

# The Salience of Issues in Parliamentary Debates

– Its Development and Relation to the Support of the  
Sweden Democrats

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## Abstract

*The aim of this study was to analyze the salience of issue dimensions in the Swedish parliament debates by the established parties during the rise of the Sweden Democrats Party (SD). Structural topic modeling was used to construct a measurement of the salience of issues, examining the full body of speeches in the Swedish parliament between September 2006 and December 2019. Trend analysis revealed a realignment from a focus on socio-economic to socio-cultural issues in Swedish politics. Cross-correlation analyses had conflicting results, indicating a weak positive relationship between the salience of issues and the support of SD – but low predictive ability; it also showed that changes in the support of SD did lead (precede) changes in the salience of issues in the parliament. The ramifications of socio-cultural issues being the most salient are that so-called radical right-wing populist parties (RRPs), or neo-nationalist parties, has a greater opportunity to gain support. It can make voters more inclined to base their voting decision on socio-cultural issues, which favors parties who fight for and are trustworthy in those issues – giving them more valence in the eyes of the voters.*

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## Introduction

Nationalistic and anti-immigration winds have blown over Western Europe during the first two decades of the 21<sup>st</sup> century. Parties that are called radical right-wing populist (RRP; Rydgren, 2007), or neo-nationalist (Eger & Valdez, 2015), have gained support in countries such as Denmark, France, Italy, Austria, and Sweden. Common for these parties is that their main political focus is on socio-cultural issues, such as nationalism, immigration, law and order, and family values, rather than more traditional socio-economic issues, which regards the state's involvement in the economy (Hellström et al., 2012; Rydgren, 2007).

Theories explaining the rise of RRP see the relative salience of these two issue dimensions as influencing the success of RRP (Kriesi, 1995; Rydgren, 2007). The idea is that if the political focus of the voters' shifts from socio-economic issues to socio-cultural issues, there is an opportunity for RRP to mobilize voters. In a comparison between Sweden and Denmark, Rydgren (2010) showed the importance of the relative salience of issue dimensions for the success of RRP.

In this study, I will construct a measurement of the salience of issue dimensions in the Swedish parliament by analyzing the full body of speeches made in the Swedish parliamentary debates by the established parties. The aim is to analyze the salience of issue dimensions in the Swedish parliamentary debates during the rise of the Sweden Democrats Party (SD). The research questions are:

- i *How has the salience of socio-economic and socio-cultural issues developed over time? Has there been a shift?*
- ii *Is the change in the salience of issue dimensions by the established parties related to the support of SD?*
- iii *Do the changes in the salience of issues lead (precede) changes in the support of SD, or do they follow?*

To my knowledge, no previous studies have analyzed the development of socio-economic and socio-cultural issues in parliamentary debates. A previous study has shown that the immigration

issue became more prevalent in Swedish parliamentary debates during the rise of SD (Magnusson et al., 2018), and showed that the mainstream parties initially used a dismissive strategy towards SD and the immigration issue. Analyzing what issue dimensions that the established parties focused on during the rise of SD can give further insight into their strategies and what opportunities were in place that made it possible for SD to succeed.

New computational methods and stronger computing power have made it possible to make use of big data in new ways. A structural topic modeling approach was used to map the salience of socio-economic and socio-cultural issues over time. Time series analysis was used to analyze its relationship to the support of SD.

The paper starts with a literature review, discussing theory and previous research regarding the political dimensions, the salience of issues, and its relation to the support of SD. Hypotheses about the outcomes are set up in this section. Next, the data and methods used are described, and relevant considerations and decisions that were made are explained. Then, the findings are presented in the results section. The results are then interpreted in the discussion section, relating them to the hypotheses, whether they are supported or not, and what this implies regarding the theory. The paper ends with a conclusion of the paper, summing up the main findings, discussing the broader meaning of the results and suggestions for future research.

## Literature review

Here I will go over definitions, theories, and previous research which I will use to explain how the salience of issue dimensions in the Swedish parliamentary debates has developed during the rise of the Swedish Democrats Party (SD) in Sweden, and how the change in the salience of issue dimensions is related to the support of SD. First, I will explain the political spectrum, i.e. the political dimensions and the positioning of political parties in relation to the voters.

### The Political Spectrum

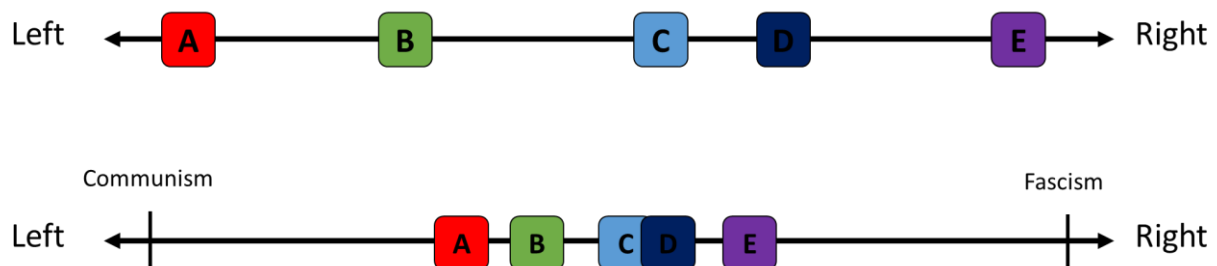
In politics, parties define and differentiate themselves in terms of substantive political issues. A political spectrum is a system that is used to characterize and classify different political positions in relation to each other. The positions sit upon one or more geometric axes that represent independent political issue dimensions (Heywood, 2017; "Political Spectrum," 2020). The political spectrum simplifies the differences in political beliefs by clustering issues that usually go together, which leads to a reduction of the number of dimensions from there being as many as there are political issues, to usually only one or two.

The two main issue dimensions in contemporary Western European democracies are the socio-economic dimension and the socio-cultural dimension (Rydgren, 2010). The established parties have traditionally competed on the socio-economic dimension, which concerns issues regarding the states' involvement in the economy, and pits workers against the capital (Hellström et al., 2012; Rydgren, 2007). RRP's on the other hand, compete on the socio-cultural dimension, which concerns issues such as immigration, law and order, and abortion (Bell, 1972; Hellström et al., 2012; Rydgren, 2007, 2010). It is these two issue dimensions that are studied here.

Positions on the political spectrum are often used as a representation of the desires, beliefs, and opportunities of political parties and voters. Thinking and speaking in terms of dimensions rather than substantive issues is common among both political researchers and the general public (Benoit & Laver, 2012). Researchers use it to describe and analyze voting behavior, e.g. by calculating the distance between voters and parties in the political space, using spatial voting models (Enelow & Hinich, 1984). In everyday life, people speak in terms of positions on political dimensions when speaking of their political opinions, such as being more or less left or right, conservative or liberal, rather than, or in addition to, speaking about political issues (Benoit & Laver, 2012). Changes in political desires, beliefs, and opportunities can thus be seen as movements along the issue dimension continuums of the political spectrum.

The issue dimensions in the political spectrum are by nature *relative scales* rather than *absolute scales*. This means that it can be unclear what the distance between agents on the scale represents, and thus, small differences between parties can be exaggerated (in a zoomed-in scale) and big differences can be played down (in a zoomed-out scale). In models with two or more dimensions, as in this case, this is important because an equal distance on two different scales indicates an unequal distance politically (how close parties stand to each other politically on a dimension). Image 4, below, illustrates this concept. The relative distance between the parties on the two left-right scales is the same; but the differences on the top scale are exaggerated (more zoomed-in), in comparison to the bottom scale, on which two reference points, communism and fascism, are included. Thus, a party that seems to be on the far-right relative to the other parties on the top scale (party E), looks less extreme in relation to a fascist party.

**Figure 1:** Illustration of the relativity of positions on issue dimensions.



Changes in society can generate new desires and beliefs, which affects how the scales of these dimensions are perceived. For example, if there is increased immigration in a country, it can trigger far right-wing opinions in some individuals. For these individuals, the scale “zooms out”, and parties who previously seemed to be very diverse now looks to be more alike – which in turn can make them look for other options that fit their new opinions. Similarly, if a new RRP comes into the mix, it can change how a scale is perceived by voters and make the difference between established parties look smaller. Thus, the entrance and positioning of a party can change the voters’ perception of other parties.

Another relevant concept to consider in addition to the issue dimensions is the *valence* of the political parties. When modeling how voters decide what to vote for based on their desires, beliefs, and opportunities, political scientists have often used what is called the “Downsian” spatial voting model (Downs, 1957; Hammond & Humes, 1993), or the *median voter theorem* (Black, 1948; Hotelling, 1929). These are similar models based on economic theory, where rational voters base their choice on the Euclidean proximity to different parties in the political spectrum. Such models have been criticized for being too simplistic, and it has been argued that the valence is an important factor (Ansolabehere & Snyder, 2000; Schofield, 2003). The idea is that it is not only how close one is to a party in the political spectrum that is important when voting, but also the valence (or “pull”) of that party. Thus, a party that is further away from a voter in the political spectrum can still get the vote if the party has a stronger valence than the party that is closer to the voter. A party’s valence can, for example, depend on how relevant the main issues it fights for are in the eyes of the voters at a certain point in time.

In this study, it is the *salience* of issues on these dimensions in parliamentary debates that is studied, how it has developed during the rise of SD, and how it is related to the level of support of SD. The concepts of the relative scales and valence are key for understanding this relationship.

### The Salience of Issues

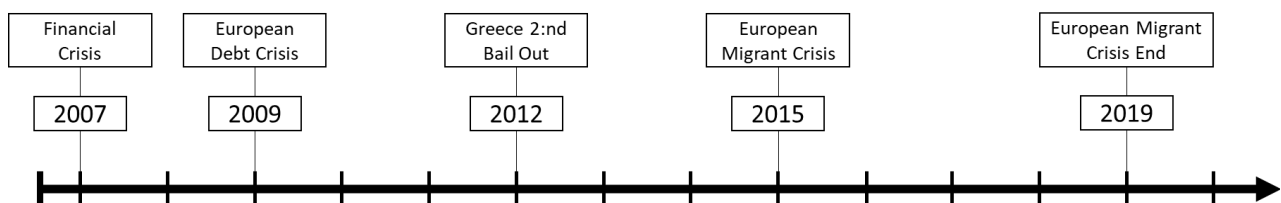
Theory and research on RRP suggest that the salience of issues is important for explaining their success (Ellinas, 2010; Kriesi, 1995; Meguid, 2008; Rydgren, 2007, 2010). Rydgren (2007, 2010) and Kriesi (1995) argue that changes in the relative salience of socio-cultural and socio-economic issues in society, and among the voters, influence the opportunities of RRP to successfully mobilize voters. Others describe the salience of issues as something that can be strategically manipulated by parties. Meguid (2008, pp. 22–40) sees the salience of issues as a type of resource that parties compete for in order to gain electoral support, and states that established parties can alter the electoral support of a niche party by manipulating the salience and ownership of that party’s competitive issue. Furthermore, Ellinas (2010) claims that RRP can capitalize on the increased salience of national identity issues generated when the established parties’ “plays the nationalist card”, i.e. when they start to compete for national identity issues.

For understanding the development of the salience of issues *in parliamentary debates*, and its relation to the support of SD, it is therefore useful to make a distinction between the salience of issues in parliamentary debates as a *proxy for issues in the society*, and as a *proxy for a party’s general strategy*. On the one hand, the debates are, naturally, influenced by external events in society and the world, which means that a change in the salience of issues can depend on an ongoing crisis, for example. Therefore, issues discussed in debates is a proxy for issues in society. On the other hand, as argued by Meguid (2008) and Ellinas (2010), the debates can be influenced by the strategies that the parties use to manipulate the salience and ownership of issue dimensions. Thus, the parties can actively try to set the agenda to benefit themselves. Therefore, the issues discussed in the debates is a proxy for a party’s general strategy. These two forces are important to consider, as they can conflict and influence the salience of issues in parliamentary debates in opposite directions.

