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Political Bias in Inflation Expectations

A quantitative analysis of the Michigan Survey of Consumers

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Declaration of Authorship

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Management Summary

This thesis investigates the partisan bias in inflation expectations among survey respondents of the University of Michigan Survey of Consumers over the period January 2006 – March 2023. The study reveals that individuals who support the party holding the presidency tend to expect lower inflation rates, while supporters of the opposing party generally anticipate higher inflation rates compared to those with no specific party affiliation. The analysis highlights that this partisan bias is more pronounced among strong affiliates of the Republican or Democratic party. Furthermore, the bias is generally stronger during a supportive party's presidency compared to the bias toward higher inflation expectations during an opposing party's presidency. These findings suggest that political affiliation has a substantial influence on inflation expectations, with partisan bias playing a significant role. Additionally, the analysis provides evidence that the partisan bias in inflation expectations is influenced not only by the presidency but also by the majority distribution in the legislative chambers. When one party has full control of both chambers and the presidency, regression coefficients from both strong and weak political affiliates point to a higher bias compared to periods where the party opposing the president hold the majority in at least one legislative chamber.

To disentangle the difference in inflation expectations, a Blinder-Oaxaca decomposition method is deployed. The decomposition results demonstrate that, during periods when the partisan theory holds, a statistically significant portion of the difference in inflation expectations between strong Republicans and strong Democrats, as well as overall Republicans and Democrats, cannot be explained by differences in individuals' characteristics. This suggests that the bias is inherently tied to political ideology rather than solely driven by personal attributes. Additionally, the findings indicate a considerable increase in the overall bias in inflation expectations in recent legislative periods. Understanding and acknowledging the presence and the dynamics of partisan bias in inflation expectations is crucial for economic decision-making, policy formulation, and fostering informed public discourse.

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OLS	Ordinary Least Squares
FED	Federal Reserve

1 Introduction

The recent uptrend in inflation after the COVID-19 crisis has ignited a discussion about the inflation management of central banks. The debate has become increasingly politically fuelled, especially in the USA, where inflation has hit 30-year highs, and the political division is strong. In modern central banking, where forward guidance has become an essential policy tool, inflation expectations have played an important role in the inflation management. Inflation expectations are, therefore, part of a loop in which central banks try to manage inflation by employing forward guidance about their policy direction, which in turn is influenced by the inflation expectations of the agents (De Fiore et al., 2022). These expectations play a crucial role in shaping economic behaviour and outcomes. For businesses, inflation expectations can influence investment decisions and wage negotiations with employees and union groups. For households, inflation expectations shape saving and spending behaviour. Inflation expectations that are stable and well-anchored can help promote macroeconomic stability by reducing the need for volatile intervention from central banks and support them in meeting its inflation target. Contrastingly, when inflation expectations are volatile or poorly anchored, they can lead to economic instability as individuals and businesses struggle to make informed decisions in a rapidly changing economic environment. This makes it very difficult for central banks to manage their inflation targets.

The expectations about the strength of future inflation can be derived from either professional sources, such as market participants and professional forecasters, or from household surveys. Although inflation expectations from professional sources are easier to obtain, more frequent, and often less biased, they fail to capture the inflation expectations of the general public, which in turn will affect consumption, drive wage demand and will shape the public inflation debate (De Fiore et al., 2022). This link to wage growth and consumption decisions is why central banks such as the Federal Reserve [FED] are very concerned with inflation expectations from survey-based business and household data, even though these are somewhat subjective expectations of ordinary economic agents (Weber et al., 2022).

Inflation expectations are formed through a complex process that involves a wide range of economic and psychological factors. Economic variables, such as past inflation, interest, and exchange rates, can all influence inflation expectations. Psychological factors, such as individual perceptions, media coverage, and political messaging, can also significantly shape inflation expectations. In previous research it has, however, been shown that data from survey-based economic expectations is often biased (Coibion et al., 2018). One of these biases is the partisan bias, in which survey participants generally expect the future economic conditions to be superior if the political party with which they sympathize is currently the governing party, and vice versa (Duch et al., 2000; Bartels, 2002; Gerber & Huber, 2010; Mian et al., 2021; Coibion et al., 2018; Okolikj & Hooghe, 2022). This partisan bias is also present in survey data on inflation expectations (Coibion et al., 2018; Bachmann et al., 2021; Gillitzer et al., 2021; Choi et al., 2022). In previous research it has been further suggested that the partisan divide is deepening, leading to a more considerable bias in economic projections from survey data (Brady et al., 2022).

The recent up-tick in inflation has increased the attention paid to survey-based inflation expectations, like those published in the Michigan Survey of Consumers (University of Michigan, 2023). Market participants and policymakers analyse the data alike, since the monthly readings reveal the development of inflation expectations, which will, in turn, affect the behaviour of central banks and other economic policymakers. Given the importance of inflation expectations in the current high inflation environment and the strong partisan divide, it is essential to understand the impact of the partisan bias on inflation expectations and how it has evolved over time. By examining the relationship between political affiliation and inflation expectations, the aim of this study is to contribute to the growing literature on the impact of political biases on economic expectations.

1.1 Question and Relevance

The primary research question of the work for this thesis is associated with an investigation of the extent of partisan bias in inflation expectations using data from the University of Michigan Survey of Consumers. This topic is of great relevance in the current economic and political landscape, where beliefs about inflation rates can have significant implications for economic decision-making and monetary policy. Moreover, partisan biases in economic assumptions have been documented in prior research, indicating that political affiliations can shape individuals' views on economic issues (Coibion et al., 2018; Bachmann et al., 2021; Gillitzer et al., 2021; Choi et al., 2022). The goal of the thesis is to provide insight into the development of partisan bias in inflation expectations over time. By including a quantifiable measure for the strength of the bias in inflation expectations, the analysis indicates how its strength has developed over time and how shifts in the political environment influence the bias in inflation expectations. Since previous studies have been concentrated on the changes in partisan bias between different presidential periods, the work for this thesis involves an investigation of the relative strength of the partisan bias in inflation expectations over two-year legislative periods throughout four different presidential periods. By leveraging the rather precise definition of political affiliation in the University of Michigan Survey of Consumer, additional knowledge about the extent of any bias present in terms of differing strengths of political affiliation can be gained. By filling this gap in the literature, this study aims to contribute to our understanding of the factors that shape individuals' inflation expectations and the potential implications of partisan biases in economic decision-making. Ultimately, this research about the possible impact of political biases on inflation expectations contributes to the ongoing debate on the role of political beliefs in shaping economic expectations. Additionally, by leveraging a decomposition technique, more insights can be gained about the true impact of partisan bias in inflation expectations.

This leads to the following research question:

How has partisan bias in inflation expectations evolved over time among survey respondents of the University of Michigan Survey of Consumers, and what is the impact of varying degrees of political affiliation?

1.2 Methods and Approach

To answer the above-proposed research question, the work for this thesis first involved a review of the existing literature on political bias and economic projections, focusing on existing work on political bias in inflation expectations. Since the underlying examined bias was the partisan bias, current research on the topic was included to allow a better interpretation of its implications on inflation expectations. The central part of the presentation in this thesis is based on an analysis of the inflation expectations of participants of the University of Michigan Survey of Consumers. Descriptive analysis of the data including summary statistics was the basis for the analysis. This initial analysis provided a broad overview of the data and helped with the identification of any potential confounding factors that had to be accounted for in the construction of the regression analysis.

Within the regression, the inflation expectations of individual participants were combined with their stated political affiliation: strong Democrat/Republican, not so strong Democrat/Republican and Independent, to create an ordinary least square regression [OLS]. The political affiliations of the survey participants, thereby, formed variables in the OLS regression, which revealed the amount of bias incorporated in the inflation expectation compared to the participants in the reference category, which were politically independent. Although the political landscape in the US changes most with presidential elections, the analysis involved the comparison of different two-year legislative periods between the presidential election and the mid-term election, to capture the changing political majority distribution throughout a presidential period.

To evaluate to what extent the difference in inflation expectation are due to political biases, the thesis followed Bachmann et al. (2019) as well as Choi et al. (2022) in deploying the Blinder-Oaxaca decomposition method to disentangle the difference in expected inflation into a part which can be explained by idiosyncratic factors of the participant, such as educational background, income etc. and the unexplained portion of the difference, which was assigned to the political bias.

2 Literature Review

2.1 Partisan Bias

Partisan bias generally refers to individuals' tendency to hold different views and expectations depending on their political affiliation or ideology. Consequently, individuals base the most immediate and impactful assumption with regard to their political decision-making processes on a political party label (Clementson, 2018). Since this phenomenon is most clearly observable in the two-party system of the US, this topic has been intensely studied over the years. At the heart of the partisan bias is the assumption that politicians who share their party affiliation are more similar to themselves than politicians of the opposing party and that members of the supporting parties are more honest and ethical than members of the opposing party (Ehrlich & Gramzow, 2015; Rahn, 1993).

The perception that information coming from supporting party members is more honest and rarely questioning this information can be linked to the truth-default theory. It emphasises the cognitive default of believing other people's messages, which results in a truth bias towards processing messages as honest versus deceptive (Levine, 2014). Levine (2014) has argued that people generally presume others to be honest because they do not identify deception as a possibility during communication, or simply because there is no efficient way to identify deception. The only way to identify deception during communication is through emotions, strategic self-presentation, and other non-verbal behaviours, all of which are neither precise nor accurately measurable. According to Levine (2014), the strength of this truth default and the degree to which received information is not questioned depends on a combination of subjective and unreliable factors. This is supported by Bond & DePaulo, (2008) and Law et al., (2018), who found common beliefs, values, or knowledge as the forces contributing most to this phenomenon.

The role of cognitive biases such as shared beliefs and values links the theory of truth default bias to the confirmation bias, which shapes people's default stance on truthfulness (Nickerson, 1998). As political views combine many of the previously stated factors that influence the strength of the bias, it is a driving force behind the confirmation bias and the inability to identify misinformation. Confirmation bias leads to a polarisation of information sources, where individuals are more likely to trust information that aligns with their beliefs and avoid information that challenges them (Nickerson, 1998). This underlines Levine's (2014) findings that people generally want to believe the information presented to them rather than question every expression. As a result, people's confirmation bias can reinforce their default stance on trustfulness, even when that stance is not based on accurate information or evidence. This presumption of honesty creates vulnerabilities to deceit and reduces the ability of a person to suspect and identify misinformation (Levine, 2014).

The second presumption of the partisan bias, that members of the supporting party are more similar to each other than dissimilar, is a premise of the social identity theory (Tajfel et al., 1979). This theory emphasises that there is a psychological attachment of individuals to a social group, who derive parts of their self-identity from that social group they belong to. In previous studies such effects have been found in various groups, such as members of a political party, race or nationality (Greene, 2004; Huddy, 2001). This group identification influences the perception of information by causing people to interpret information through the lenses of their group membership. Members will generally favour information coming from members of their own group over that of the other groups, and will thereby more easily believe information coming from in-group members and disbelieve out-of-group members (Huddy, 2001). The link from social identity theory to partisan bias occurs because political parties are a means of strong personal identification in which a sense of self is tied up in the party's success, and any threat to the favoured party's success is seen as a threat to their personal identity. This attachment to a party not only influences the perception of information but shapes views whereby it introduces a bias to viewing their group positively and other groups negatively.

2.2 Partisan Economics

As a bridge of the gap to economic presumptions, the truth-default theory and the confirmation bias indicate that comments regarding the state of the economy and future economic policy are more likely to be believed and supported by members of the affiliated political party. In the context of economic presumptions, the social identity theory assumes that members of the same supporting party share similar economic plans and visions and that they would support those visions. The partisan theory underlines that argument by stating that different political parties pursue other objectives with regard to macroeconomic policies (Hibbs, 1977; Swank, 1993). The objectives each party pursues are thereby strongly dependent on the interests and preferences of their voters. To derive the preferred economic policy of the Democratic and Republican parties in the US, it is necessary to evaluate the needs of the party's voter base.

