Index		-0.003 (0.009)
Average Salary		0.000*** (0.000)
Numbers of Employees		0.000*** (0.000)
Constant	2.137*** (0.051)	1.714*** (0.035)
Observations	3190.000	3190.000
R-squared	0.031	0.296

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sources: Statistics Sweden (n.d) and authors calculations

Table B.4 OLS Regression P90/50 & Political Polarisation Municipal Level Sweden 2011-2020

OLS Regression P90/50 & Political Polarisation Sweden Municipal Level 2011-2020 with Additional Control Variables

	(1) Model 1	(2) Model 2
P90/50	-0.177** (0.090)	-0.642*** (0.063)
(mean) unemployment	0.002*** (0.001)	0.007*** (0.001)
Share of Tertiary Education	-0.003*** (0.000)	-0.008*** (0.001)
Population Size Index		-0.020** (0.009)
Average Salary		0.000*** (0.000)
Numbers of Employees		0.000*** (0.000)
Constant	2.392*** (0.140)	2.387*** (0.084)
Observations	3190.000	3190.000
R-squared	0.037	0.317

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sources: Statistics Sweden (n.d) and authors calculations