### Development between 2006 and 2019

Multiple external events can possibly have affected the development of the salience of issues in the Swedish parliamentary debates. When looking at the major international events during this period, it suggests a focus on socio-economic issues at the beginning of the period, and a focus on socio-cultural issues towards the end of the period (see Figure 2). The first major event was the financial crisis between 2007-2008, which sparked a global recession that extended until 2009 ("Great Recession," 2020; Reuters, 2010). A short time after, the European debt crisis took place. It started in 2009 and went on for several years, and many countries received bailouts and rescue packages. Greece, for example, received their second bailout in 2012 ("European Debt Crisis," 2020). It is reasonable to believe that these events got much attention in debates in the Swedish parliament and that the salience of socio-economic issues consequently should be high. In 2015, however, the European migrant crisis started and continued over several years, and Sweden is one of the countries that took in many immigrants (BBC News, 2016; European Commission, 2019).

**Figure 2:** Timeline of international crises between 2006 and 2020.



The migrant crisis had a substantial effect on what issues that Swedes believed to be most important. The share of people who thought the immigration and integration issues was one of the three most important issues increased from 27 percent in 2014 to 53 percent in 2015 (Martinsson & Andersson, 2019). In addition, in their study, Magnusson et al. (2018), shows that immigration became a more prevalent issue in the Swedish parliamentary debates during the migration crisis. These external events and previous research suggest that the relative salience of socio-cultural issues of the established parties in Swedish parliamentary debates should increase over the period.

A factor that conflict with this hypothesis is if the established parties had what Meguid (2008) calls a *dismissive strategy* towards SD and their main issues. This is a strategy that is used by established parties to not lose voters to a challenging niche party and involves avoiding the issue of that party all-together – keeping focus on their traditional issue dimension. The idea is to keep the salience on the, in this case, socio-economic dimension high and the salience on the socio-cultural dimension low. If successful, the low salience on socio-cultural issues keeps the valence of the challenging party low, even though it might be closer to the voters in the political spectrum. Meguid (2008) outlines two other strategies that established parties can use to combat a new niche party, namely the *accommodative* and the *adversarial* strategy. Both these strategies involve addressing the issue at hand, rather than dismissing it. The accommodative strategy is to move closer to the challenging party to take ownership of that issue dimension and that opinion. The



adversarial strategy is to take a distant position on the issue, thus taking ownership of the dimension, but with an opposite opinion compared to the challenging party (Meguid, 2008). The latter strategies would both result in an increased salience of the issue dimension of the challenging party. Thus, in this case, if the established parties had an accommodative or adversarial strategy towards SD, the relative salience of socio-cultural issues would be expected to increase; and if they had a dismissive strategy, it would be expected to decrease, or remain constant. Research has shown that the established parties mainly used a dismissive strategy towards SD until 2010 when SD entered the parliament; after that point, the established parties (on both left and right) took a more adversarial strategy (Dahlström & Esaiasson, 2013; Heinze, 2018; Magnusson et al., 2018). Taken all-together, both when seeing the salience of issues as a proxy for issues in the society, and the established parties' general strategy, the previous research and theory suggests that the relative salience of socio-cultural issues has increased over the time period.

*Hypothesis 1: The relative salience of socio-cultural issues in parliamentary debates by the established parties has increased compared to socio-economic- and other issues during the rise of SD.*

#### *Relation to the Support of SD*

The explanations for the rise of RRP are commonly divided into two types, the demand-centered explanations and the supply-centered explanations (Rydgren, 2007). Common for the demand-centered explanations is that they focus on factors that are related to changes in the interests, emotions, attitudes, and preferences of the voters; the supply-centered explanations regard factors that affect the availability of choices that the voters have (Rydgren, 2007). In the context of the political spectrum, the demand-centered explanations explain the *movement of voters* along the two issue dimensions, and the supply-centered explanations explain *the movement and valance of the political parties*. These two are not contradictions of each other, but can be at play simultaneously and often work most effectively when combined (Rydgren, 2007). In his paper, Rydgren (2007) states that the most common demand-centered explanations have been (i) relative deprivation thesis, (ii) the modernization losers thesis, (iii) the ethnic competition thesis, and (iv) others focusing on popular xenophobia and political discontent. Common for these explanations is that they are based on grievance theory, and thus focuses on how objective conditions (often generated by macro events) affect the level of grievance and dissatisfaction among the voters (Rydgren, 2007). They explain how macro events can cause changes in the desires and beliefs of individuals (i.e. the movement of voters in the political spectrum). Even though they are not directly related to the salience of issue dimensions in the parliamentary debates, they are mechanisms that in combination with others can enhance the chance for RRP to succeed.

The supply-centered explanations, on the other hand, are more directly relevant to the salience of issue dimensions, as they regard the movement and valance of the political parties in the political spectrum. Rydgren (2007) mentions two such explanations, which he also calls opportunity structures, that are relevant for understanding how the salience of issue dimensions can help

explain the support of SD, namely the *realignment process* and *convergence between the established parties in the political spectrum*.

In the literature explaining the rise of RRP, realignment refers to a change in the *salience of cleavage dimensions* – i.e. which issue dimension that is most relevant (Hellström et al., 2012; Kriesi, 1995; Rydgren, 2010). A realignment process can provide favorable political opportunity structures for emerging RRP (Kriesi, 1995; Rydgren, 2010). The idea is that the relative salience of issues is likely to decide what attitudes the voters will base their voting decision on (Rydgren, 2007). Traditionally in Western European countries, most political behavior has been determined by issues on the socio-economic dimension (Bartolini, 2000; Budge et al., 1987; Rydgren, 2007). If the salience of issues on the socio-cultural dimension would increase, however, voters can become more likely to base their voting decision on their attitudes on these issues which, in turn, would influence the potential for RRP to mobilize voters. In other words, issues that previously were not important for deciding peoples voting behavior can become important due to a realignment process. This means that if certain issues become more salient, voters perceive different parties as having more valence – due to them having a strong opinion and are trustworthy on those issues, for example. Thus, as SDs main issues are on the socio-cultural dimension, and the established parties' main issues are on the socio-economic dimension, based on the realignment theory, the support of SD is expected to increase as the salience of socio-cultural issues increases. Therefore, it is suggested that there is a positive relationship between the salience of socio-cultural issues in parliamentary debates and the support of SD.

*Hypothesis 2a: There is a positive relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD.*

The realignment theory concerns the salience of issues in parliamentary debates as a proxy for issues in society, i.e. that the debates are related to the issues that are salient in the society and in the views of the voters in general. However, if they are viewed as a proxy for a party's general strategy, there are theories that contradict hypothesis 2a, and suggest a negative or no relationship instead – and this is related to the convergence of the established parties in the political spectrum.

Scholars have argued that the convergence of established parties can create opportunities for RRP to gain voters (Kitschelt & McGann, 1997; Rydgren, 2007). That parties converge in the political spectrum means that the perceived political difference between them decreases. Convergence can be caused both due to an actual change in the parties' political ideology and a relative convergence of the established parties, due to the entrance of a new actor on the political spectra. The former can, for example, happen as a result of the established parties using a triangulation strategy towards each other to gain more voters, which means that they adopt some of the opponent's ideas in order to be more appealing to voters in the middle of the spectrum. The latter is related to the relativity of the issue dimensions, explained previously, and can happen as a result of the established parties being compared to a new, more radical, party, or to more extreme views.

Convergence can occur on either (or both) of the socio-economic and socio-cultural issue dimensions, and RRP can benefit from both types. If there is a convergence on the socio-economic dimension, it can contribute to a depoliticization of this dimension, making it less engaging and vivid for the voters and the media (Rydgren, 2007; Schattschneider, 1975). This can, in turn, lead to the socio-cultural dimension gaining more salience, and to the voters being more inclined to base their voting decision on those issues. If there is a convergence on the socio-cultural dimension, due to an adversarial strategy by the established parties, RRP can capitalize by being the only voice for an opposing opinion.

The distance between parties within the issue dimensions is not measured here, but signs of convergence could manifest itself as a lack of salience on socio-cultural issues by the established parties. This could be the result of a dismissive strategy towards SD and their main issues, for example. In other words, the established parties converge in their focus on socio-economic issues relative to socio-cultural issues, leaving SD as the only party fighting for socio-cultural issues. This can potentially make the established parties “look all the same”, especially during a realignment process. According to this theory, if the salience of socio-cultural issues among the established parties is kept low, the support of SD should increase. For these reasons, this theory contradicts hypothesis 2a and indicates that there is a negative or no relationship between the relative salience of socio-cultural issues by the established parties and the support of SD.

*Hypothesis 2b: There is a negative or no relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD.*

When it comes to the leading and following relationship between the relative salience of socio-cultural issues in parliamentary debates and the support of SD, a variable that *leads* indicates that it precedes the other variable in time, for example, that a change in variable A at time  $t$  is related to a change in variable B at time  $t+1$ . As the established parties traditionally have focused on issues on the socio-economic dimension, whereas SD focus on the socio-cultural dimension (Hellström et al., 2012; Rydgren, 2007), it is reasonable to believe that the established parties would be slow and unwilling to react and to switch focus from their traditional dimension to a new. In addition, as mentioned previously, research has shown that the established parties mainly used a dismissive strategy towards SD at the beginning of their growth (Dahlström & Esaiasson, 2013; Heinze, 2018; Magnusson et al., 2018), which indicates that they ignored the socio-cultural issues for some time and that they might not spend more time on those issues than they must. On the basis of this, it is suggested that the support of SD precedes (leads) the change in salience on socio-cultural issues by the established parties.

*Hypothesis 3: The support of SD leads and the relative salience of socio-cultural issues in parliamentary debates follows.*

## Data and Methods

The main variables in this study were the *salience of socio-cultural issues in the parliament* and the *support of SD*. The *level of immigration* was used as a control variable. To construct the salience of issue dimensions-variable, a *structural topic-modeling* approach was used on speech data from the Swedish parliamentary debates. To analyze the relationship between the salience of socio-cultural issues and the support of SD, three methods were used: *descriptive side-by-side trend analysis*, *cross-correlation analysis*, and *linear regression analysis*.

The analysis was done on speeches between September 2006 and December 2019. September 2006 is when the support of SD starts to be measured. During some months there are no speeches in the parliament, such as during summer break; these months were therefore not included in the analysis for any of the variables.

### The Salience of Issue Dimensions in Parliament

The salience of issue dimensions-variable was created by analyzing the speeches made in the Swedish parliamentary debates by members of the seven established parties, namely Vänsterpartiet (V), Miljöpartiet (MP), Socialdemokraterna (S), Centerpartiet (C), Liberalerna (L), Moderaterna (M), and Kristdemokraterna (KD). In total, 212747 speeches were analyzed. All types of speeches were analyzed, this includes what is called “general debates”, “interpellations”, “other debates/speeches”, “party leader debates”, and “question time”.

### Data Gathering and Cleaning

The speeches are freely available and was downloaded from the parliament homepage (Anföranden - Riksdagens Öppna Data, 2020). Data cleaning was done using functions from Magnusson (2017/2019), who has provided a repository that is accessible through an R-package; it involves correcting variable formatting, correcting and harmonizing party names, removing punctuation, numbers, whitespace and stems from the speech texts, making all text lower case and more. In addition, words that were not important for creating topics of political issues were removed, thus, very common, irrelevant words that contributed a lot to the topic creation. Such words include names, greeting phrases, and stop words<sup>1</sup>.

### Topic Modeling

To capture the salience of issues in the speech data, a structural topic modeling (STM) approach was used (Roberts et al., 2019). The method builds upon the tradition of probabilistic topic models, such as latent Dirichlet allocation (LDA; Blei et al., 2003) and the correlated topic model (CTM; Blei & Lafferty, 2007; Roberts et al., 2019). It is appropriate for this case because it (i) takes metadata, such as time and speaker, into account when discovering topics and (ii) it generates an estimate, *gamma*, which shows the probability that a text belongs to a topic – this is useful for calculating the salience of topics. This method uses unsupervised machine learning to capture the different topics in the data, which has both its pros and cons (O’Connor et al., 2011). One drawback is that I do not have much control over the different topics created by the model, which

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<sup>1</sup> See appending R-code for the full list of removed words.

could be problematic if the topics do not make much sense. However, the advantage with such an approach is that the topics are not influenced, or biased, by the researcher but rather generated computationally.