Hibbs (1977) has argued that the core voter base of a left-wing party consists of low-and middle-income groups, whereas the core of a right-wing party consists of more high-income groups. These groups have different preferences in the trade-off between inflation and unemployment, and prefer different positions on the Phillips curve. Lower-income groups are better off when economic conditions favour low unemployment and are, in turn, willing to accept higher inflation rates in the process. In contrast, upper-income and more wealthy groups prefer macroeconomic conditions to favour a low-inflation environment and comparatively high unemployment. Parts of this difference in preference is explained by the difference in capital structure. The dislike of unemployment of left-wing supporters is routed in the large allocation of their wealth to human capital, which is less likely to be diminished by inflation. Supporters of right leaning parties, however, hold more significant portions of their wealth in financial and residential capital, where inflation creates uncertainty about returns and can be a destructive force (Hibbs, 1987). These assumptions support the hypothesis that left-wing parties are more concerned with reducing unemployment than with declining inflation. In contrast, right-wing parties are more averse to inflation than to unemployment.

This left-right dynamic appears to be still influencing voter decisions today. Carlsen (2000) found that voters in the US are more likely to vote for left-wing parties when unemployment is high, regardless of whether the ruling party was Democratic or Republican at the time of the election. These findings are consistent with Whitten & Palmer (1999), who found that voters expect left-wing parties to deal better with high unemployment and right-wing parties to better address high inflation.

In addition to the inflation/unemployment trade-off of the Phillips curve, fiscal policy and the spending behaviour of governments of left- and right-wing parties also influence voter preference. The conventional view is that left-wing governments tend to pursue their political goals of low unemployment through more excessive spending and therefore accumulate a higher fiscal deficit. Right-wing parties, however, follow a more prudent fiscal policy in their pursuit to keep inflation under tighter control (Cowart, 1978). However, this tendency has been sharply reduced in recent decades, whereby historically lower inflation and other macroeconomic developments have generally reduced the importance of the assumptions of the conventional view (Cusack, 1999).

2.3 Partisan Bias in Economic Expectations

The study of partisan bias in economic perceptions has been an active area of research in political science and economics for over two decades. In a growing body of literature it has been suggested that political affiliation may play a significant role in shaping economic expectations and perceptions, including inflation expectations. Early research has been focused on the partisan bias in the US, whereby more recent studies have found a similar tendency in Europe and Asia as well.

Duch et al., (2000) were among the first to explore the partisan bias in economic perceptions, while assessing the heterogeneity of perception of economic conditions in general. Bartels (2002) expanded on this evidence and found that Democrats in the United States were more likely to perceive the economy as worse off than Republicans during the reigns of the Republican president Ronald Reagan. They thereby argued that the partisan bias in economic perceptions might reflect differences in socioeconomic status between Democrats and Republicans. Gerber & Huber (2010) went on to prove that the effect of different perceptions of economic conditions was not static but changed after a shift in the ruling

party after an election. They came to their conclusion after conducting a survey about the perception of economic conditions before and after elections in the US.

Benhabib & Spiegel (2019) found evidence of partisan bias by combining economic sentiment from participants in the University of Michigan Survey of Consumers and aggregating the results on a state level. They found that the economic sentiment was more optimistic in states with a higher share of congressmen from the political party of the sitting President. This approach is comparable to the one applied by Bachmann et al. (2019), where data was used from the Federal Reserve Survey of Consumer Expectations for inflation expectations and past election results from the participants' residing states to find evidence of the partisan bias in inflation expectations. They found that inflation expectations were 0.46% higher in states which historically voted Republican compared to Democratic-dominated US states throughout the presidency of Barack Obama. On the other hand, under the presidency of Donald Trump, inflation expectations in Republican-dominated states declined by 0.75%. Gillitzer et al. (2021) found similar results for the period from 2008 to 2016 when analysing data from the Michigan University Survey of Consumers in election years. Gillitzer et al. (2021) and Gerber & Huber (2010) both used a more nuanced distinction of political affiliation to evaluate differences between the strength of a person's political affiliation and their economic expectations. Gillitzer et al. (2021) found that the bias in inflation expectations in the years 2008 and 2016 was higher for survey participants with a stronger political affiliation compared to those who had a weaker affiliation to one of the parties. Gerber & Huber (2010) found a higher bias in the general economic perception of survey participants when their political affiliation was strong. These results do, however, not include the effect on inflation expectations.

Comparable results of partisan bias in economic perceptions can also be found elsewhere. Evans and Andersen (2006) used survey data to examine the impact of partisan cues on expectations about the general national economic performance in the United Kingdom. They found that partisanship had a significant effect on the expected future economic performance, with supporters of the incumbent government having more positive expectations compared to opposing voters. These findings are further supported by the work of Ladner & Wlezien (2007), who found that the economic expectations of supporting voters are more realistic compared to the economic expectations of opposing voters.

While the studies from the United Kingdom were focused on the partisan bias in general economic projections, Gillitzer et al. (2021) has also provided evidence of the partisan bias in inflation expectations in Australia by analysing survey data over a time frame of over 20 years and finding that inflation expectations of supporters of the ruling party were consistently lower when their party was the ruling party, and vice versa. The same effects of partisan bias in inflation expectations have also been observed in South Korea, where Okolikj & Hooghe (2022) studied the effect of political partisanship on inflation expectations.

In some research evidence for an increasing partisan bias in economic projections was found (Brady et al., 2022; Jones, 2020; Mian et al., 2021). Bardy et al. (2022) studied the effect of partisan bias on the economic perception of survey participants and found that the effect approximately doubled between 1999 and 2020. Mian et al. (2021) found a similar tendency in their work. Jones (2020) used data from the American National Election Studies to evaluate the changing relationship between partisanship, political awareness and retrospective evaluations. The author found that the magnitude of partisan perceptual differences has increased substantially since the 1980s and that this influences various types of evaluations, such as one's own financial situation, sociographic evaluations of the country's economy and judgement of foreign affairs. They further found that voter awareness increased the effect of partisan differences, as the most engaged citizens are most likely to internalise cues about the state of the world and their party's leaders. Lastly, Jones (2020) also found that an increase in political polarisation led by more extreme positions has also nurtured an increase in partisan differences over recent years.

2.4 Research Gap

Although a growing number of more recent research studies have been concerned with the partisan bias in inflation expectations, the influence of the strength of the political affiliation has so far mostly been neglected, where Gillitzer et al., (2021), Jones (2020) and (Gerber & Huber, 2010) are the exceptions. Additionally, the presumed development of the magnitude of the partisan bias, as discussed by Bardy et al. (2022) and Jones (2020), has not been captured in inflation expectations. In previous research the possible shift has been ignored in partisan bias based on not only a change in the presidency but changes in the majority distribution in the House of Representatives and the Senate as well.

3 Data

The analysis of this thesis is based on data from the University of Michigan's Survey of Consumers, which is a well-recognized survey that has been conducted by the University of Michigan's Institute for Social Research since 1946. The survey collects data on consumer attitudes and expectations regarding the U.S. economy, personal finances, and purchasing decisions. It is conducted monthly and is based on a nationally representative sample of households (University of Michigan, 2023). The survey provides important information about changes in consumer sentiment over time and is widely used by policymakers, academics, and businesses to understand consumer behaviour and economic trends. The survey consists of around 50 core questions which are categorised into questions about personal finance, savings and retirement, economic conditions, unemployment & inflation expectations and buying conditions for houses and vehicles. The survey also collects personal information about the survey respondents, such as place of residence, gender, age, or political affiliation, which are leveraged in this thesis.

3.1 Time Frame

The publicly available dataset, which includes the individual responses from survey participants, covers a period of over 40 years, from 1980 onwards. However, the political affiliation of survey participants has only been recorded in all surveys conducted since the year 2014, as well as in the years 2012, 2010, 2009, 2008, 2006, 1985, 1984 and 1980. This leads to there being 17 potential periods in which the inflation expectation and the political affiliation of the participants can be combined to evaluate the bias on the expected inflation.

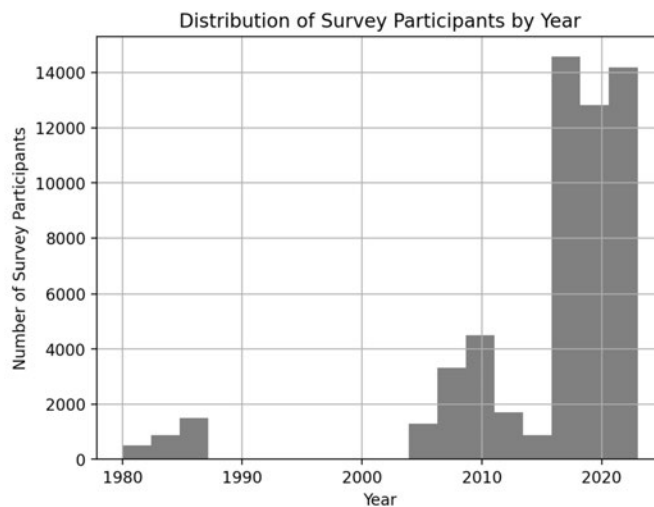


Figure 1: Number of total survey participants per year

Since there is a large gap in the available data between 1986 and 2005, where the political affiliation has not been recorded, the analysis was focused on data from 2006 onwards. The distribution of the number of survey respondents in Figure 1 reveals that the number of survey participants has increased significantly from 2014 onwards.

To accurately capture the partisan bias and the change in inflation expectations whenever the political environment changes, the periods of the performed regression analysis needed to match the duration of the legislative period in the US. The analysis, therefore, consisted of 10 two-year periods, whereby due to the lack of data, only data from one year was used for the periods 2005-2006, 2007-2008 and 2023-2024. The data for the period 2023-2024 included survey data up to March 31, 2023.

Period	Presidency	House Majority	Senate Majority
2005-2006	Republican	Republican	Republican
2007-2008	Republican	Democrat	Democrat
2009-2010	Democrat	Democrat	Democrat
2011-2012	Democrat	Republican	Democrat
2013-2014	Democrat	Republican	Democrat
2015-2016	Democrat	Republican	Republican
2017-2018	Republican	Republican	Republican
2019-2020	Republican	Democrat	Republican
2021-2022	Democrat	Democrat	Democrat
2023-2024	Democrat	Republican	Democrat

Table 1: Legislative periods and majority distribution

This timeframe provides a comprehensive dataset that covers a wide range of economic and political events, including presidential elections, changes in economic policy, and fluctuations in financial markets. In Table 1 the majority distribution of the legislative periods included in the analysis is shown. The focus on the legislative periods of two years allowed for a more nuanced analysis of the political bias in inflation expectations, as shifts in the expected inflation can not only be linked to the party affiliation of presidents but also to the majority distribution between both legislative chambers as well.

3.2 Political Affiliation

In the Michigan Survey of Consumers, the political affiliation of survey participants is evaluated through a variety of questions in order to determine the overall political affiliation with either of the two major political parties, as well as to determine the strength of that affiliation. The evaluation of political affiliation is made by asking three questions:

1. *Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?*
 - a. *Republican*
 - b. *Democrat*
 - c. *Independent, No Preference*
 - d. *DK*
 - e. *NA*
2. *Would you call yourself a strong Republican/Democrat or a not so strong Republican/Democrat?*
 - a. *Strong*
 - b. *Not Strong*
 - c. *DK*
 - d. *NA*
3. *Do you think of yourself as closer to the Republican Party or to the Democratic Party?*
 - a. *Closer to Republican*
 - b. *Closer to Democrats*
 - c. *Neither*
 - d. *DK*
 - e. *NA*

The answers to the questions above allow for the categorisation of participants' political affiliations into five groups: Strong Republicans, Strong Democrats, Republican, Democrats, and Independents. The categorisation is thereby done as shown in Table 2.

Political affiliation	Answers in Questionnaire
Strong Republican	Q1: <i>Republican</i> & Q2: <i>Strong</i>
Strong Democrat	Q1: <i>Democrat</i> & Q2: <i>Strong</i>
Republican	Q1: <i>Republican</i> & Q2: <i>Not Strong</i> Q3: <i>Closer to Republicans</i>
Democrat	Q1: <i>Democrat</i> & Q2: <i>Not Strong</i> Q3: <i>Closer to Democrats</i>
Independent	Q1: <i>Independent / No Preference</i> Q1: <i>DK</i> & Q3: <i>Neither</i> Q1: <i>DK</i> & Q3: <i>DK</i>

Table 2: Deliniation of political affiliation into categories

The categorisation in Table 2 shows that the distinction between leaning Republicans and Republicans, as well as leaning Democrats and Democrats, is not translated into the categorisation of the analysis. This is mainly due to the vague differentiation between a leaning Republican/Democrat and a Republican/Democrat. Additionally, the subscription of leaning Republicans/Democrats to their main categories creates a more even distribution of the number of survey participants of each group, as is shown in Figure 2.