Two decisions required by STM is *initialization* and *number of topics*,  $K$ . Initialization considers how to choose the starting values of the parameters in the model. The “Spectral” initialization was used as it is recommended for corpora with more than 10000 words (Roberts et al., 2019, p. 10). The idea of spectral initialization is to approximately find the vertices of the convex hull of the word co-occurrences, and using an algorithm by Mimno & Lee (2014), it projects a word co-occurrence matrix into a low dimensional space using t-distributed stochastic neighbor embedding (Maaten, 2014; Roberts et al., 2019, p. 13). This method allows for an automatic selection of the number of topics. In the present study, 83 number of topics was estimated ( $K = 83$ ). Earlier work made by (Magnusson et al., 2018), analyses the same corpus using 50 topics, with the purpose of analyzing the immigration topic. The higher number of topics was preferred in this case, because it was suggested by the model itself, and because a larger number of topics generate a finer differentiation between topics. This makes each topic more distinct and lowers the risk of topics being a mix of socio-cultural and socio-economic issues, and thus lowers the risk of sorting topics into the wrong issue dimension.

#### *Sorting Topics into Issue Dimensions*

The topics were divided into either *socio-economic issues*, *socio-cultural issues*, or *other issues*, depending on whether the type of words that constituted the topic could be affiliated to an issue dimension or not.

The allocation was guided by research conducted by The Manifesto Project (2019). The project provides the scientific community with parties’ policy positions derived from a content analysis of parties’ electoral manifestos (The Manifesto Project, 2019). They differentiate political positions using a state-market dimension, named *economy*, and a progressive-conservative dimension, named *society*. Table 1, below, lists the indicators used to determine positions on these dimensions. Topics that can be linked to any of the indicators in “economy” is coded as socio-economic issues, topics linked to any indicators in “society” is coded as socio-cultural issues, and issues that fall outside these indicators is coded as other issues. See appendix for a description of what words constitute the topics, what indicator it was linked to, and consequently what issue dimension it was sorted into.

**Table 1:** Indicators used in The Manifesto Project (2019) to determine positions on the *economy* and *society* dimensions.

<b>Economy (State &lt;-&gt; Market)</b>	<b>Society (Progressive &lt;-&gt; Conservative)</b>
Anti-Growth Economy	Environmental Protection
Controlled Economy	Internationalism
Corporatism/Mixed Economy	Law and Order
Economic Orthodoxy	Military
Economic Planning	Multiculturalism
Free Market Economy	National Way of Life
Incentives	Peace
Keynesian Demand Management	Social Equality
Market Regulation	Traditional Morality
Marxist Analysis	Underprivileged Minority Groups
Nationalization	
Protectionism	
Welfare State Expansion	
Welfare State Limitation	

#### *Calculating the Saliency of Issue Dimensions*

To calculate the saliency of socio-cultural, socio-economic, and other issues, the topic prevalence coefficient, *gamma*, was added together for topics sorted into respective issue dimension. Gamma is a coefficient that estimates the prevalence of topics in each text (speech; Roberts et al., 2019, p. 30), in terms of probability. Thus, the gamma-probability shows the probability that a speech belongs to a topic, and each speech has a gamma-probability for each of the, in this case 83, topics that together sum up to one. The saliency of the issue dimensions for each speech was calculated by summarizing the gamma for topics sorted into respective issue dimension. Now each speech has a probability to belong to each of the issue dimensions. Next, the total saliency of the issue dimensions was calculated by summarizing these probabilities for all the speeches. Calculating the saliency of issues in this way makes them relative to each other, rather than absolute, which is appropriate for this study as it is the relative change that is of interest.

The saliency of issue dimensions was measured with a sliding average, which means that a month's value is the average of the value of that month and the value of a few previous months. This is described by equation 1, below,

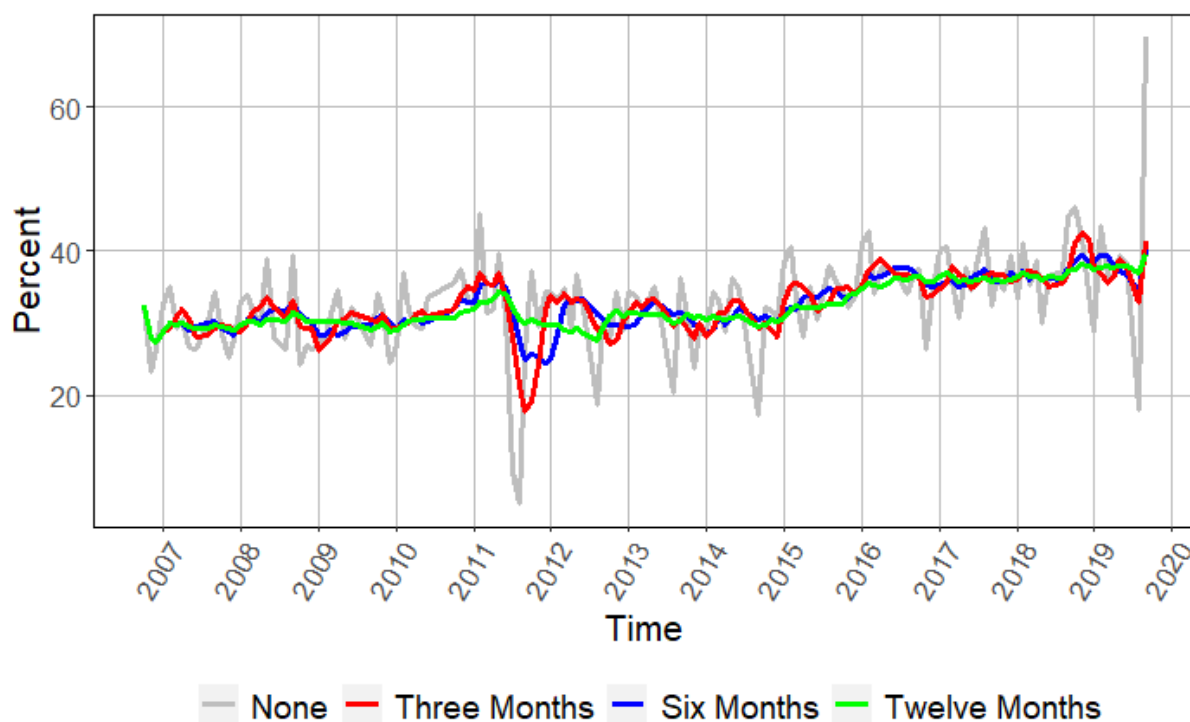
$$\bar{x}_t = \frac{x_t + x_{t-1} + \dots + x_{t-(n-1)}}{n}, \quad \text{Eq. 1}$$

where *n* is the number of months of sliding. Sliding average is a concept of smoothing a time series, and is useful for discovering long term trends and to remove white noise<sup>2</sup> (Shumway & Stoffer, 2017, p. 65). Sliding is an important consideration in time series analysis, and it is not

<sup>2</sup> White noise can be described as a collection of uncorrelated random variables with zero mean and finite variance (Shumway & Stoffer, 2017, p. 9),  $\{w_t\}$ , and as the random error of a time series (Ibid., p. 45).

always clear what sliding to use, if any. In addition, what sliding is appropriate can vary between variables. One must consider whether it is the monthly fluctuations or the general trend over a longer period that is of interest and find a balance where the white noise is removed, but the relevant variation is maintained. When it comes to the salience of issues in parliamentary debates, there are big differences month-to-month. What topics the politicians talk about in the parliament depends heavily on what is scheduled that month, and thus, differences in the salience of issues are sensitive to this scheduling (Riksdagsförvaltningen, 2020). Therefore, the value for a given month has a low dependency on values from previous months – i.e. just because socio-cultural issues were salient last month, it does not mean that it will be this month. The appearance of the time series is therefore similar to a “random walk”, and it is unlikely that monthly changes in what type of issues are debated are related to monthly changes in public opinion. A sliding average is therefore appropriate for seeing a more general trend and removing changes that are dependent on scheduling and other white noise. Figure 3 illustrates the trend of the relative salience of socio-cultural issues at different months sliding. Multiple sliding averages were used in the analysis, but a six- and twelve-months sliding seems to do the best job of removing white noise and keeping relevant variance.

**Figure 3:** The trend of the relative salience of socio-cultural issues at different sliding average.



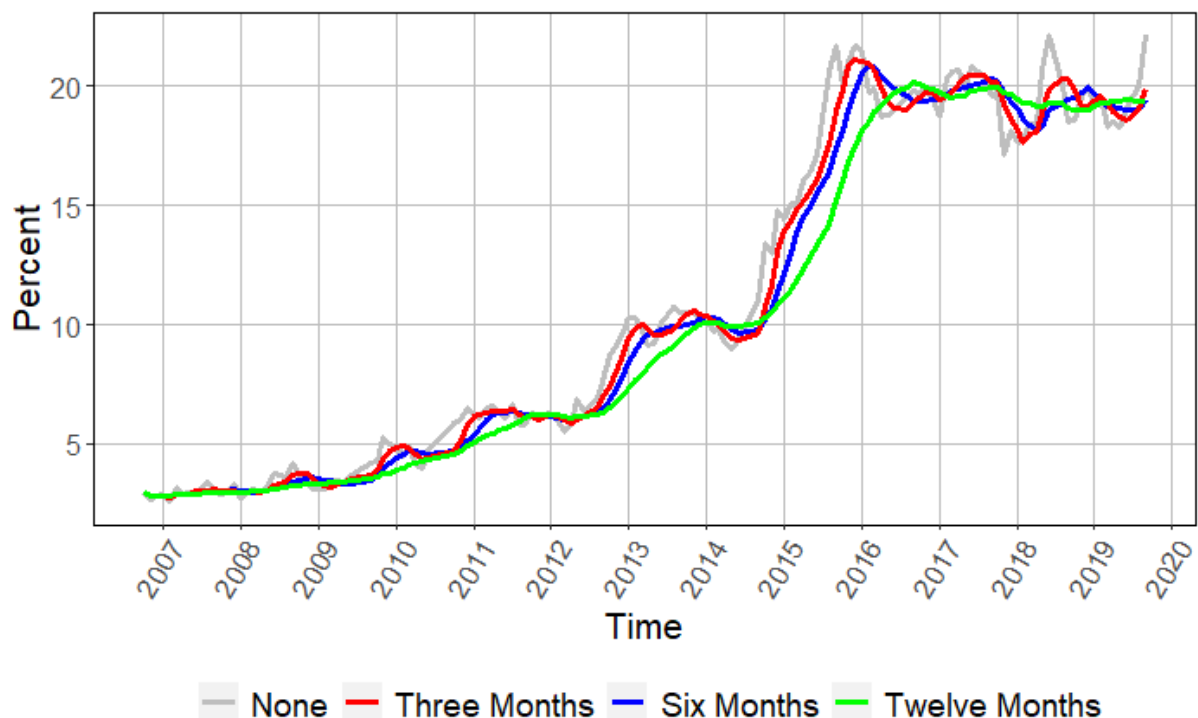
### Support of SD

Support of SD is measured as the share of the population that would vote for SD if it were election at a given point in time. This is measured regularly by multiple opinion institutes, and the data used in this study is collected from the website “val.digital” (*Sverigedemokraterna i Väljarbarometrar - Val.Digital*, 2020), who provides SD’s average support from 11 different opinion polling institutes each month<sup>3</sup>. The advantage of using the average results from many

<sup>3</sup> The polling institutes are Demoskop, Inizio, Ipsos, Novus, SCB, Sentio, Sifo, Skop, SVT, TV4, and YouGov.

different sources is that it is more stable and less sensitive to random measurement errors. Multiple sliding averages were used in the analysis. Figure 4, below, illustrates the trend of the support of SD at none, six-, three-, and twelve months sliding average. Public opinion is a more stable variable than the salience of issues in parliamentary debates. This is because the value for a given month is more dependent on values from previous months, which means that if the support of SD was 15 percent in January, it is likely that it will be around that number in February as well. While no sliding seems to have some white noise, the twelve months sliding looks to have done too much smoothing and removed relevant variation. Thus, a three- and six months sliding average seems to be the most appropriate here.

**Figure 4:** The trend of the support of SD at different sliding average.



### Level of Immigration

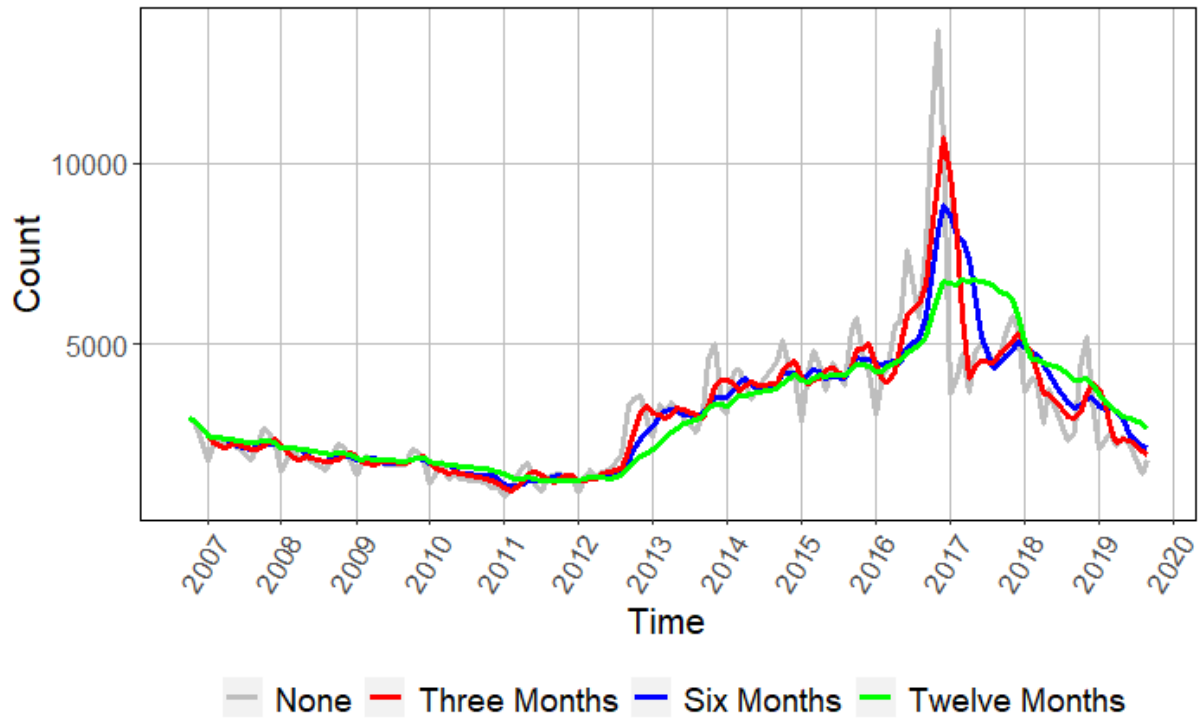
The data on the level of immigration to Sweden was gathered from the Swedish Migration Agency (Migrationsverket, 2020), and includes asylum seekers and family reunification of asylum seekers. Between 2006 and 2009, the data was reported yearly, and between 2010 and 2019 it was reported monthly. Therefore, the monthly values between 2006 and 2009 were interpolated. The interpolation was done in two steps. First, the 2010 to 2019 data was analyzed for any seasonal tendencies, thus if there is generally more immigration during some months of the year than others<sup>4</sup>. Then, the yearly immigration during the years 2006 to 2009 was distributed based on this data. It is possible that there are fluctuations in the level of immigration during these years that are not captured.

<sup>4</sup> See attached Appendix B. The years 2015 and 2012 were not used in the first step. As the number of migrants was concentrated to a few months these years they were considered extreme cases and not appropriate to base the interpolation on.



A twelve months sliding average of immigration was used in the analysis. The logic behind this is that it is reasonable to believe that political opinion and the salience of issues are not sensitive to monthly fluctuations in immigration, but rather by the level of immigration over a longer period. Figure 5, below, shows immigration trends with different sliding averages. Looking at 2016, for example, there is high immigration during a few months, and it is likely that this immigration will be relevant for a long time. This is captured better in the twelve months sliding average, than in the none-, three-, and six months sliding averages.

**Figure 5:** The trend of the level of immigration at different sliding average.



### Time Series Analysis

The analysis of the relationship between the salience of socio-cultural issues and the support of SD was done in two steps: (i) by descriptively examining the development of their respective trends, and (ii) correlation analyses. The first step includes a descriptive analysis of the development of the salience of socio-cultural-, socio-economic-, and other issues. The relative salience of socio-cultural issues was then compared side-by-side to the support of SD. This gives a first general impression of their relationship. The second step consisted of a cross-correlation analysis between the support of SD and the relative salience of socio-cultural issues. This analysis shows the correlation between the variables at different levels of lag and can thus tell whether there is one variable that is leading the other. The linear regression analysis was used to analyze the correlation found in step (ii), while controlling for the level of immigration, which could be a potential confounder, increasing both the salience of socio-cultural issues and SD support.

Two types of correlation analysis were done, cross-correlation analysis and classical regression analysis. Cross-correlation analysis was used to analyze the relationship between the support of SD and the salience of socio-cultural issues. The cross-correlation function (Equation 2) estimates

linear correlations in the data at different lags,  $h$ , which makes it possible to look for leading or lagging relations (Shumway & Stoffer, 2017, pp. 23, 30).

$$p_{xy}(h) = \frac{y_{xy}(h)}{\sqrt{y_x(0)y_y(0)}}. \quad \text{Eq. 2}$$

Ordinary least squares linear regression was used to be able to control for independent variables. In a time-series setting, the regular equation looks like the below,

$$y_t = \beta_0 + \beta_1 z_{t1} + \beta_2 z_{t2} + \dots + \beta_q z_{tq} + w_t, \quad \text{Eq. 3}$$

and linear regression using a lagged variable as following,

$$y_t = \beta_0 + \beta_1 z_{t-3} + w_t, \quad \text{Eq. 4}$$

where  $\beta_0, \beta_1, \dots, \beta_q$  are unknown fixed regression coefficients,  $z_{t1}, z_{t2}, \dots, z_{tq}$  are independent time series variables, and  $\{w_t\}$  is a random error (Shumway & Stoffer, 2017, p. 45).

To compare different models against each other, the *adjusted coefficient of determination* ( $R^2_{adj}$ ) and the *Bayesian Information Criterion* (BIC) was calculated.  $R^2$  measures the proportion of variation accounted for by all the variables in the model by using

$$R^2 = \frac{SSE_0 - SSE}{SSE_0}, \quad \text{Eq. 5}$$

where the  $SSE_0$  (see Shumway & Stoffer, 2017, p. 48) is the residual sum of squares under a reduced model,

$$SSE_0 = \sum_{t=1}^n (x_t - \bar{x})^2. \quad \text{Eq. 6}$$

$R^2_{adj}$  is a modified version of  $R^2$  that accounts for the number of explanatory variables  $p$  relative to the sample size  $n$ , and therefore does not automatically increase when new variables are added to the model. It is defined as:

$$R^2_{adj} = 1 - (1 - R^2) \frac{n - 1}{n - p - 1}. \quad \text{Eq. 7}$$

BIC is a measurement of fit, and a lower value of BIC indicates a better model. BIC is calculated as

$$\text{BIC} = \log \hat{\sigma}_k^2 + \frac{k \log n}{n}, \quad \text{Eq. 8}$$

where,  $k$  is the number of parameters in the model,  $n$  is the sample size and  $\hat{\sigma}_k^2$  is given by

$$\hat{\sigma}_k^2 = \frac{SSE(k)}{n}, \quad \text{Eq. 9}$$

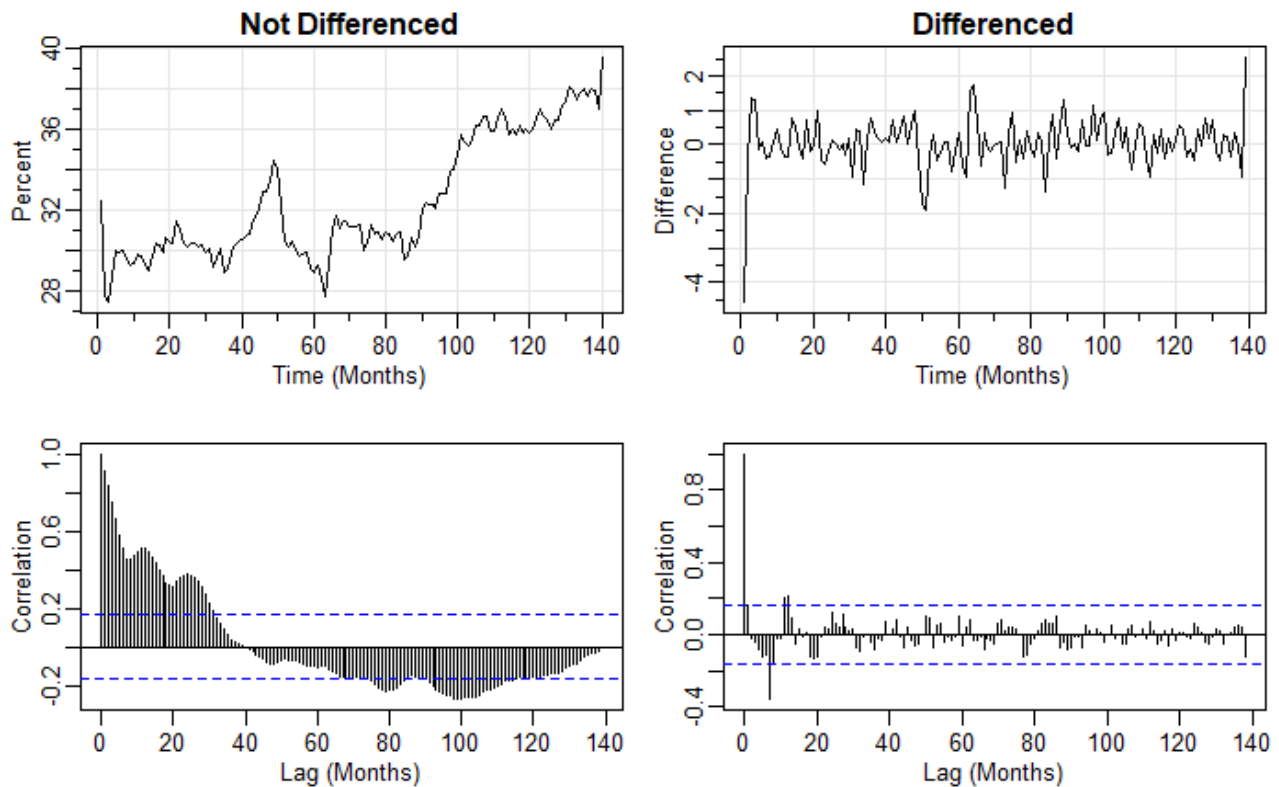
where  $SSE(k)$  denotes the residual sum of squares under the model with  $k$  regression coefficients (Shumway & Stoffer, 2017, pp. 45–50).

That the time-series variables are *stationary* is an important assumption in correlation analysis if one wishes to interpret the significance estimates (Shumway & Stoffer, 2017, p. 32). There are different definitions of stationarity in the literature, but common for most is that a time-series have equal mean and variance across time, and that it does not have any seasonal tendencies, i.e. that the observations are not autocorrelated (Shumway & Stoffer, 2017, pp. 19–23). The variables used in this study are not stationary. This can be seen by an ocular inspection – the variables have, for example, an upward trend which leads the mean to vary across time. The non-stationarity is also confirmed by an *Augmented Dickey-Fuller test* (ADF; Dickey, 2015; Shumway & Stoffer, 2017), which is a test to check for stationarity. To combat this, *differencing* was applied to the variables. Differencing (Equation 10) plays a central role in time-series analysis as it is an appropriate way of coercing time series data to become stationary, by eliminating a linear trend (Shumway & Stoffer, 2017, p. 56). The idea is that the previous value of  $x$  is removed from the current value so that only the difference from the previous value is recorded. ADF-tests after differencing show stationarity<sup>5</sup>.

$$\nabla x_t = x_t - x_{t-1} \quad \text{Eq. 10}$$

Figure 6 illustrates the trend and autocorrelation of the salience of socio-cultural issues, differenced and not differenced.