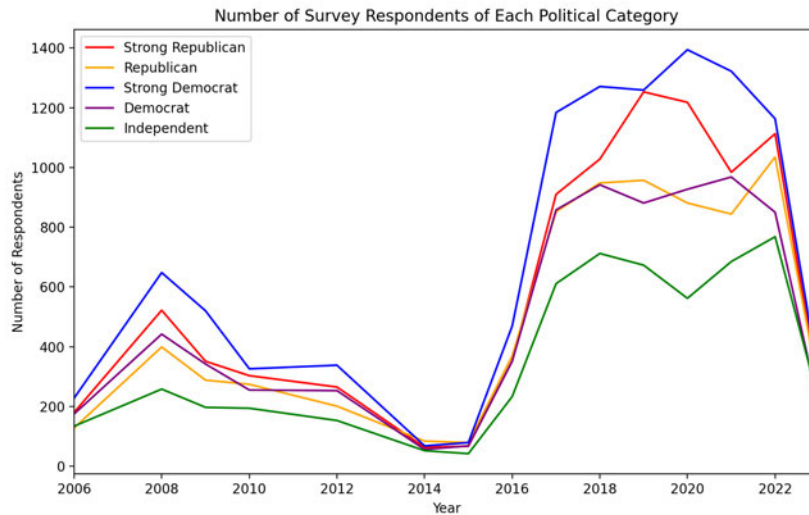


Figure 2: Number of survey respondents in each political category

The category of independent participants consists of those respondents who identify as independents, as well as those who do not have a clear political identification. This slightly wider definition of independents again leads to a slightly more even distribution of the number of survey participants of each group. Those participants who did not wish to communicate their political affiliation (Q1: NA, Q3: NA) are not categorised and were therefore not considered for further analysis.

3.3 Inflation Expectations

The University of Michigan Survey of Consumers involves an evaluation of the respondent's inflation expectation via a point estimation for the percentage by which they expect prices in general to increase/decrease over the next 12 months. Expectations for inflation/deflation of more than 95% for the year ahead are deleted from the dataset.

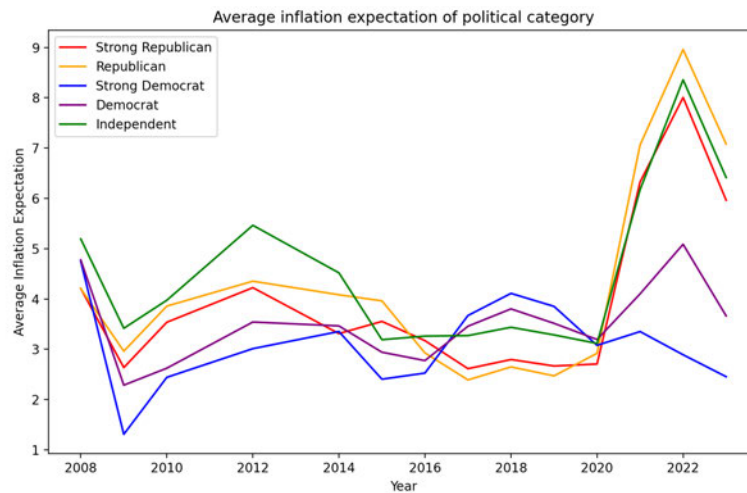


Figure 3: Average inflation expectation of political category

The average inflation expectation of each political category shown in Figure 3 indicates that the inflation expectations varied over the analysed time frame and that the relative inflation expectation of the categories does not appear to be constant.

The wording of the question in the Michigan University Survey of Consumers, which is used to ask participants about future “prices in general”, raises questions about the degree to which participants will state their expected inflation expectation or will answer based on personal experiences and expectations with specific prices (Bruine de Bruin, Vanderklaauw, et al., 2010; Savignac et al., 2021). The wording of the question often leads to overall higher median estimates in inflation expectations compared to different types of questions, such as asking about inflation directly (Savignac et al., 2021). Bruine de Bruin et al., (2010), has found that results obtained from asking participants about “prices in general” are in line with results attained when participants are asked to state their expectations about the “prices they pay”. This led to the assumption that participants will answer the question about “prices in general” based on personal experiences and expectations about prices that they pay instead of the overall inflation rate. Besides finding an overall higher median inflation expectation when asking participants about “prices in general”, there is a wider dispersion in reported inflation expectations compared to the results obtained when asking participants about the “expected rate of inflation” (Bruine de Bruin, Vanderklaauw, et al., 2010). Since the analysis of partisan bias in inflation expectations is mainly concerned with the comparison of inflation expectations between Republican and Democratic voters, the tendency to overestimate the future inflation should not distort the results significantly. The wider dispersion of expected inflation, however, does have the tendency to slightly distort the results.

3.4 Descriptive Statistics

Variable	Strong Republican	Republican	Strong Democrat	Democrat	Independent
Education College	44.69%	45.91%	62.45%	53.57%	41.93%
Education High School	52.68%	50.91%	34.55%	43.23%	51.21%
Education No Diploma	2.63%	3.18%	3.00%	3.20%	6.85%
Female	35.99%	28.12%	51.86%	39.94%	35.04%
Male	64.01%	71.88%	48.14%	60.06%	64.96%
Married	73.71%	68.05%	62.23%	57.73%	59.51%
Divorced	11.29%	12.23%	14.03%	13.88%	15.31%
Widowed	7.40%	5.66%	6.79%	4.56%	4.89%
Never Married	7.59%	14.07%	16.95%	23.82%	20.29%
North Central	26.57%	26.70%	25.26%	25.07%	24.73%
Northeast	11.66%	13.73%	18.58%	17.72%	15.22%
South	41.57%	37.61%	32.39%	31.49%	35.11%
West	20.19%	21.97%	23.78%	25.72%	24.93%
Age below 30	6.12%	12.40%	9.50%	18.35%	15.70%
Age 30 - 44	16.22%	23.37%	19.43%	26.63%	31.32%
Age 45 - 59	30.55%	29.12%	27.05%	25.38%	27.11%
Age over 60	47.11%	35.11%	44.02%	29.64%	25.87%
Income bottom 25%	14.20%	15.46%	18.27%	21.54%	27.20%
Income 25%-50%	24.03%	25.00%	22.37%	25.22%	24.86%
Income 51%-75%	29.87%	28.80%	27.85%	25.31%	25.85%
Income top 25%	31.90%	30.74%	31.52%	27.93%	22.09%
2006	2.01%	1.67%	2.14%	2.29%	2.41%
2008	5.84%	5.20%	6.08%	5.77%	4.64%
2009	3.92%	3.75%	4.88%	4.47%	3.54%
2010	3.39%	3.57%	3.06%	3.33%	3.49%
2012	2.96%	2.62%	3.17%	3.30%	2.75%
2014	2.01%	1.67%	2.14%	2.29%	2.41%
2015	0.75%	1.03%	0.74%	0.89%	0.76%
2016	3.94%	4.81%	4.40%	4.58%	4.19%
2017	10.18%	11.11%	11.11%	11.21%	10.99%
2018	11.50%	12.36%	11.93%	12.30%	12.81%
2019	14.01%	12.48%	11.81%	11.51%	12.11%
2020	13.62%	11.48%	13.08%	12.11%	10.11%
2021	11.00%	11.00%	12.40%	12.64%	12.32%
2022	12.45%	13.49%	10.91%	11.10%	13.82%
2023	1.02%	0.96%	1.07%	0.65%	1.33%
Observations	8,943	7,671	10,658	7,656	5,559

Table 3: Descriptive statistics of the dataset

The descriptive statistics of the dataset largely reflect known differences in voter characteristics between voters of the Democratic and the Republican party. Particularly, the well documented difference in the level of education between supporters of the Democratic and the Republican party are visible in the voter characteristics (Weiner & Eckland, 1979). The differentiation between the strong supporters and the not so strong supporters of a political party increases this effect, with strong Democrats having an even higher level of education compared to Democrats.

The gender gap between Democrats and Republicans, where Republican supporters are predominately men and Democrats are predominately women, is also clearly visible in the data (Center for American Women and Politics, 2023). However, a larger portion of women identify as strong Republicans compared to Republicans, whereas the original tendency does hold for strong Democrats, where the proportion of women increases for strong supporters.

The age differences between the categories of party affiliation appears to support a slight tendency of a shift towards conservatism as people age (Peterson et al., 2020). However, the distribution also shows a shift towards a more pronounced political affiliation, with a larger percentage of older participants showing a stronger affiliation to either party.

As discussed in section 2.2, in the concept of partisan economics it is argued that the core voter base of a left-wing party consists of low-and middle-income groups, whereas the core of a right-wing party consists of more high-income groups. This tendency can be partially observed in the data for the two groups of Republican and Democrats, whereby a larger percentage of Democratic supporters are within the lower income categories and a larger percentage of Republican supporters are within the higher income categories. However, this tendency is not as clear in the two categories of strong political affiliation. Although the percentage of strong Democrats in the lowest income category is considerably higher compared to strong Republicans, the share of supporters within the highest income category is comparable to the one observed for the strong Republican category. This tendency might be explained by the strong correlation between higher income and a higher level of education which, as previously stated, is higher among strong Democrats and Democrats compared to Republicans. In general, however, the distribution of income

categories between the party affiliation categories is largely in agreement with the tendential differences between Republican and Democratic supporters described in section 2.2.

4 Methods and Procedure

4.1 OLS-Model

The main part of the analysis consisted of an ordinary least square regression, which was used to evaluate the effect of partisanship on inflation expectations. The individual inflation expectations were therefore regressed on dummy variables for strong Republican, Republican, strong Democrat and Democrat associations. The OLS regression was performed separately for each two-year period between a presidential election and midterm election, as described in section 3.1. The used OLS regression equation is shown in equation (1).

$$y_i = \beta_0 + \beta_1 * strong\ Republican_i + \beta_2 * Republican_i + \beta_3 * strong\ Democrat_i + \beta_4 * Democrat_i + X_i\psi + \zeta_t + \varepsilon_i \quad (1)$$

y_i represents the one-year ahead inflation expectations of survey respondents, $\beta_{1...4}$ indicates the influence of partisanship if the survey respondent identifies with either of the political categories strong Republican, Republican, strong Democrat, Democrat, leading to a dummy variable equal to one for the respective categories. Survey respondents who identified as independent, as described in section 3.2, served as the reference category for the political categories. X_i describes a vector of individual characteristics of the survey participant with corresponding parameters ψ . ζ_t describes fixed effects for two-year periods in which the data was available for more than one year with 2009 being the reference category for the period 2009 – 2010, 2015 for the period 2015 – 2016, 2017 for the period 2017 – 2018, 2019 for the period 2019 – 2020 and 2021 for the period 2021 – 2022.

4.1.1 Covariates selection

The Michigan University Survey of Consumers is used to collect a wide variety of information from survey participants, which were used as covariates in the regression analysis. Bruine de Bruin et al., (2010), have observed that gender, age, level of education, income and marital status have a significant influence on an individual’s inflation expectation, whereby the categories of females, lower income, lower education and no partnership all had a positive impact on the expected inflation. Since all these characteristics are determined as part of the survey, they were included in the OLS regression.

The influence of an individual’s age is, however, somewhat unclear, as Bruine de Bruin, et al., (2010) found that increasing age leads to higher inflation expectations whereas Bryan & Venkatu (2001) found in their analysis of the data from the University of Michigan Survey of Consumers that participants of the youngest age category had significantly higher inflation expectations. Besides this inconclusiveness, both found their results to be significant, which is why age as a categorial covariate was included in the OLS regression.