**Figure 6:** Trend (top) and autocorrelation (bottom) of the salience of socio-cultural issues when differenced and not differenced. 12 months sliding average.



<sup>5</sup> See appendix for the results from the ADF tests.

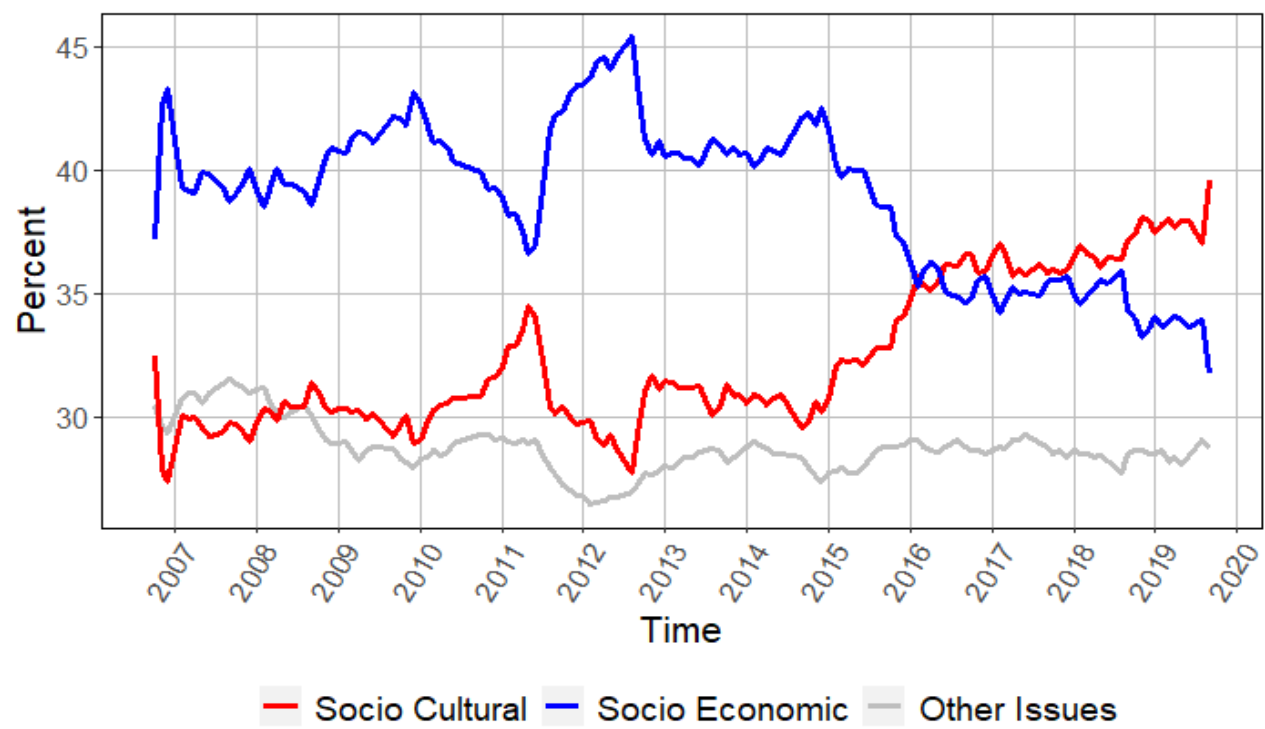
The cross-correlation analysis was done on both the differenced and original variables, separately. Analyzing the original variables can give some indication at what lag the level of correlation is strongest, and thus tell something about which variable leads and follows, if any, or if the correlation is strongest at 0 lag. When analyzing the differenced variables, the significance estimates can be interpreted and the analysis gives a more isolated effect of the salience of issues, as the effect of the general trend is removed. Together, these analyses give a more complete picture of the relationship between the support of SD and the salience of issue dimensions.

## Results

### Descriptive Analysis

Figure 7, below, illustrates the development of the socio-cultural-, socio-economic, and other issues during the rise of SD. The results indicate that the relative salience of socio-cultural issues has increased during the period and that a shift from a focus on socio-economic issues to socio-cultural issues has taken place. The peaks and trends follow the crises outlined in Figure 2 quite well. There was a high salience of socio-economic issues at the beginning of the period. The first peak is just at the end of 2006, just before the financial crisis and at the time when Fredrik Reinfeldt (Moderates) replaces Göran Persson (Social Democrats) as Prime Minister of Sweden. The Moderates is a moderate-right-wing party, which during their 2006 election campaign profiled themselves as “Sweden’s only labor-party”, a label traditionally held by the more left-wing Social Democrats party (“Arbetarparti,” 2020; Sundell, 2010). Socio-economic issues have a high salience throughout 2007 and 2008, increases further during 2009 during the European debt crisis and peaks at the end of 2009. In 2011, the salience of socio-cultural issues has a peak. This is likely connected to Barack Obama’s announcement of Osama bin Laden’s death on May 1, and the Utöya massacre in Norway on July 22. Another contributing factor could be that SD got elected into the parliament in September 2010. The salience of socio-economic issues peaks again in 2012, which lines up with the continued European debt crisis, and the second bailout of Greece. In 2015, the start of a shift in the salience of issues takes place; this is also the start of the European migrant crisis. In 2016, the salience of socio-cultural issues surpasses socio-economic issues for the first time (during the period of study), and has been consistently higher since then, with a continued increasing trend. Overall, these results support hypothesis 1, that the relative salience of socio-cultural issues in parliamentary debates between by the established parties has increased compared to socio-economic- and other issues during the rise of SD.

**Figure 7:** The trend of the salience of socio-cultural, socio-economic, and other issues in the parliamentary debates. Twelve months sliding average.



**Figure 8:** The trend of the relative salience of socio-cultural issues and the support of SD. Twelve months sliding average.

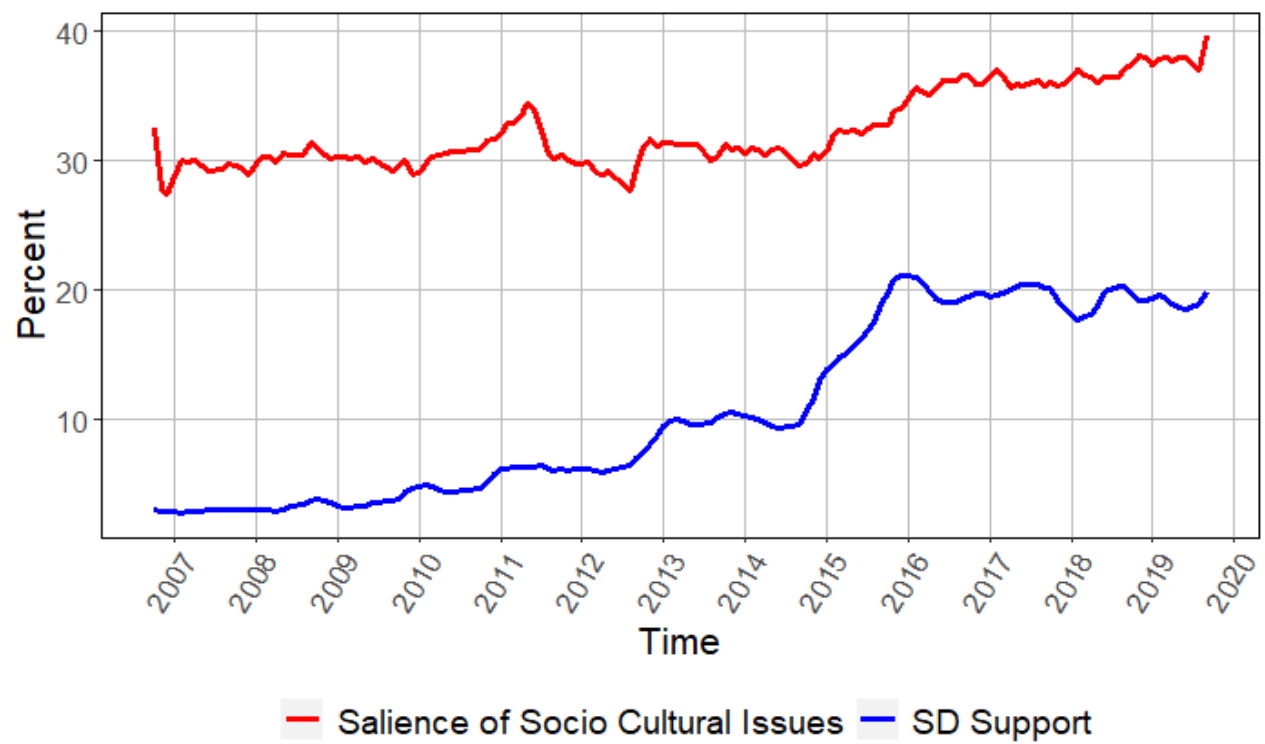


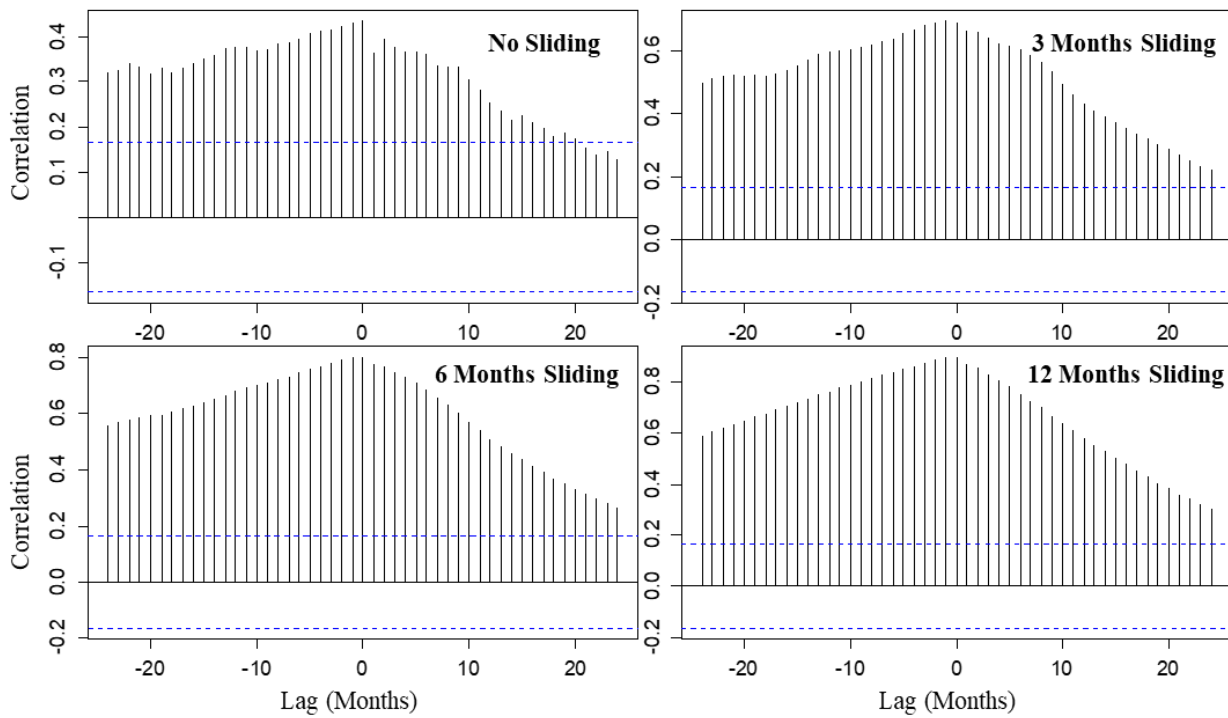
Figure 8, above, illustrates a trend comparison between the salience of socio-cultural issues (relative to socio-economic- and other issues) and the support of SD. The trends seem to follow a similar pattern. Both variables have a clear upward trend. The salience of socio-cultural issues starts at about 30 percent at the end of 2006 and almost reaches 40 percent at the end of 2019. The support of SD starts at about 3 percent at the end of 2006, increases steeply between 2014 and 2016, and is stable at around 20 percent between 2016 and 2019. This result is in line with hypothesis 2a, that there is a positive relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD.

Figure 8 can also hint about leading and following relations between the variables. First, the general increase in the support of SD starts before the general increase in the salience of issues. The support of SD has a slow, but consistent, increasing trend since 2008; the salience of socio-cultural issues, however, is relatively stable around 30 percent between 2007 and 2015 (with the exception of the 2011 peak), and then starts to increase more consistently. 2015 is also the point when the support of SD gets a real bump. When comparing the increase of the two around 2015, the support of SD clearly started before the salience of issues, which could suggest that the support of SD leads the salience of issues. These results are in line with hypothesis 3, that the support of SD leads and the relative salience of socio-cultural issues in parliamentary debates follows.

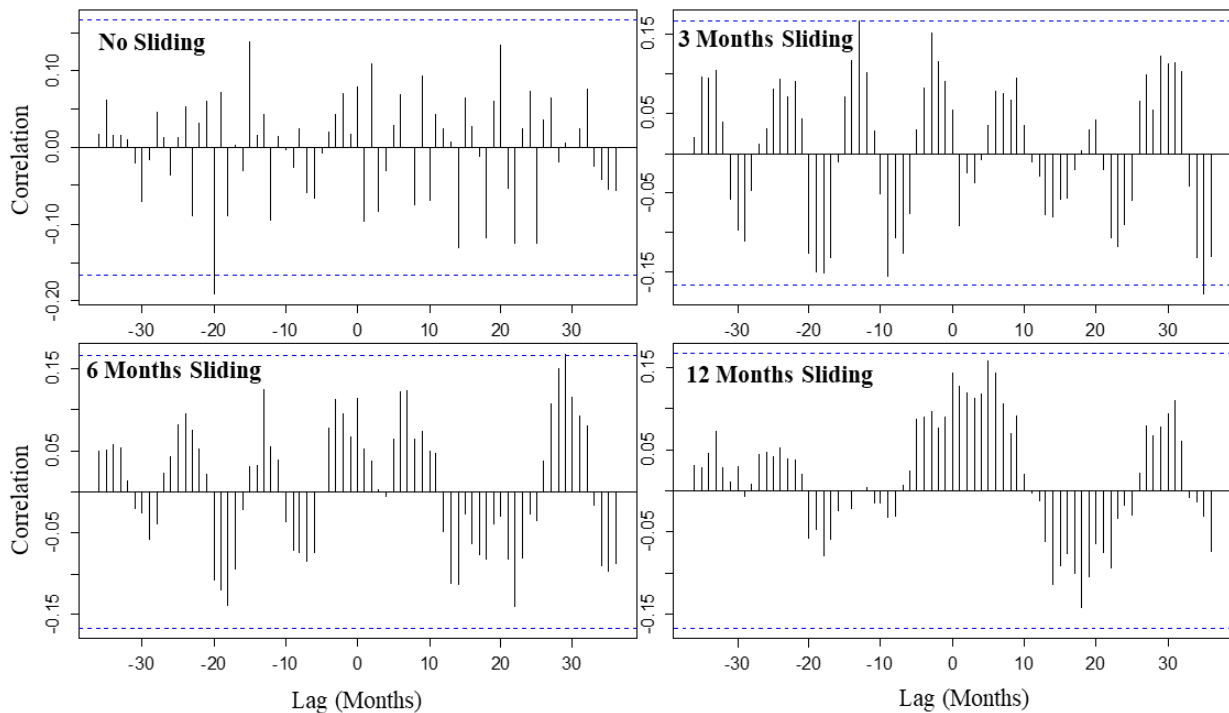
The first cross-correlation analysis in Figure 9, below, examines the leading and following relations between the salience of socio-cultural issues and the support of SD. The variables are analyzed before being made stationary. They are therefore descriptive rather than inferential, as the analysis did not consider the general trend or other independent variables. Thus, it describes the leading and following relation of the trends overall, rather than isolating the effect of the salience of issues on the support of SD. The same sliding averages are used for both variables throughout, to better assess what is leading and what is following.

The analysis in Figure 9 describes at what lags the correlation is strongest. The results indicate that the support of SD leads the salience of socio-cultural issues in parliamentary debates with about one month. At no sliding average, the strongest correlation between the variables is at 0, followed by -1 months lag. The distribution moves towards lower lags as the sliding average increases. At 3-, 6- and 12-months sliding average, the correlation peaks at -1 months lag. Overall, the four strongest correlations are found at lags 0, -1, -2, and -3. In addition, the correlation at negative lags (left-hand side), are generally stronger than the corresponding correlations at positive lags (right-hand side). The preceding values of the support of SD are, thus, a better predictor of a current value of the salience of issues, than vice versa. These results are in line with hypothesis 3, that the support of SD leads, and the salience of issues follows.

**Figure 9:** Cross-correlation analyses of the *support of SD* and the *relative salience of socio-cultural issues* at different sliding averages. Sliding averages are the same for both variables. Positive lag indicates that the salience of issues leads (precedes), negative lags that the support of SD leads. The variables are not differenced, significance levels (blue lines) cannot be interpreted here.



**Figure 10:** Cross-correlation analyses of the *support of SD* and the *relative salience of socio-cultural issues* at different sliding averages. Sliding averages are the same for both variables. Positive lag indicates that the salience of issues leads (precedes), negative lags that the support of SD leads. The blue lines indicate a significant correlation at the 95 percent confidence level.



## Inferential Analysis

Next, the cross-correlations were done after the variables were made stationary via differencing<sup>6</sup>. This analysis does a better job of isolating the effect of the salience of socio-cultural issues, as it removes the effect of the general trend. The analysis was done using the same sliding averages for both variables, for a better assessment of leading and following relations.

The cross-correlation analyses in Figure 10, above, show no consistent pattern regarding leading or following relations between the salience of socio-cultural issues in parliamentary debates and the support of SD. When applying no sliding average, the pattern looks like random white noise; one significant negative correlation is found at -20 lag, this finding is not consistent at other sliding averages and is likely due to chance. At 3- and 6-months sliding average, there is a tendency of there being positive correlations around 0 lag, which becomes clearer when using 12 months sliding average. However, the correlations are not significant at the 95 percent confidence level, which indicates that there is a bigger than 5 percent chance that the correlations are due to chance. These results conflict with hypothesis 3, that the support of SD leads and the relative salience of socio-cultural issues in parliamentary debates follows. In addition, they are in line with hypothesis 2b that there is a negative or no relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD, as no significant correlation is found.

The analysis above looks at correlations between the variables when they are at the same sliding average to analyze leading and following relations; however, the optimal operationalization for each variable might be at different sliding averages. Next, the sliding averages that were deemed most appropriate, regarding the balance between removing white noise and keeping relevant variance (see discussion in data and method), was analyzed for the respective variable. A 6- and 12-month sliding average was used for the salience of issues, and a 3- and 6- months for the support of SD.

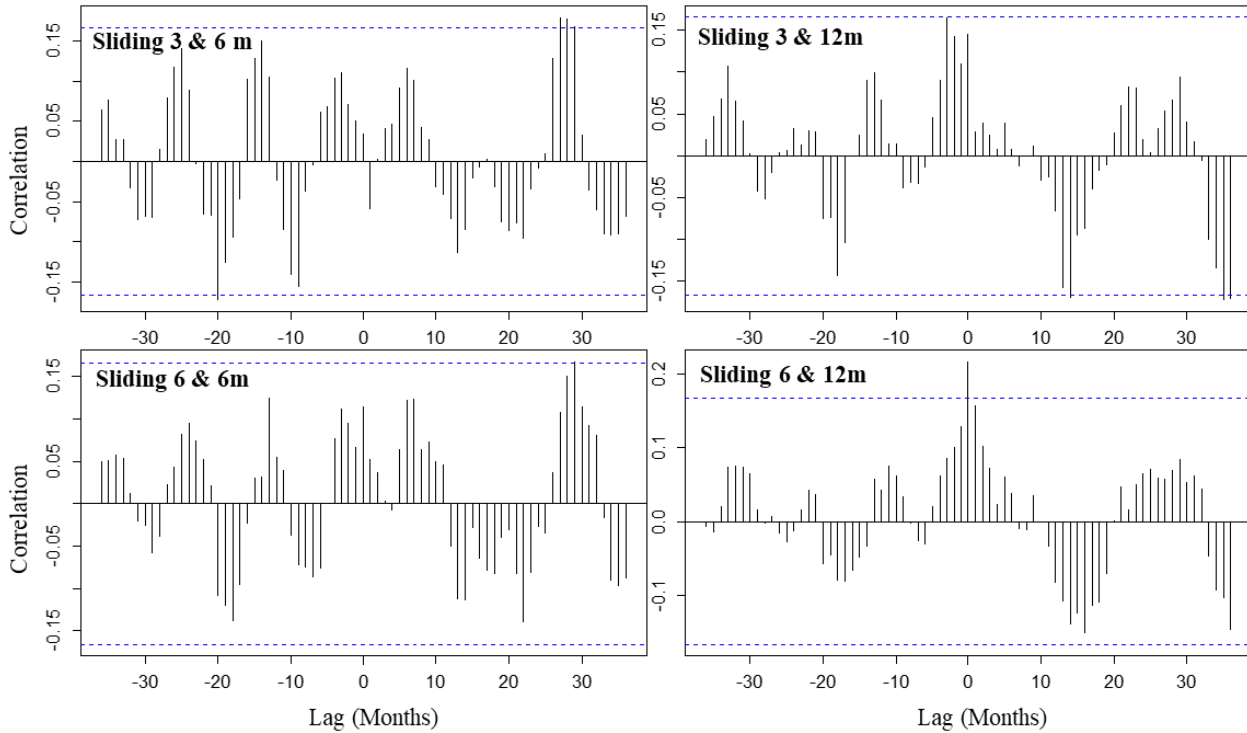
The most noteworthy result from the analysis in Figure 11, below, is that there is a significant correlation (with 95 percent confidence) between the salience of socio-cultural issues (twelve months sliding average) and the support of SD (six months sliding average), at 0 lag. This correlation is not significant in the other three analyses, but there are consistently positive (non-significant) correlations around lag 0.

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<sup>6</sup> See appendix for tests of stationarity before and after differencing.



**Figure 11:** Cross-correlation analyses of the *support of SD* and *the relative salience of socio-cultural issues* at different sliding averages. The first sliding average (displayed in bold) is for the support of SD, and the second for the salience of socio-cultural issues. Positive lag indicates that the salience of issues leads (precedes), negative lags that the support of SD leads. The blue lines indicate a significant correlation at the 95 percent confidence level.



Next, the correlation from the lower-right figure above was analyzed by linear regression (see table 2, below), controlling for *level of immigration* to see if the reason for the positive effect is that both the salience of socio-cultural issues and the support of SD is related to an increased immigration. In addition, an interaction effect between the two independent variables was controlled for (Model 3), to see if their joint effect is significantly greater than each effect on its own. The immigration variable was analyzed at 2 months lag, as that was the most relevant correlation to the support of SD<sup>7</sup>.

**Table 2:** Linear regression of the relationship between the support of SD in polls and the salience of socio-cultural issues in the Swedish parliament between 2006 and 2019. Estimates are beta-coefficients.

	Model 1	Model 2	Model 3	Model 4
<i>Socio-cultural salience (12m sliding)</i>	0.0848*	0.0915*	0.0922*	
<i>Immigration (12m sliding, 2m lag)</i>		0.0005**	0.0005**	0.0005**
<i>Socio-cultural salience*Immigration</i>			-0.0001	
<i>(Intercept)</i>	0.1137***	0.1128***	0.1131***	0.1209***
$R^2_{adj}$	0.0403	0.0883	0.0827	0.0552
<b>BIC</b>	-1.4311	-1.4518	-1.4177	-1.4448

\*  $p < 0,05$ ; \*\*  $p < 0,01$ ; \*\*\*  $p < 0,001$

<sup>7</sup> See appendix for a cross-correlation analysis between the level of immigration and the support of SD.