Bachmann et al. (2019 & 2021) have used the residency of individuals to derive their political affiliation, which indicates that there is a strong correlation between the place of residency and the political affiliation. However, the place of residency in the Michigan University Survey of Consumers is not collected on a state basis, as was the case for the data used by Bachmann et al. (2019 & 2021), but prescribes respondents residence to regions in a wider sense: North Central, Northeast, South and West.

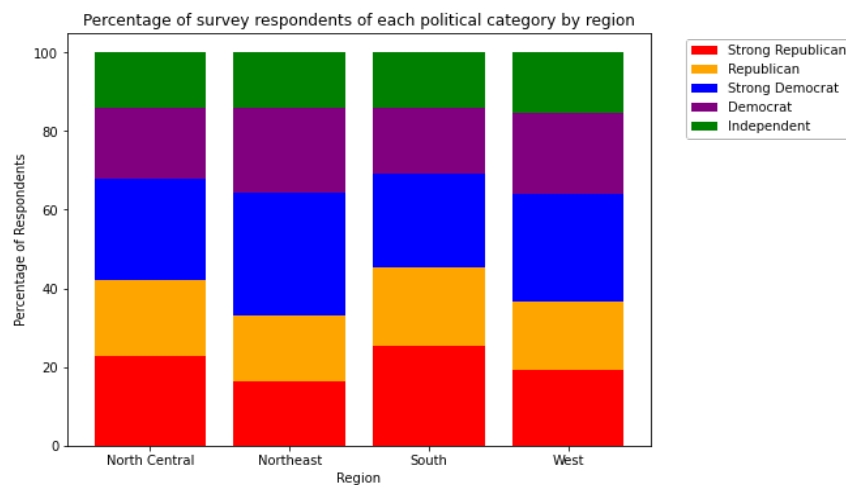


Figure 4: Percentage of survey respondents of each political category by region

The summary statistics in section 3.4, and the graphical representation in Figure 4, show that there are only minor differences in the distribution of respondents and their political affiliation with the Northeast having a slightly higher percentage of Democrats and strong Democrats, and the South having a slightly higher percentage of Republican and Strong Republican. The regional categories were therefore included in the OLS regression, following Gillitzer et al. (2021) in their approach with data from the Michigan University Survey of Consumers.

This led to the following covariates being included in the OLS regression with the corresponding base categories.

Characteristic	Covariates	Base Category
Political affiliation	Strong Republican Republican Strong Democrat Democrat	Independent
Education	No diploma College education	High School education
Marital status	Divorced Widowed Never married	Married
Gender	Female	Male
Income	Bottom 25% 51 - 75% Top 25%	25 – 50%
Age	Age below 30 Age 45 – 59 Age over 60	Age 30 – 45
Region	North Central South West	Northeast

Table 4: Covariates included in the OLS regression

4.2 Blinder-Oaxaca Decomposition

The Blinder-Oaxaca decomposition is a popular method for explaining the sources of differences in outcomes between two groups. The decomposition method is widely used in economics and social sciences to study inequality, discrimination, and other related issues. It has previously been used to study the effect of partisan bias in inflation expectations by Bachmann et al., (2019 & 2021) and Choi et al., (2022).

The decomposition method was first used to explain wage gaps between men and women in the United States, where Blinder and Oaxaca decomposed the total wage gap into two components. One part which could be explained by differences in observable characteristics, such as education, work experience etc., and the other part that could not be explained by any of these factors, i.e. the unexplained part of the wage gap (Blinder, 1973; Oaxaca, 1973). In the context of partisan bias in inflation expectations, the Blinder-Oaxaca decomposition can help to explain the differences in inflation expectations between the political groups by showing whether the political affiliation has an independent effect on inflation expectations or whether it is entirely driven by other observable characteristics such as age, gender, level of education, income, etc. The Blinder-Oaxaca decomposition was used to build on the OLS model by providing an estimate of a regression model of inflation expectations on the observable characteristics for both overall Democrats and Republicans, as well as for strong Republicans and strong Democrats separately. Hereby, the overall model decomposed the group of strong Republicans & Republicans and the group of strong Democrats & Democrats, whereas the decomposition of strong party affiliates only included data from strong Republicans and strong Democrats. The decomposition was applied to disentangle the difference in mean inflation expectations between the two groups. The explained part can be derived from the differences in observable characteristics and the unexplained part of the total difference, which cannot be explained by these characteristics and is therefore only explainable by the partisan bias. The equations 2.1 to 2.3 show the decomposition for the group of overall Republicans and Democrats.

$$\Delta\bar{Y} = \bar{Y}_{strong\ Dem\ Dem} - \bar{Y}_{strong\ Rep\ Rep} \quad (2.1)$$

$$\begin{aligned} &= \hat{\beta}_{strong\ Dem\ Dem} \bar{X}_{strong\ Rep\ Rep} - \hat{\beta}_{strong\ Rep\ Rep} \bar{X}_{strong\ Rep\ Rep} \\ &= \hat{\beta}_{strong\ Dem\ Dem} \bar{X}_{strong\ Dem\ Dem} + \widehat{\beta}^* \bar{X}_{strong\ Dem\ Dem} - \widehat{\beta}^* \bar{X}_{strong\ Dem\ Dem} - \hat{\beta}_{strong\ Rep\ Rep} \bar{X}_{strong\ Rep\ Rep} \\ &\quad + \widehat{\beta}^* \bar{X}_{strong\ Rep\ Rep} - \widehat{\beta}^* \bar{X}_{strong\ Rep\ Rep} \end{aligned} \quad (2.2)$$

$$= \underbrace{\widehat{\beta}^* (X_{strong\ Dem\ Dem} - X_{strong\ Rep\ Rep})}_{Explained\ difference} + \underbrace{(\hat{\beta}_{strong\ Dem\ Dem} - \widehat{\beta}^*) X_{strong\ Dem\ Dem} + (\widehat{\beta}^* - \hat{\beta}_{strong\ Rep\ Rep}) \bar{X}_{strong\ Rep\ Rep}}_{Unexplained\ difference} \quad (2.3)$$

Equation (2.1) describes the difference in the average characteristics between participants who identify as either Democrats or Republicans, with $\bar{Y}_{strong\ Dem|Dem}$ and $\bar{Y}_{strong\ Rep|Rep}$ representing the average inflation expectation of survey participants and vectors $\bar{X}_{strong\ Dem|Dem}$ and $\bar{X}_{strong\ Rep|Rep}$ contain the means of the independent variables of the two political groups. Vectors $\hat{\beta}_{strong\ Dem|Dem}$ and $\hat{\beta}_{strong\ Rep|Rep}$ represent the estimates from the regression of survey participants who identify as either overall Democrats or Republican. In equation (2.1), $\Delta\bar{Y}$ describes the total difference between the two groups of Democrats and Republicans. $\Delta\bar{Y}$ would equal zero if there was no difference in the mean inflation expectations between the two groups. For the case of, $\Delta\bar{Y} \neq 0$, equation (2.3) shows the decomposed difference between the inflation expectations of the two groups.

The first part of the equation (2.3) describes the difference in average characteristics between survey respondents who either identify as Republicans or as Democrats. $\widehat{\beta}^*$ hereby represents the coefficient from the combined model without the separation of participants into the two groups, Democrats and Republicans. If the survey respondents from both Republicans and Democrats had identical characteristics, other than their political affiliation, the first part of the equation (2.3) would equal zero as none of the difference in mean inflation expectation would be due to differences in these characteristics. Since the differences arising from the alterations in characteristics are explainable, the first part of equation (2.3) represents the explained portion of the total difference $\Delta\bar{Y}$.

The part of the difference $\Delta\bar{Y}$ which is not captured by the difference in characteristics between Republicans and Democrats is described by the second part of equation (2.3). While the average age, level of education or income etc. of respondents identifying as Republicans or Democrats may be similar, their inflation expectations may vary signifi-

cantly. If this is the case, i.e., $\hat{\beta}_{strong\ Dem|Dem} \neq \hat{\beta}_{strong\ Rep|Rep} \neq \hat{\beta}^*$, the difference in average inflation expectation is not explained by differences in characteristics but by the difference in political affiliation.

Since the decomposition can only decompose two categories, Republican and Democrats, the Blinder-Oaxaca decomposition was again performed using the two categories strong Republicans and strong Democrats to disentangle the differences between only the two political categories with more pronounced affiliation. Equations (3.1), (3.2) and (3.2) show the decomposition for the groups of strong political affiliation.

$$\begin{aligned} \Delta\bar{Y} &= \bar{Y}_{Strong_Dem} - \bar{Y}_{Strong_Rep} = \hat{\beta}_{Strong_Dem}\bar{X}_{Strong_Dem} - \hat{\beta}_{Strong_Rep}\bar{X}_{Strong_Rep} & (3.1) \\ &= \hat{\beta}_{Strong_Dem}\bar{X}_{Strong_Dem} + \hat{\beta}^*\bar{X}_{Strong_Dem} - \hat{\beta}^*\bar{X}_{Strong_Dem} - \hat{\beta}_{Strong_Rep}\bar{X}_{Strong_Rep} + \hat{\beta}^*\bar{X}_{Strong_Rep} - \hat{\beta}^*\bar{X}_{Strong_Rep} & (3.2) \\ &= \underbrace{\hat{\beta}^*(\bar{X}_{Strong_Dem} - \bar{X}_{Strong_Rep})}_{Explained\ difference} + \underbrace{(\hat{\beta}_{Strong_Dem} - \hat{\beta}^*)\bar{X}_{Strong_Dem} + (\hat{\beta}^* - \hat{\beta}_{Strong_Rep})\bar{X}_{Strong_Rep}}_{Unexplained\ difference} & (3.3) \end{aligned}$$

To evaluate the statistical significance of the results of the Blinder-Oaxaca decomposition, bootstrapped standard errors with 500 iterations were created for both models.

4.3 Modified Decomposition

As described above, the unexplained difference of the Blinder-Oaxaca decomposition quantifies the part of the differences in inflation expectations between Republicans and Democrats, which are not explained by respondents' personal characteristics, and therefore it quantifies the partisan bias in inflation expectations.

In periods where the partisan theory holds, the formula of the unexplained difference, described in formulas (2.3) and (3.3), will yield a positive value for when Democrats expect higher inflation during a Republican presidency and a negative value for when Republicans expect higher inflation during the presidency of a Democrat, as described by condition (4.1) and (4.2).

$$unexplained\ difference_{Republican\ presidency} > 0 \quad (4.1)$$

$$unexplained\ difference_{Democratic\ presidency} < 0 \quad (4.2)$$

To analyse the bias in inflation expectations over time, the values from the Blinder-Oaxaca decomposition need to be unified so that the value of the modified unexplained difference reflects the amount of bias regardless of the political majority distribution. Whenever the partisan theory holds, i.e., conditions (4.1) and (4.2) are met, the modified unexplained difference reflects the absolute values of the unexplained differences of both decomposition models.

$$\text{modified unexplained difference} = \text{abs}((\hat{\beta}_{\text{strong Dem Dem}} - \widehat{\beta}^*)X_{\text{strong Dem Dem}} + (\widehat{\beta}^* - \hat{\beta}_{\text{strong Rep Rep}})X_{\text{strong Rep Rep}}) \quad (5.1)$$

$$\text{modified unexplained difference} = \text{abs}((\hat{\beta}_{\text{strong Dem}} - \widehat{\beta}^*)X_{\text{strong Dem}} + (\widehat{\beta}^* - \hat{\beta}_{\text{strong Rep}})X_{\text{strong Rep}}) \quad (5.2)$$

In periods where the partisan theory is broken, the sign of the modified unexplained difference needs to be negative to accurately reflect the negative bias.

$$\text{modified unexplained difference} = \text{unexplained difference} \quad (5.3)$$

$$\text{if } \text{unexplained difference}_{\text{Republican presidency}} < 0$$

$$\text{modified unexplained difference} = \text{unexplained difference} * (-1) \quad (5.4)$$

$$\text{if } \text{unexplained difference}_{\text{Democrat presidency}} > 0$$

The measure of unexplained difference between either Republicans and Democrats or strong Republicans and strong Democrats can be influenced by changes in the general level of inflation expectations. Assuming that there is a constant bias in inflation expectations, the modified unexplained difference as a measure of absolute percentage points will be higher in times of generally higher inflation expectations and lower in times of generally lower inflation expectations. To disentangle the effects of changes in the overall level of inflation expectations, the modified unexplained difference from both decomposition models, described in equations (5.1) and (5.2) was divided by the constant coefficient of each regression model of the same period.

$$\text{modified unexplained difference in \% of constant} = \frac{\text{abs}((\hat{\beta}_{\text{strong Dem Dem}} - \widehat{\beta}^*)X_{\text{strong Dem Dem}} + (\widehat{\beta}^* - \hat{\beta}_{\text{strong Rep Rep}})X_{\text{strong Rep Rep}})_t}{\text{constant}_t} * 100 \quad (6.1)$$

$$\text{modified unexplained difference in \% of constant} = \frac{\text{abs}((\hat{\beta}_{\text{strong Dem}} - \widehat{\beta}^*)X_{\text{strong Dem}} + (\widehat{\beta}^* - \hat{\beta}_{\text{strong Rep}})X_{\text{strong Rep}})_t}{\text{constant}_t} * 100 \quad (6.2)$$

The modified unexplained difference in relation to the constant regression coefficient, described in equation (6.1) and (6.2), expresses the bias in inflation expectations between the two political groups as a measure of mean inflation expectations of the reference category. A value of 100% would, therefore, suggest that the bias in inflation expectations between Republican and Democrats or between strong Republicans and strong Democrats is equal to the mean inflation expectation of the independent survey respondents.

5 Results

The results are split into two sections. The first section is dedicated to the individual results, whereby table 5 shows the results of the regression and table 6 for the Blinder-Oaxaca decomposition. Both result tables show the results for each model, covering a legislative period of two years. The second part of the results section is focused on the combined results of the models and the development of the partisan bias over time.

5.1 Regression Results

	2005-2006	2007-2008	2009-2010	2011-2012	2013-2014	2015-2016	2017-2018	2019-2020	2021-2022	2023-2024
Constant	3.997*** (0.370)	4.754*** (0.424)	2.977*** (0.324)	4.299*** (0.426)	4.347*** (0.668)	3.376*** (0.282)	2.949*** (0.123)	3.126*** (0.143)	6.173*** (0.281)	6.431*** (0.880)
Republican	-0.071 (0.334)	-0.367 (0.335)	0.503** (0.252)	0.018 (0.332)	0.301 (0.425)	0.042 (0.176)	-0.564*** (0.088)	-0.384*** (0.104)	1.656*** (0.201)	2.262*** (0.645)
Strong Republican	-0.909*** (0.293)	-0.968*** (0.304)	0.702*** (0.240)	-0.111 (0.301)	-0.580 (0.470)	0.393** (0.182)	-0.979*** (0.087)	-0.947*** (0.097)	2.170*** (0.198)	3.374*** (0.655)
Democrat	0.573* (0.295)	0.146 (0.322)	-0.487** (0.246)	-0.860*** (0.304)	-0.079 (0.496)	-0.345* (0.181)	0.491*** (0.087)	0.268** (0.104)	-1.745*** (0.203)	-1.489** (0.708)
Strong Democrat	0.039 (0.269)	0.004 (0.283)	-1.187*** (0.219)	-1.620*** (0.279)	-0.438 (0.466)	-0.556*** (0.166)	0.723*** (0.080)	0.315*** (0.094)	-3.150*** (0.188)	-2.566*** (0.628)
Education no diploma	-0.487 (0.441)	-0.188 (0.506)	0.402 (0.359)	-0.133 (0.520)	-0.757 (0.888)	0.434 (0.337)	0.388** (0.178)	0.366* (0.207)	1.250*** (0.396)	0.5328 (1.073)
Education college	-0.032 (0.216)	-0.291 (0.228)	-0.886*** (0.176)	-0.550** (0.220)	-0.492 (0.330)	-0.522*** (0.129)	-0.256*** (0.062)	-0.355*** (0.072)	-1.029*** (0.142)	-0.8006 (0.487)
Never married	-0.433 (0.315)	-0.026 (0.359)	-0.092 (0.267)	0.271 (0.336)	-0.931* (0.492)	-0.259 (0.192)	-0.092 (0.089)	0.002 (0.107)	-0.422** (0.204)	-0.444 (0.679)
Divorced	-0.681** (0.288)	-0.111 (0.313)	-0.344 (0.243)	-0.556* (0.313)	-0.616 (0.494)	0.205 (0.179)	-0.021 (0.091)	-0.028 (0.105)	-0.122 (0.212)	-0.305 (0.688)
Widowed	-0.205 (0.376)	0.258 (0.401)	-0.490* (0.297)	0.058 (0.366)	-0.221 (0.606)	-0.557* (0.290)	0.142 (0.138)	0.235 (0.159)	-0.193 (0.320)	0.586 (1.082)
Female	0.408** (0.195)	0.662*** (0.211)	0.593*** (0.161)	0.782*** (0.206)	0.641** (0.313)	0.543*** (0.124)	0.452*** (0.060)	0.473*** (0.070)	1.034*** (0.139)	1.667*** (0.461)

Results

Income top 25 %	-0.784*** (0.287)	-0.871*** (0.310)	-0.943*** (0.239)	-1.067*** (0.302)	-0.956** (0.441)	-0.302* (0.171)	-0.438*** (0.082)	-0.506*** (0.095)	-0.677*** (0.190)	-1.552** (0.636)
Income 51% -75%	-0.395 (0.271)	-0.539* (0.291)	0.558** (0.222)	-0.228 (0.280)	-0.288 (0.423)	-0.373** (0.166)	-0.253*** (0.080)	-0.273*** (0.093)	-0.264 (0.183)	-0.348 (0.613)
Income bottom 25	0.633** (0.300)	0.127 (0.337)	0.289 (0.244)	0.344 (0.314)	0.640 (0.463)	0.602*** (0.184)	0.300*** (0.089)	0.229*** (0.105)	0.887*** (0.205)	1.266* (0.661)
Age below 30	0.544 (0.370)	0.293 (0.447)	-0.231 (0.377)	-0.064 (0.469)	-0.711 (0.652)	0.258 (0.218)	0.010 (0.104)	-0.219* (0.122)	-0.676*** (0.240)	-0.341 (0.822)
Age 45 - 59	0.080 (0.253)	0.118 (0.271)	-0.107 (0.215)	0.339 (0.298)	0.427 (0.483)	-0.037 (0.168)	0.255*** (0.081)	0.271*** (0.095)	0.340* (0.186)	-0.245 (0.621)
Age over 60	-0.302 (0.268)	-0.190 (0.287)	0.171 (0.222)	0.204 (0.296)	0.322 (0.467)	-0.037 (0.167)	0.223*** (0.080)	0.337*** (0.090)	-0.123 (0.180)	-0.667 (0.585)
North Central	-0.214 (0.287)	0.069 (0.310)	0.311 (0.235)	-0.052 (0.300)	-0.827* (0.460)	0.197 (0.190)	-0.158* (0.091)	-0.005 (0.109)	-0.319 (0.210)	-1.589** (0.695)
South	-0.178 (0.275)	0.277 (0.296)	0.123 (0.227)	0.250 (0.286)	-0.286 (0.438)	0.157 (0.180)	0.090 (0.087)	-0.016 (0.103)	0.315 (0.198)	-1.081* (0.646)
West	-0.371 (0.303)	-0.292 (0.322)	-0.102 (0.250)	0.265 (0.319)	-0.325 (0.463)	0.280 (0.194)	0.149 (0.092)	0.365*** (0.109)	0.108 (0.211)	-0.417 (0.695)
2010			0.797*** (0.157)							
2016						-0.350** (0.160)				
2018							0.265*** (0.056)			
2020								-0.113* (0.065)		
2022									1.193*** (0.129)	
Observations	1,289	3,319	4,508	1,708	443	2,849	12,165	12,829	12,549	1'637
Note:	* indicates significance at the 10% level ** indicates significance at the 5% level *** indicates significance at the 1% level									

Table 5: Regression results table

5.2 Decomposition Results

	2005-2006	2007-2008	2009-2010	2011-2012	2013-2014	2015-2016	2017-2018	2019-2020	2021-2022	2023-2024
Constant	3.997*** (0.370)	4.754*** (0.424)	2.977*** (0.324)	4.299*** (0.426)	4.347*** (0.668)	3.376*** (0.282)	2.949*** (0.123)	3.126*** (0.143)	6.173*** (0.281)	6.431*** (0.808)
Republican	-0.071 (0.334)	-0.367 (0.335)	0.503** (0.252)	0.018 (0.332)	0.301 (0.425)	0.042 (0.176)	-0.564*** (0.088)	-0.384*** (0.104)	1.656*** (0.201)	2.263 (0.645)
Democrat	0.573* (0.295)	0.146 (0.322)	-0.487** (0.246)	-0.860*** (0.304)	-0.079 (0.496)	-0.345* (0.181)	0.491*** (0.087)	0.268** (0.104)	-1.745*** (0.203)	-1.489 (0.708)
Explained difference	0.107 (0.125)	-0.057 (0.129)	0.162 (0.105)	0.130 (0.111)	-0.187 (0.418)	-0.123* (0.074)	-0.010 (0.033)	0.042 (0.037)	-0.329*** (0.100)	0.336 (0.407)
Unexplained difference	0.826*** (0.274)	0.958*** (0.292)	-1.633*** (0.228)	-1.188*** (0.264)	-0.117 (0.557)	-0.539*** (0.149)	1.448*** (0.078)	0.939*** (0.093)	-4.367*** (0.193)	-5.054*** (0.621)
Total difference	0.934*** (0.245)	0.901*** (0.414)	-1.470*** (0.196)	-1.058*** (0.276)	-0.304 (0.376)	-0.663*** (0.133)	1.439*** (0.068)	0.982*** (0.794)	-4.696*** (0.139)	-4.718*** (0.514)
Strong Republican	-0.909*** (0.293)	-0.968*** (0.304)	0.702*** (0.240)	-0.111 (0.301)	-0.580 (0.470)	0.393** (0.182)	-0.979*** (0.087)	-0.947*** (0.097)	2.170*** (0.198)	3.375*** (0.655)
Strong Democrat	0.039 (0.269)	0.004 (0.283)	-1.187*** (0.219)	-1.620*** (0.279)	-0.438 (0.466)	-0.556*** (0.166)	0.723*** (0.080)	0.315*** (0.094)	-3.150*** (0.188)	-2.566*** (0.628)
Strong explained difference	0.197 (0.255)	-0.275 (0.230)	-0.077 (0.173)	0.173 (0.219)	-0.395 (1.010)	-0.172 (0.118)	-0.053 (0.054)	0.034 (0.059)	-0.426*** (0.161)	0.938 (0.867)
Strong unexplained difference	0.904** (0.376)	1.430*** (0.422)	-1.764*** (0.328)	-1.414** (0.417)	0.541 (1.119)	-0.820*** (0.214)	1.766*** (0.111)	1.180*** (0.118)	-5.167*** (0.251)	-6.723*** (1.221)
Strong total difference	1.101*** (0.310)	1.155*** (0.431)	-1.841*** (0.279)	-1.241*** (0.344)	0.147 (0.586)	-0.992*** (1.882)	1.713*** (0.093)	1.214*** (0.104)	-5.593*** (0.209)	-5.785*** (0.789)
Unexplained difference in % of constant	20.667%	20.156%	54.851%	27.629%	-2.701%	15.975%	49.116%	30.054%	70.739%	78.598%
Strong unexplained difference in % of constant	22.627%	30.081%	59.259%	32.885%	-12.453%	24.295%	59.888%	37.763%	83.695%	104.544%
Observations	1,289	3,319	4,508	1,708	443	2,849	12,165	12,829	12,549	1'637
Note:	* indicates significance at the 10% level, ** indicates significance at the 5% level, *** indicates significance at the 1% level Bootstrapped standard deviations in brackets									

Table 6: Decomposition results table

5.3 Results of Individual Models

5.3.1 Model 2005-2006

During the legislative period of 2005-2006, the presidency, the majority in the House of Representatives and the Senate were all in the hands of the Republican party (Federal Election Commission, 2005). The coefficient for inflation expectation of strong Republicans of -0.909 percentage points, which is significant on the 1% level, shows that strong affiliates of the ruling party had significantly lower inflation expectations compared to independents in the reference category. Although the sign of the coefficient for the Republicans is also negative, indicating lower inflation expectations, the coefficient is not statistically significant. Both Democrats and strong Democrats show positive coefficients. Democrats show a 0.573 percentage point higher inflation expectation, which is significant at the 10% level. The model 2005-2006 does not indicate there to be a higher inflation expectation for strong Democrats compared to Democrats, with a not statistically significant coefficient of 0.039 for strong Democrats.