Comparing Model 1 and Model 2, the relationship between the relative salience of socio-cultural issues and the support of SD is still significant on the 95 percent confidence level, when controlling for the level of immigration. The estimate is still positive, and increases slightly, from  $\beta = 0.0848$  in Model 1 to  $\beta = 0.0915$  in Model 2. An estimate of  $\beta = 0.0915$  indicates that for every percentage point increase in the salience of socio-cultural issues, the support of SD increased by 0.0915 percentage points, on average, when controlling for the level of immigration. No significant interaction effect was found (Model 3). Model 2 had the best model fit, with  $BIC = -1.4518$  (lower is better) and  $R^2_{adj} = 0.0883$  (higher is better). In addition, the  $R^2_{adj}$  and BIC values suggest that the salience of socio-cultural issues contributes to the model fit. Comparing Model 2, to Model 4, where the salience of socio-cultural issues is excluded,  $R^2_{adj}$  drops from  $R^2_{adj} = 0.0883$  to  $R^2_{adj} = 0.0552$ , and BIC increases from  $BIC = -1.4518$  to  $BIC = -1.4448$ . Overall, the analysis indicates that the positive results found in the cross-correlation analysis do not stem from the level of immigration affecting both SD's support and parliamentary debates. This support hypothesis 2a, that there is a positive relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD.

## Discussion

The first hypothesis was that the relative salience of socio-cultural issues in parliamentary debates by the established parties has increased compared to socio-economic- and other issues. The results clearly support this hypothesis and show that there has been an increased salience of socio-cultural issues relative to socio-economic- and other issues. This was an expected result as a previous study showed that immigration became a more prevalent issue in the Swedish parliamentary debates during the migration crisis (Magnusson et al., 2018). The results support the idea that the salience of issues in parliamentary debates can be a proxy for macro events in society, as the salience of issues followed the crises going on in society during the time. The results are conflicting, however, when it comes to the salience of issues being a proxy for party strategy. According to previous research, the established parties (on both left and right) mainly used a dismissive strategy towards SD until 2010, when they entered the parliament, and a more adversarial strategy after that point (Dahlström & Esaiasson, 2013; Heinze, 2018; Magnusson et al., 2018). Thus, if the salience of issues is a proxy for party strategy, the salience of socio-cultural issues should start to increase after 2010. On the one hand, there is an immediate increase in the salience of socio-cultural issues after September 2010. On the other hand, (i) it is likely that some of the increase can be attributed to Barack Obama's announcement of Osama bin Laden's death on May 1, and the Utöya massacre in Norway on July 22, and (ii), the increase is not consistent over a longer period, the salience of socio-cultural issues remains on around 30 percent, and the real game-changing increase starts with the migration crisis in 2015. During that period, the salience of socio-cultural issues passed socio-economic issues and became more salient. These results are evidence of a realignment – a shift from an old to a new cleavage dimension in parliamentary debates. The consequences of a realignment, in this case, could be that most political behavior is determined by issues on the socio-cultural dimension, rather than the socio-economic – something that theories about the rise of RRP see as an important opportunity structure for such parties to mobilize voters (Rydgren, 2007). In addition, the more it becomes a norm that voters base their decision on socio-cultural issues, the more the established parties run

the risk of converging politically in the eyes of the voters, if they do not differentiate among themselves on the socio-cultural cleavage dimension.

The second hypotheses were that there is a positive (2a), or a negative or no (2b), relationship between the relative salience of socio-cultural issues in parliamentary debates by the established parties and the support of SD. The analyses show conflicting results. The results supporting hypothesis 2a are (i) that the descriptive analysis shows that they have a similar pattern (an increase over time), (ii) that cross-correlation analysis show consistent positive correlations (but not significant) around 0 lag, using different sliding averages (Figures 10 and 11), and (iii) that there is a significant correlation between the salience of socio-cultural issues (12 months lag) and the support of SD (6 months lag), when controlling for the level of immigration. The contradicting results, that support hypothesis 2b, are that most of the correlations are non-significant when the variables are made stationary (removing the effect of the general upward trend), and therefore, there is a high risk that they are due to chance. In addition, it can be argued that the significant correlation could also be due to chance, as so many correlation analyses were made, and that it therefore is likely that something becomes significant.

Overall, the results are not consistent and strong enough to reject hypothesis 2b, that there is no relation between the variables, in favor of hypothesis 2a. However, it is important to discuss what is analyzed, and what can be improved. The results indicate that one cannot consistently predict one with the other based on changes month to month. It is possible that there is a positive relation, but that it is too spread out over time. In such a case, a change in the support of SD is not consistently related to a change in the salience of issues on a specific lag, but rather, it is related to changes over multiple lags. In other words, for these analyses to show consistent and significant results, increases in the support of SD must consistently line up with increases in the salience of issues at a specific lag – and it is possible, and possibly more natural, that a relationship between these variables would be more complex, and inconsistent, than that. This idea is reflected consistently in the cross-correlation results in Tables 10 and 11, by there being multiple, weaker, positive relationships at lags around 0, rather than one strong relationship at a specific lag. Using sliding averages was a way to reduce the month-to-month fluctuations. However, because differencing is used, the analysis is still sensitive to monthly changes – only less so. In effect, when using sliding average when differencing, the current value is compared to the value that just got dropped out of the sliding average, instead of the immediately preceding value, as follows:

$$\nabla \bar{x}_t = \frac{x_t - x_{t-n}}{n}, \quad \text{Eq. 11}$$

where  $n$  is the number of months sliding<sup>8</sup>. Thus, a similar problem persists, that monthly differences between the variables must line up, consistently. This assumption might not be relevant in this case as it is reasonable that a relation between the support of SD and the salience of issues would be more inconsistent.

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<sup>8</sup> Equation 11 generates an equal outcome to differencing (Equation 10) on a sliding average variable (Equation 1).

Another explanation for why no consistent relationship was found could be that the two conflicting theoretical explanations cancel out. The *realignment theory* suggests that there is a positive relationship, and the *theory about convergence between the established parties* suggests that there is a negative or no relationship. According to the former, SD should benefit from an increased salience of socio-cultural issues in society, because the voters then base their voting decisions on socio-cultural issues, which increases the valence of parties with strong opinions on these issues. According to the latter, SD should benefit from the established parties using a dismissive strategy towards them and ignoring their issues. This would cause the established parties to converge in political space in the eyes of the voters, and make SD stand out as the only opposing party fighting for these issues. Thus, if both of these theories hold, and the salience of issues in parliamentary debates is a proxy for both issues in society and party strategy, there are two opposite forces affecting its relation to the support of SD.

The third hypothesis was that the support of SD leads and the relative salience of socio-cultural issues in parliamentary debates follows. As there is no clear inferential result when it comes to the relationship between the variables, it is consequently no clear leading or following relation. However, the descriptive cross-correlation analysis (Figure 9), show that, in this data, the support of SD leads the salience of issues with about one month on average. This indicates that changes in the support of SD preceded changes in the salience of issues by one month on average. However, these results do not persist when removing the effect of the general trend.

## Conclusions

The aim of this study was to analyze the salience of issue dimensions in the Swedish parliamentary debates during the rise of SD. The research questions were (i) how has the salience of socio-economic and socio-cultural issues developed over time? Has there been a shift?; (ii) is the change in the salience of issue dimensions by the established parties related to the support of SD?; and (iii) do the changes in the salience of issues lead (precede) changes in the support of SD, or do they follow?

The results showed a clear shift of salience from a focus on socio-economic issues to socio-cultural issues during the rise of SD, indicating that there has been a realignment – a change in what is considered the main cleavage dimension in Swedish politics. The ramifications of socio-cultural issues being the most salient are that RRP's have more opportunities to gain support. Voters can be more inclined to base their voting decision on those issues, which favors parties who fight for and are trustworthy in those issues in the eyes of the voters. In addition, the established parties run the risk of looking “all the same” if they do not clearly differentiate among themselves on socio-cultural issues.

The inferential relationship between the salience of issues in parliamentary debates and the support of SD remains uncertain. The results show consistent weak positive relationships over time, but a low predictive ability month-to-month. It is likely, however, that the relationship between these variables is more complex, and that analyzing month-to-month relationships is not an optimal method in this case.

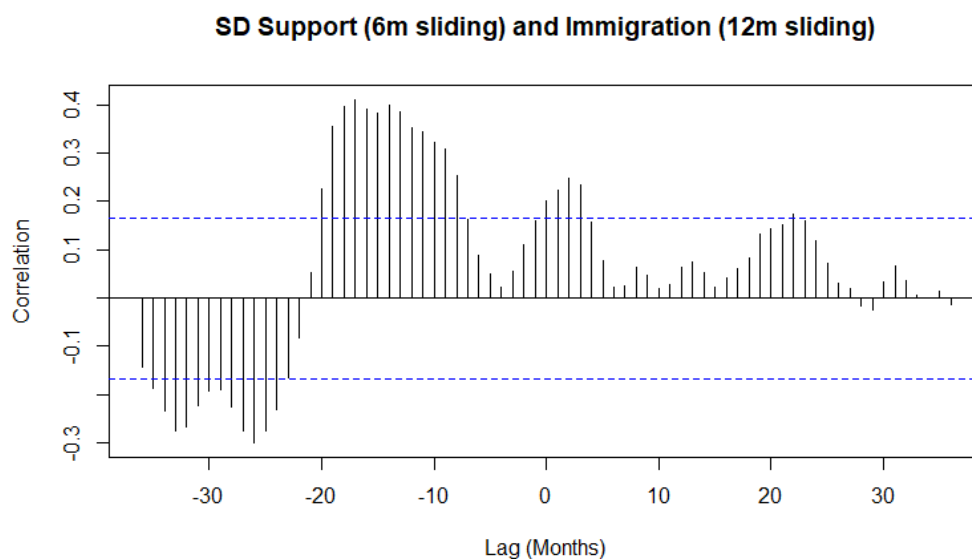
Descriptive results of the general trends showed that the support of SD leads the salience of issues by one month on average. However, this result was not persistent when the effect of the salience of issues was more isolated, and the effect of the general trend was excluded. That the established parties lagged behind could be a sign that they were slow to react to a changing political landscape, that they used a dismissive strategy towards SD and ignored their main issues, or that they had a populist mindset, where they adapted their agenda to the peoples' will.

There is much potential for further studies. First, future studies could try and find more optimal ways of analyzing the relationship between the salience of issues and the support of SD, that avoids the methodological issues in this study and get more clear-cut results. In addition, future studies can investigate how the salience of issues in parliamentary debates fit into causal scenarios explaining the rise of RRP. It might not be the case, for example, that the salience of issues directly affects the support of SD, but that it is one mechanism in a more complex causal chain. It is also possible for future studies to use the salience of issues variable constructed in this study to dig deeper into the data and look at differences between the established parties and differences between different types of speeches. Did, for example, different parties have different trajectories, and use different strategies? Something else one could look at is ways of studying the distance between parties within the issue dimensions, to explore the convergence in political space between the established parties more explicitly. Future studies could also look at the salience of specific issues, to understand what issues were important at different points in time, and what specific issues are driving the salience of issue dimensions.

## Appendices

### Cross-correlation of the Support of SD and Immigration

**Figure 12:** Cross-correlation analyses of the *support of SD* and *level of immigration* at 3- and 12-months sliding averages, respectively. Positive lag indicates that the level of immigration leads (precedes), negative lags that the support of SD leads. The variables are differenced, and the blue lines indicate the 95 percent confidence level.



The cross-correlation analysis in Figure 12 indicates that the level of immigration leads the support of SD with about 2 months lag. The correlations at negative lags are irrelevant for this analysis, they are likely due to extreme values in the respective variable lining up and not a general phenomenon (see Figures 4 and 5). In addition, there is little theoretical support for why an increased support of SD would lead the level of immigration. It is more reasonable to believe that immigration that has occurred has an effect on public opinion. For these reasons, the 2-month lagged lead for level of immigration is used in the analysis.