The results from the Blinder-Oaxaca decompositions show that a significant portion of the total difference between the two political groups is not explained by differences between the characteristics of the two groups, but instead is due to the political bias. The total difference for the decomposition of the groups of overall Republicans and Democrats shows a total difference of 0.934 percentage points, whereby 0.826 percentage points are unexplained by any differences in the characteristics of the two groups. For the decomposition of the results for participants with strong political affiliation, the total difference increases to 1.101 percentage points, whereby 0.904 percentage points of that difference is not explained by differences in characteristics. For the legislative period 2005-2006, the increased strength of political affiliation, therefore, increases the bias in inflation expectations.

5.3.2 Model 2007-2008

In the midterm election of November 2006, Republicans lost the majority in the Senate with Democrats holding 233 seats compared to 202 held by members of the Republican party (Federal Election Commission, 2007). As for the majority in the Senate, official results showed a tie, with 49 seats for each party. However, two independent candidates, Bernie Sanders and Joel Lieberman, sided with the democratic caucus, giving them the outright majority in the Senate (Rose, 2006). For the period 2007-2008, the distribution of power between Republicans and Democrats was therefore split, with the Republican president George W. Bush and the two legislative chambers both in the hands of Democrats.

The regression model for the legislative period 2007-2008 shows that Republicans and strong Republicans both had lower inflation expectations compared to independents, with average inflation expectations being -0.367 percentage points lower for Republicans and -0.968 percentage points lower for strong Republicans. However, only the coefficient for strong Republicans was found to be statistically significant. Coefficients for the inflation expectations of Democrats and strong Democrats are slightly positive compared to the reference category, with Democrats showing a coefficient of 0.145 and strong Democrats 0.004. Both the results for Democrats and strong Democrats are, however, not statistically significant.

The results from the Blinder-Oaxaca decompositions show that 0.958 percentage points of difference between overall Republicans and Democrats are unexplained by individual characteristics and therefore due to the partisan bias. The unexplained difference is statistically significant on the 1% level. The explained difference, which is slightly negative, is not significantly different from zero, indicating that no significant difference in average inflation expectation is explained by the differences in characteristics between the two groups of Republicans and Democrats. The decomposition of the results for participants with a strong political affiliation shows similar results to the model with more moderate political affiliation. However, the model for strong Republicans and strong Democrats shows a larger total difference, as well as a higher portion of unexplained difference.

5.3.3 Model 2009-2010

The 2008 election saw a shift in the White House, with Democratic president Barack Obama winning the presidential election over the republican candidate John McCain. In addition to winning the presidential election, Democrats also managed to increase their majority in both the House of Representatives and the Senate (Institute for Social Research at the University of Michigan, 2008). For the period of 2009-2010, the Democratic Party controlled the presidency as well as both legislative chambers with comfortable majorities.

The regression results for the period 2009-2010 show significantly higher inflation expectation for Republicans compared to independent survey respondents. The coefficient for respondents with a strong affiliation to the Republican party of 0.702 percentage points was even higher compared to Republicans with 0.503. Although Republicans expected significantly higher inflation, Democrats expected inflation to be -0.487 percentage points lower compared to the reference category. Strong Democrats were associated with an even lower coefficient with -1.187. All coefficients for the political affiliation were found to be statistically significant on the 1% level.

Since the model for 2009-2010 included data from both years, the coefficient 2010 was included in the OLS regression. The coefficient of 0.797 percentage points, which is statistically significant at the 1% level, shows there to be a generally higher inflation expectation from survey participants in the year 2010.

The Blinder-Oaxaca decomposition for the period 2009-2010 revealed that only a non-significant portion of the total difference between the average inflation expectations of overall Republicans and Democrats is explained by individuals' characteristics. Of the total difference of -1.470 percentage points, -1.633 is decomposed as the unexplained portion and results from political bias. The decomposition of the results for the two categories of strong Republicans and strong Democrats shows a similar picture, with a non-significant explained difference of -0.08 percentage points and a statistically significant unexplained difference of -1.764 percentage points. Overall, the total difference as well as the unexplained difference are greater for the model with stronger political affiliation.

5.3.4 Model 2011-2012

The first midterm election under President Barack Obama saw the Republican party gain around 60 seats in the House of Representatives, which handed them the majority in the chamber with 242 seats compared to 193 for the Democrats. Although the Republicans also managed to gain seats in the Senate, Democrats still held the majority for the legislative period 2011-2012 with 53 to 47 seats (Federal Election Commission, 2011). The results of the 2010 midterm elections led to a split in the legislative chambers between Democrats and Republicans.

The results of the OLS regression for the legislative period 2011-2012 do not indicate there to be a significantly higher inflation expectation from either Republicans, or strong Republicans compared to independents. The coefficient for Republicans is only marginally positive and not statistically significant. There is almost the same case for the coefficient for strong Republicans which is even slightly negative, thereby indicating a lower expected inflation compared to independents. The coefficients for both Democrats and strong Democrats, however, show a clearer tendency to lower inflation expectations with a coefficient of -0.860 percentage points for Democrats and -1.620 percentage points for strong Democrats, which are both statistically significant at the 1% level.

The results from the Blinder-Oaxaca decomposition for the period 2011-2012 revealed that a significant portion of the total difference for both the distinction between Republicans and Democrats, as well as for strong Republicans and Democrats, is not explained by differences in the characteristics of the two groups but is the result of partisan bias. The results for the unexplained differences are also in both cases statistically significant at the 1% level. The calculated total difference between the average inflation expectation is 1.183 percentage points greater for the model, which only involved consideration of the respondents with a strong political affiliation to either of the two parties. For the same model, the unexplained difference of -1.414 percentage points is -0.226 percentage points greater compared to the model for the case of not so strong political affiliation.

5.3.5 Model 2013-2014

President Barack Obama was re-elected for another 4-year term in the 2012 presidential election, sealing Democratic control of the White House for the same period. Although the Democrats were able to gain seats in the House of Representatives, the majority of seats still belonged to Republicans with 233 seats compared to 201 for the Democrats. In the Senate, Democrats were able to increase their majority slightly by gaining two seats, to a majority of 55 to 45 seats (Federal Election Commission, 2013).

The regression results for the legislative period 2013-2014 do not show any statistically significant differences in the inflation expectations between Democrats and Republicans compared to independents in the reference category. Although the results are not statistically significant, there still appears to be a tendency of lower inflation expectations from strong Democrats compared to Democrats. However, this tendency is not found for strong Republicans which show a slightly negative coefficient, whereas the coefficient for Republicans is positive. Overall, the small number of observations of 443 samples in the model 2013-2014 reduces the meaningfulness of the results.

The results from the Blinder-Oaxaca decomposition do not show any statistically significant results for either of the two models for the period 2013-2014. The small number of samples, which led to high standard deviations in the model, reduced the meaningfulness of the results of the decomposition. The previously mentioned negative coefficient for strong Republicans changes the sign of the decomposition results and therefore indicates there to be a negative bias in which strong Republicans have lower inflation expectations compared to Democrats, while the Democratic Party controlled the presidency as well as the Senate. The results therefore show a partially broken partisan theory for strong Republicans.

5.3.6 Model 2015-2016

In the midterm election of 2014, Republicans gained the majority of seats in the Senate with 54 against 46 for Democrats and increased their majority in the House of Representatives with 247 seats compared to 188 for representatives from the Democratic Party (Federal Election Commission, 2015). Democrats, therefore, only controlled the presidency.

The regression results for the period 2015-2016 show a trend towards higher inflation expectations from strong Republicans compared to Republicans and independents in the reference category, although the result for Republicans is not statistically significant. The coefficients for Democrats and strong Democrats show the opposite effect, where inflation expectations decrease with a strengthening affiliation towards the Democratic Party. The fixed effect for the year 2016 showed a statistically significant negative coefficient, indicating that inflation expectations were generally lower from survey respondents in the year 2016.

The decomposition result for overall Republicans and Democrats shows that only a small portion of the total difference can be explained by differences in the characteristics between the two groups. -0.539 percentage points of the total difference of -0.663 percentage points remain unexplained. Both values are statistically significant at the 1% level. The decomposition for the model of strong political affiliation revealed that the total difference for these categories is greater, while the majority of that difference is not explained by differences in the characteristics between the two groups. Both the total difference, and the unexplained difference are greater compared to the overall model, while also being statistically significant at the 1% level.

5.3.7 Model 2017-2018

The 2016 Presidential election saw the Republican party take over the White House, with Donald J. Trump winning the presidential election over Hillary Clinton. In the two legislative branches, Republicans were able to maintain their majority in the 2016 election and held a majority in the House of Representatives with 241 to 194 seats and 52 to 48 seats in the Senate (Federal Election Commission, 2017). For the legislative period 2017-2018, Republicans controlled both legislative chambers and the presidency.

The regression results for the period 2017-2018 revealed a -0.564 percentage points lower inflation expectation for supporters of the Republican party compared to independents. The expected inflation for strong supporters of the Republican party is even lower, with a coefficient of -0.973 percentage points compared to the reference category. Results from the supporters of the Democratic Party show the opposite inflation expectations, with Democrats' expectations 0.491 and strong Democrats expectations 0.723 percentage

points higher compared to the reference category of independents. All coefficients of political affiliation were found to be statistically significant at the 1% level.

The Blinder-Oaxaca decomposition for the political categories of overall Republicans and Democrats showed that the total difference of 1.439 percentage points between Republicans and Democrats is not explained by differences in the characteristics between the two groups. The total difference, as well as the unexplained part, increase when decomposing the model with strong political affiliations. The part of the total difference which is unexplained increases to 1.766 percentage points, while the total difference increases to 1.713, thereby indicating a larger difference in inflation expectations from strong supporters of the respective party. The decomposition results for the unexplained difference as well as the total difference are statistically significant at the 1% level for both decompositions.

5.3.8 Model 2019-2020

The 2018 midterm election saw Democrats gain a majority in the House of Representatives with 236 seats over Republicans with 199 seats. Republicans were, however, able to increase their majority in the Senate where they held 53 versus 47 seats (Federal Election Commission, 2019). Since the 2018 midterm election did not include a presidential election, Republicans controlled the presidency as well as the majority in the Senate for the period 2019-2020, while Democrats held the majority in the House of Representatives.

The coefficient for the inflation expectations of survey respondents which affiliate with the Republican party shows a negative sign, indicating lower inflation expectations compared to independents in the reference category. The coefficients of -0.384 for Republicans and -0.947 for strong Republicans indicate that stronger political affiliation for the Republican party led to lower expected inflation for the period 2019-2020. Affiliates of the Democratic Party were associated with positive coefficients with 0.268 for Democrats and 0.315 for strong Democrats, expecting higher inflation compared to independents.

The decomposition results for the period 2019-2020 reveal that only a statistically not significant portion of the total difference is explained by differences in the characteristics between overall Republican and Democrats, as well as between strong Republicans and strong Democrats. The unexplained difference, which is statistically significant at the 1%

level for both political groups, increases together with the total difference when decomposing the results for only the strong political groups. The 0.232 percentage points larger total difference and the 0.241 percentage points larger unexplained difference in the decomposition of strong political affiliates indicates that there is a stronger division between the expected inflation between strong Republicans and strong Democrats, than between overall Republicans and Democrats.

5.3.9 Results 2021-2022

The presidential election of 2020 saw democratic candidate Joe Biden win over Donald J. Trump to take over the White House for the following four years. In the legislative chambers, Democrats were able to maintain their majority in the House of Representatives with 222 to 213 seats. With there being 50 seats for each party in the Senate, control was split. However, since the deciding vote lies with the sitting vice president, control of the Senate lay effectively with the Democrats (Federal Election Commission, 2021).

The regression results for the period 2021-2022 show significantly higher inflation expectations for Republicans, with a coefficient of 1.656 and 2.171 for strong Republicans compared to independents in the reference category. For the Democrats the comparable inflation expectations were -1.745, and -3.15 percentage points lower for strong Democrats. All obtained coefficients measuring political affiliation are statistically significant at the 1% level. The also statistically significant coefficient for fixed year effects in the year 2021 shows that inflation expectations were 1.193 percentage points higher in the second year of the legislative period 2021-2022.

The decomposition results for the legislative period 2021-2022 reveal a total difference between mean estimates of inflation expectations between overall Democrats and Republicans of -4.696 percentage points. Although a statistically significant part of the difference is explained by differences in characteristics, the -0.329 percentage points are only a small fraction of the total difference. Most of the difference, -4.367 percentage points, remains unexplained. The same holds true for the results from the decomposition of the model with strong political affiliation, where -5.167 percentage points of the total difference of -5.930 is not explained by differences in characteristics.

The unexplained difference for the model with strong political affiliation is 0.471 percentage points greater compared to the model containing the not so strong political affiliation, thereby indicating a greater partisan bias.

5.3.10 Results 2023-2024

The 2022 midterm election saw Republicans take control of the House of Representatives with 222 seats, compared to 213 seats for representatives from the Democratic Party. However, Democrats now hold a clearer majority in the Senate with 51 to 49 seats (BBC, 2022). For the second half of President Biden's presidency, the legislative majorities are therefore split, with Democrats controlling the Senate and Republicans controlling the House of Representatives.

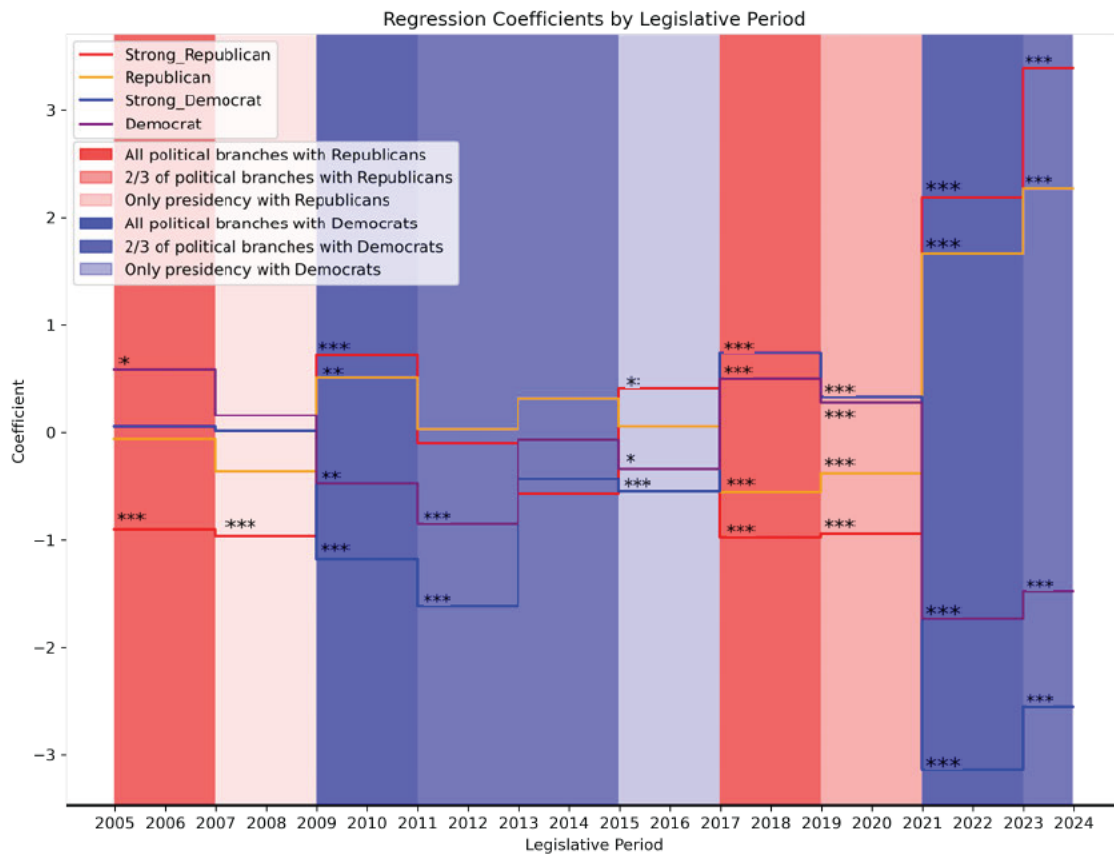
The regression results for the legislative period 2023-2024 only include survey responses collected up to the end of March 2023. The results show that inflation expectations for Republicans were 2.263 percentage points higher compared to independents. Inflation expectations from strong Republicans were 3.374 percentage points higher in the first three months of the legislative period. Affiliates of the Democratic Party had lower inflation expectations, with -1.489 percentage points for Democrats and -2.566 percentage points for strong Democrats compared to independents. All coefficients for the political affiliation are statistically significant at the 1% level, except for the coefficient for Democrats, which is only significant at the 5% level.

The Blinder-Oaxaca decomposition for the model 2023-2024 revealed that -5.054 percentage points of the total difference of -4.718 percentage points is unexplained by differences in characteristics of overall Democrats and Republicans. The unexplained difference increases by 1.669 percentage point when only the stronger political categories are included. The total difference also increases in the model with stronger political affiliation to -5.785 percentage points. The coefficients for the unexplained and the total difference are statistically significant at the 1% level.

6 Combined Results

While the individual results in section 5 facilitate an assessment of the partisan bias within a certain legislative period, it is difficult to assess the development of the partisan bias over time. The combined results involved the utilization of the results from the individual models and the decompositions for the creation of a deeper understanding of the partisan bias in inflation expectations and its development over time.

6.1 Combined Regression Results



* indicates significance at the 10% level
 ** indicates significance at the 5% level
 *** indicates significance at the 1% level

Figure 5: combined results of regression coefficients by legislative period

In Figure 5 the regression coefficients for strong Republicans, Republicans, strong Democrats and Democrats from the individual models are shown for each legislative period. To express the political landscape of each period, the corresponding background colour of the period indicates the majority distribution, whereby a red background indicates a Republican presidency, and a blue background reflects a Democratic presidency.

Strong, deep colours indicate that all political branches are held by the same party and lighter colours indicate that only a fraction of the legislative chambers, or only the presidency, is held by one party.

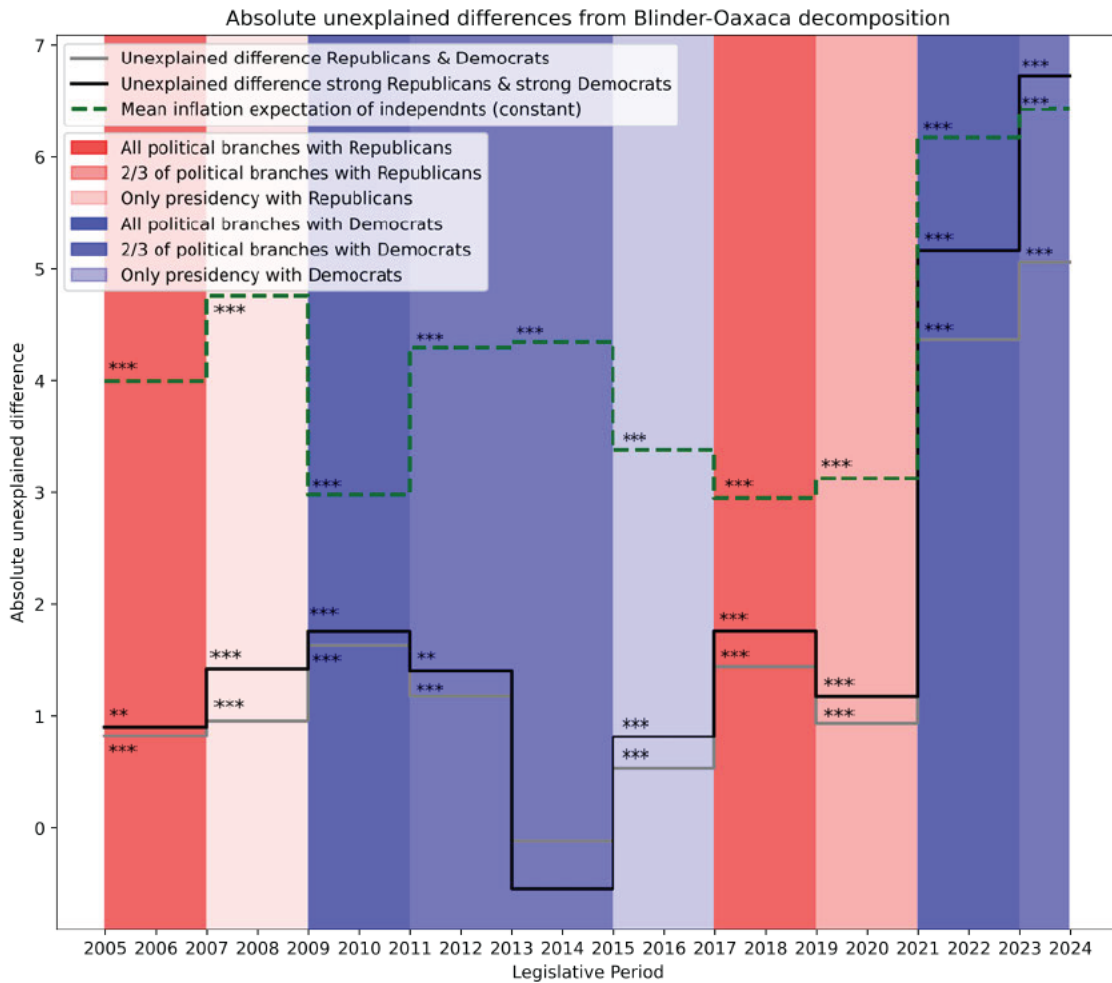
The visualization of the combined regression results in Figure 5 shows that for the legislative period 2005-2006, the strong Republicans expect significantly lower inflation compared to independents, while strong Democrats expect a slightly higher inflation. The legislative change in the period 2007-2008 appears to lower inflation expectations of strong Democrats to a non-statistically significant level. The election of Barack Obama in November 2008 and the Democratic majority in both legislative chambers led to a shift in inflation expectations, with strong Republicans and Republicans now expecting significantly higher inflation, whereas Democrats and strong Democrats both expected lower inflation compared to the reference category. The inflation expectations for the period 2011-2012 for Republicans and strong Republicans appear to be in line with the expectations from independents and are not statistically significant for this legislative period. The coefficients for Democrats and strong Democrats are statistically significant and are around 1 to 1.5 percentage points lower than the inflation expectation of independents. Over the legislative periods 2013-2014 and 2015-2016, inflation expectations appear to be more similar between the political groups, with Democrats expecting slightly lower and Republicans expecting slightly higher inflation. A lack of data leads to there being non-significant coefficients for the period 2013-2014, although results appear to be almost similar to the ones in the period 2015-2016, with only the strong Republican coefficient changing to the indication of significantly higher inflation expectations compared to independents. The election of Donald Trump led to a significant drop in inflation expectations from Republicans and strong Republicans, while expectations from Democrats and strong Democrats increased significantly. Inflation expectations from affiliates of both political parties appear to be moving slightly closer together in the period 2019-2020, while still being statistically significantly positive for Democrats and strong Democrats, and negative for Republicans and strong Republicans.

With the election of President Joe Biden, inflation expectations of Democrats and strong Democrats decreased drastically to a statistically significant level. Inflation expectations of Republicans and strong Republicans in contrast increased significantly, again creating a strong divide. This divide appears to be constant for the data points which have been included for the period 2023-2024, which shows that inflation expectations from all political categories have increased compared to the previous period.