## Stationarity Tests

**Table 3:** Augmented Dickey-Fuller Tests (Dickey, 2015). Values are p-values. The alternative hypothesis is that the variable is stationary.

	Non-differenced	Differenced
Socio-cultural Salience (no sliding)	0.01*	0.01*
Socio-cultural Salience (3 months sliding)	0.01*	0.01*
Socio-cultural Salience (6 months sliding)	0.03357	0.01*
Socio-cultural Salience (12 months sliding)	0.6599	0.01*
Support of SD (no sliding)	0.3953	0.01*
Support of SD (3 months sliding)	0.3652	0.01189
Support of SD (6 months sliding)	0.4964	0.01*
Support of SD (12 months sliding)	0.4243	0.24
Immigration level (12 months sliding)	0.5779	0.01*

\* p-value is smaller than printed p-value.

## Topics to Issue Dimensions

**Table 4:** Sorting Topics into Issue Dimensions. Topic number, what words constitute the topic (highest probability), indicator from the Manifesto Project (The Manifesto Project, 2019), and issue dimension the topic was sorted into.

Topic	Highest Probability Words in Topic	Indicator	Issue
1	skog, mångfald, biologisk, skydd, mark, natur, bruk	Environmental Protection	Socio Cultural
2	ryssland, nato, säker, säkerhetspolitisk, rysk, militär, hot	Military	Socio Cultural
3	kvinn, män, jämställd, kvinnor, arbet, kön, lön	Social Equality	Socio Cultural
4	jobb, väx, arbet, förr, jobbet, lön, anställ	Corporatism/Mixed Economy	Socio Economic
5	kommunal, statsbidrag, bidrag, generell, kommunsektorn, kommunalt, skol	Welfare State Expansion	Socio Economic
6	äktenskap, kyrkan, gift, trossamfund, diskriminering, könsneutral, kompromiss	Traditional Morality	Socio Cultural
7	nordisk, länd, nord, samarbetet, rådet, delegation, kerstin	Internationalism	Socio Cultural
8	polis, polismynd, polisutbildning, arbet, rättsväsendet, krist, kriminalvård	Law and Order	Socio Cultural

9	migrationsverket, sök, asylsök, uppehållstillstånd, stann, arbetskraftsinvandring, asyl	Underprivileged Minority Groups/Multiculturalism	Socio Cultural
10	våld, kvinn, utsat, sexuell, män, utsät, skydd	Law and Order	Socio Cultural
11	utsläpp, grön, klimatet, värld, flyget, klim, miljö	Environmental Protection	Socio Cultural
12	skolan, lär, skol, elev, kunskap, betyg, undervisning	Welfare State Expansion	Socio Economic
13	land, värld, värd, liv, frihet, människor, medborg	Internationalism	Socio Cultural
14	fisk, vatt, östersjön, hav, fisket, havet, miljöbalk	Environmental Protection	Socio Cultural
15	skatt, betal, tjänst, beskattning, avskaff, höjd, gunn	Welfare State Expansion	Socio Economic
16	läkemedel, apotek, apoteket, medicin, monopol, bengtsson, elin	Nationalization	Socio Economic
17	ställning, bedöm, prov, bakgrund, ordning, ytter, ändring	Other	Other Issues
18	brott, straff, domstol, döm, dom, fäng, kriminalvård	Law and Order	Socio Cultural
19	arbetslös, ersättning, akassan, ekonomisk, klyft, lön, ökar	Welfare State Expansion	Socio Economic
20	kultur, muse, konstnär, folkbildning, film, kulturpolitik, bibliotek	Multiculturalism	Socio Cultural
21	sjuk, försäkringskassan, arbet, sjukförsäkring, rehabilitering, sjukskrivning, ersättning	Welfare State Expansion	Socio Economic
22	barn, ung, ungdom, socialtjänst, vuxn, psykisk, social	Underprivileged Minority Groups	Socio Cultural
23	järnväg, infrastruktur, trafikverket, väg, investering, tåg, underhåll	Welfare State Expansion	Socio Economic
24	forskning, forsk, kunskap, vetenskap, innovation, internationell, utveckling	Welfare State Expansion	Socio Economic
25	barn, föräldr, familj, barnet, föräld, papp, hemm	Underprivileged Minority Groups	Socio Cultural
26	grann, bruk, folk, exak, nästan, konst, hävd	Other	Other Issues
27	polis, brotts, organiser, bekämp, trygg, kriminell, terrorism	Law and Order	Socio Cultural
28	utbildning, vuxenutbildning, gymnasieskolan, kunskap, utbild, gymnasiet, studi	Welfare State Expansion	Socio Economic
29	försvarsmak, försvaret, beredskap, försv, civil, militär, förmåg	Military	Socio Cultural
30	public, tidning, tv, servic, medi, finsk, margaret	Welfare State Expansion	Socio Economic

31	offent, upphandling, marknad, social, tjänst, sektorn, sekt	Nationalization	Socio Economic
32	landet, regional, region, lokal, län, ort, flytt	Other	Other Issues
33	arbetsgiv, arbetsmarknad, modell, lön, kollektivavtal, arbetsplats, anställd	Free Market Economy	Socio Economic
34	arbetsförmedling, servic, försäkringskassan, aktör, lindgr, regleringsbrev, sylvi	Free Market Economy/Incentives	Socio Economic
35	rätt, mänsk, irak, iran, demokrati, abort, kristn	Peace	Socio Cultural
36	företag, småföretag, näringslivet, anställd, näringsliv, arbetsgivaravgift, företaget	Corporatism/Mixed Economy	Socio Economic
37	idrot, förening, idrottsrör, ideell, evenemang, aktivitet, folkrör	Other	Other Issues
38	integritet, teknik, digital, internet, teknisk, kommunikation, nätet	Other	Other Issues
39	bil, drivmedel, bränsel, köp, fordon, volvo, kör	Environmental Protection	Socio Cultural
40	näring, besöksnäring, turism, kreativ, bransch, väx, rothenberg	Economic Planning	Socio Economic
41	resurs, budget, ytter, prioriter, presenter, höst, ökad	Economic Planning	Socio Economic
42	mål, gör, målet, området, utvärdering, gjort, verktyg	Other	Other Issues
43	vård, sjukvård, äldr, hälso, patient, personal, äldreomsorg	Welfare State Expansion	Socio Economic
44	konsument, eva, lån, smslån, reklam, kredit, konsumentverket	Market Regulation	Socio Economic
45	bolag, sälj, vattenfall, ägar, bolaget, försäljning, affär	Nationalization	Socio Economic
46	sjöfart, lastbil, transport, väg, fartyg, fordon, kilometerskat	Both/Other	Other Issues
47	eu, länd, europ, europeisk, kommission, union, förhandling	Internationalism	Socio Cultural
48	avgift, betal, skuld, tandvård, kron, kostnad, ekonomisk	Welfare State Expansion	Socio Economic
49	åsik, kommission, presstödet, grundlag, strid, folkomröstning, bo	Other	Other Issues
50	faktum, allv, beklag, tillfälle, enig, vald, gälld	Other	Other Issues
51	mat, produk, konsument, livsmedel, produktion, ekologisk, producer	Environmental Protection/National Way of Life	Socio Cultural
52	syri, turkiet, fred, demokrati, humanitär, utveckling, fn	Peace	Socio Cultural
53	bank, finansiell, riksbank, lån, risk, kris, stabilitet	Free Market Economy	Socio Economic
54	landsbyg, kör, glesbyg, väg, bor, landet, trafik	Other	Other Issues



55	post, generaldirektör, departement, chef, damberg, departementet, brev	Other	Other Issues
56	konflik, afghanistan, internationell, militär, fred, väpn, lind	Peace	Socio Cultural
57	förtroend, kontroll, handling, hantering, allvar, patrik, korrek	Other	Other Issues
58	kollektivtrafik, res, stockholm, arland, åka, trängselskat, förbifart	Welfare State Expansion	Socio Economic
59	förskolan, förskol, funktionsnedsättning, barnomsorg, behov, barn, assistan	Welfare State Expansion/Nationalization	Socio Economic
60	välfärd, privat, vinst, offent, priv, skattepeng, utför	Welfare State Expansion/Nationalization	Socio Economic
61	kris, ekonomisk, ekonomi, sysselsättning, ekonomin, tillväxt, offent	Free Market Economy	Socio Economic
62	avtal, skydd, avtalet, apfond, teckn, fond, skyddet	Welfare State Expansion	Socio Economic
63	väg, bygg, bäst, nytt, hand, lyck, otro	Other	Other Issues
64	arbetsmarknad, arbetslös, ungdom, ung, arbet, arbetsförmedling, arbetsmarknadsminist	Free Market Economy/Incentives	Socio Economic
65	pensionär, skattesänkning, arbet, pension, skatt, inkomst, äldr	Welfare State Expansion	Socio Economic
66	länd, värld, biståndet, bistånd, global, usa, handel	Internationalism	Socio Cultural
67	varg, jakt, naturvårdsverket, jäg, rovdjur, strandskyddet, jag	Environmental Protection	Socio Cultural
68	stöd, insats, organisation, stödj, engagemang, stödet, engager	Other	Other Issues
69	utbildning, universitet, högskol, student, högskolan, plats, lärosät	Welfare State Expansion	Socio Economic
70	arbet, utveckling, arbetet, utveckl, nationell, bidr, fortsat	Other	Other Issues
71	kent, uranbrytning, uran, malm, gruv, gruvnäring, mineral	Environmental Protection	Socio Cultural
72	kärnkraft, bolund, kärnkraftverk, hamilton, bygg, reaktor, subvention	Environmental Protection	Socio Cultural
73	peng, medel, finansier, miljon, anslag, finansiering, anslaget	Economic Planning	Socio Economic
74	skatteverket, bransch, svart, seriös, kontroll, vit, oseriös	Free Market Economy	Socio Economic
75	bygg, bostäd, hyresrät, bost, bostadsbygg, hyr, lägen	Welfare State Expansion	Socio Economic
76	djur, djurskyd, jordbruksverket, lantbruk, jordbruksminist, eskil, erlandsson	Environmental Protection	Socio Cultural
77	miljard, kron, miljon, ungefär, kostnad, året, kost	Free Market Economy	Socio Economic

78	nyanländ, född, integration, invandr, arbet, utrik, arbetsmarknad	Underprivileged Minority Groups/Multiculturalism	Socio Cultural
79	israel, palestinsk, palestin, erkän, klustervap, palestini, gaz	Peace	Socio Cultural
80	energi, förnyb, el, vindkraft, förnybar, investering, energieffektivisering	Environmental Protection	Socio Cultural
81	alkohol, häls, missbruk, narkotik, systembolaget, ungdom, folkhälsan	National Way of Life	Socio Cultural
82	gräns, danmark, norg, vap, finland, dansk, illegal	Internationalism	Socio Cultural
83	beroend, ålderspresident, problematik, rekommender, påverk, intet, adresser	Other	Other Issues

## Software

### R

R version 4.0.0 (2020-04-24)

RStudio version 1.3.959 (2020-05-18)

Platform: x86\_64-w64-mingw32/x64 (64-bit)

Running under: Windows 10 x64 (build 18362)

### Main Packages

Structural Topic Model: *stm version 1.3.5* (Roberts et al., 2019)

t-Distributed Stochastic Neighbor Embedding: *Rtsne version 0.15* (Maaten, 2014)

Applied Statistical Time Series Analysis: *astsa version 1.10* (Shumway & Stoffer, 2017)

Dynamic Linear Regression: *dynlm version 0.3-6* (Zeileis, 2019)

All packages used can be found in the appended R-code (Appendix A).

## Attached Appendices

### Appendix A: R-files

- Main code used for analysis and data gathering
- External code referenced in the main code, such as cleaning procedures taken from Magnusson et al. (2018)
- Output of data and models referenced in the main code

### Appendix B: Excel-files

- Data files referenced in the main code
- Interpolation of the immigration variable

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