6.2 Combined Decomposition Results

The results from the combined regression results in Figure 5 appear to show a non-constant partisan bias in inflation expectations between Republicans and Democrats. To assess the changing strength of the bias, the results from the Blinder-Oaxaca decomposition were visualized, as shown in Figure 6. The results from the Blinder-Oaxaca decomposition in Table 6 show that the explained difference, which highlights the portion of the differences in inflation expectations between the two political parties that can be explained by the respondents' personal characteristics, does generally not explain a statistically significant portion of the total difference. The explained difference is only statistically significant for the period 2021-2022, where it explains -0.329 percentage points of the difference between overall Republicans and Democrats and -0.426 percentage points for strong Republicans and strong Democrats, as well as for the period 2015-2016, where it explains -0.123 percentage points of the difference between overall Democrats and Republicans. However, the explained difference in the period 2015-2016 is only statistically significant at the 10% level, whereas the explained differences for 2021-2022 are statistically significant at the 1% level. Since the portion of the difference, which is explained by respondents' personal characteristics, are largely insignificant, the further presented results are concentrated on the unexplained differences between the two groups.

As discussed in section 4.3, changes in the political majority distribution changes the sign of the results of the Blinder-Oaxaca decomposition. A positive result hereby indicates that Republicans and strong Republicans have higher inflation expectations compared to Democrats and strong Democrats, and a negative result indicates higher inflation expectations from Democrats and strong Democrats compared to Republicans and strong Republicans for a given legislative period. To account for this, the modified unexplained difference of both decomposition models is visualized in Figure 6 alongside the mean inflation expectations from independent survey respondents.



* indicates significance at the 10% level
 ** indicates significance at the 5% level
 *** indicates significance at the 1% level

Figure 6: Absolute unexplained differences from the Blinder-Oaxaca decomposition

The results from the Blinder-Oaxaca decomposition show a statistically significant unexplained portion of the total difference between the inflation expectations of overall Republicans and Democrats as well as for strong Republicans and strong Democrats, for all legislative periods except for the period 2013-2014, where the results are not statistically significant.

The decomposition results show that the absolute unexplained differences are comparatively low for the legislative period 2005-2006, at around 0.9 percentage points for both models of overall Republicans and Democrats, and strong Republicans and strong Democrats. While the unexplained difference for overall Republicans and Democrats remains relatively constant for the period 2007-2008, the absolute unexplained difference in inflation expectations between strong Republicans and strong Democrats increases from

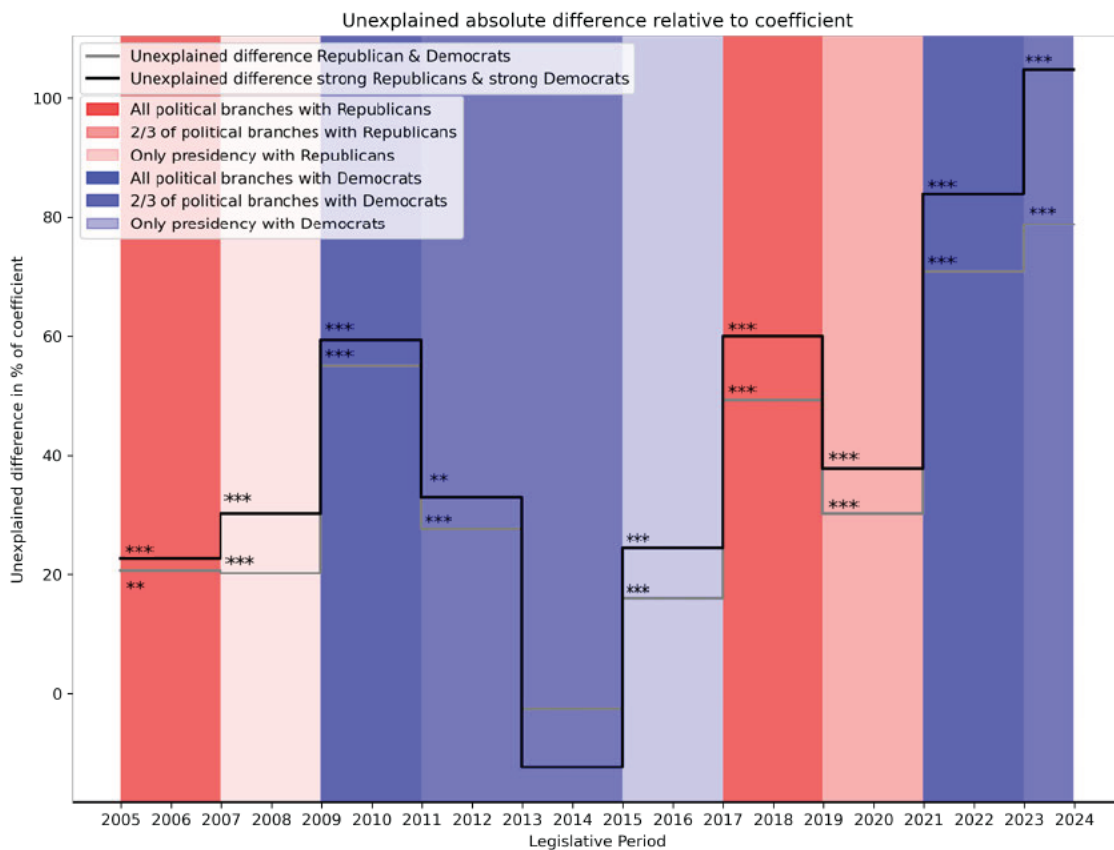
0.904 percentage points to 1.430 percentage points. The unexplained difference in inflation expectations between both sets of groups increased significantly to 1.633 and 1.764 percentage points in the period 2009-2010, which includes the election of Barack Obama and a majority for the Democratic Party in both legislative chambers. The unexplained difference in inflation expectations between the two political groups reduced over the following period to 1.188 for the groups of overall Republicans and Democrats and to 1.414 percentage points for the groups of strong Republicans and strong Democrats. The decomposition results for the period 2013-2014 show a negative unexplained difference for both models, whereby despite a Democratic president and a majority in the Senate, inflation expectations from strong Republicans and Republicans appear to be below the ones of Democrats. However, the results for both models are not statistically significant and show large standard deviations. The results of both models for the legislative period 2015-2016 show statistically significant values of 0.539 percentage points for the model of overall Republicans and Democrats and 0.992 percentage points for the model of only strong Republicans and strong Democrats. The values for both models increased significantly with the election of Donald Trump and the majority for the Republican party in both legislative chambers, which is reflected in the legislative period 2017-2018. Although the period 2019-2020 saw a slight moderation in the unexplained difference between the inflation expectations of the two political groups, the election of Joe Biden and the Democratic majority in both legislative chambers increased the values for both models to 4.376 percentage points for overall Republicans and Democrats and to 5.593 percentage points for strong Republicans and strong Democrats. The unexplained difference between the two groups increased further in the first three months of the legislative period 2023-2024, whereby the unexplained difference between overall Republican and Democrats measures 5.054 percentage points and 5.789 percentage points for the model of stronger party affiliation.

As discussed in section 4.3, changes in the overall level of inflation expectations distorts the interpretability of the absolute unexplained difference in inflation expectations between overall Republicans and Democrats, as well as between strong Republicans and strong Democrats. The mean inflation expectations from independent survey respondents, expressed by the constant coefficient of the regression analysis, highlights the inconsistency of the mean inflation expectations. As is shown in Figure 6 the generally lower inflation expectations in the period 2009-2010 and the generally higher mean inflation

expectations in the legislative periods 2021-2022 and 2023-2024 distort the interpretability of the relative strength of the unexplained difference over time.

6.3 Modified Decomposition Results

To evaluate the strength of the partisan bias over time, the modified absolute unexplained variables for the decomposition in percent of the mean inflation expectations from independents for the respective periods are shown in Figure 7 in order to indicate the relative strength of the partisan bias in each legislative period.



- * indicates significance at the 10% level
- ** indicates significance at the 5% level
- *** indicates significance at the 1% level

Figure 7: Unexplained absolute difference relative to coefficient

The modified decomposition results show that for the first legislative period, the unexplained difference between the two groups relative to the mean inflation expectations of independents was slightly above 20% and statistically significant at the 5% level for results from strong Republicans and strong Democrats, and significant at the 1% level for results from overall Republicans and Democrats. The relative bias of strong Republicans and strong Democrats increases slightly to 30% for the legislative period 2007-2008, while the bias from Republicans and Democrats remains constant. The election of Barack

Obama led to a significant increase in the relative bias from 29.2% to 59.3% for strong affiliates of their respective parties and an increase from 34.7% to 54.9% for all affiliates of the Republican and Democratic Party. The relative bias dropped in the following legislative period of 2011-2012 to 32.9% and 27.6% respectively, whereby the result for strong Republicans and strong Democrats is only statistically significant at the 5% level. The relative bias for the period 2013-2014 shows a negative value, but is not statistically significant for either of the two models. The results of the modified decomposition analysis for the period 2015-2016, in which Democrats only held the presidency and no majority in either of the legislative chambers, show a relative bias of 24.3% for strong affiliates and 16% for mean inflation expectations of all party affiliates. With the election of Donald Trump, the relative bias increased significantly by 35.6% and reached a new high point for the groups of strong Republicans and strong Democrats with 59.9%. For this period the change in the presidency as well as in the legislative majority is also noticeable in the relative bias of overall Republicans and Democrats. However, the increases by 33.1% and the relative bias of the overall groups remains lower with 49.1%. The midterm election of 2018 saw Democrats re-gaining the majority in the House of Representatives. In the following legislative period of 2019-2020 the relative bias in inflation expectations of both groups decreased compared to the earlier legislative period with a relative bias of 37.7% for strong party affiliates and 30.05% for overall Republicans and Democrats. The election of Joe Biden and the Democratic majority in both legislative chambers led to a strong increase in the relative bias of both groups. The relative bias of strong Republicans and strong Democrats increased by 45.9% to 83.7% and by 40.7% to 70.7% for overall Republicans and Democrats, which indicates that there is a large unexplained difference between the inflation expectations of the two groups relative to the mean inflation expectations of independents. The relative bias increased again for both groups in the first three months of the legislative period 2023-2024, where it is 104.5% for strong party affiliates and 78.6% for all affiliates of either the Republican or the Democratic Party.

6.4 Conclusion of empirical results

From the regression analysis it could be demonstrated that affiliates of the party which holds the presidency, in general expect inflation to be lower, whereas supporters of the opposing political party will expect the inflation rate to be higher compared to survey participants with no particular affiliation towards either of the two parties. It was also shown from the analysis that the effect of partisan bias in inflation expectations is more pronounced when analysing the inflation expectations of strong affiliates of either the Republican or the Democratic Party. Inflation expectations of strong party affiliates in most cases exceed the ones of their more moderate counterparts in times of an opposing presidency, and are consistently lower in times of a presidency of the supporting party. The variation in the statistical significance of the regression coefficients for the political groups indicates that the bias towards lower inflation expectations when the supporting party is in control of the presidency is slightly stronger compared to the bias towards higher inflation expectations when the opposing party holds the presidency. This is, in particular, observable for the regression coefficients of survey respondents with strong political affiliation. In all periods, except for the period of 2013-2014 in which data was only available to a limited extent, the coefficient for the party in support of the current president was shown to be a negative coefficient significant at the 1% level. Contrastingly, the coefficient for strong political affiliates opposed to the current president are only statistically significant in 6 out of 10 legislative periods. The regression coefficients related to survey respondents with a weaker political affiliation towards either of the two parties show the same tendency of a stronger bias towards expecting lower inflation in times of a supporting party presidency. The results for all the legislative periods show 7 statistically significant coefficients indicating lower inflation expectations in times of a supporting party presidency, compared to only 5 coefficients indicating statistically significantly higher inflation expectations during an opposing party presidency.

The analysis of the political majority distribution over different legislative periods suggests that the partisan bias in inflation expectations is not only driven by the presidency but is also influenced by the majority distribution in the legislative chambers. In periods where the ruling party had full control of both legislative chambers and the presidency, regression coefficients related to both supporters with strong and not so strong political affiliation were statistically significant with the exception of period 2005-2006, where the coefficients for the not so strong affiliation were not significant. In legislative periods

where the party of the president only controlled parts of the legislative chambers, the coefficients of not so strong political affiliates is only statistically significant in 2 out of 6 cases for the supporting party coefficient and in 4 out of 6 cases for opposing party affiliates. Inflation expectations from survey respondents with strong political affiliation appear to be less influenced by changes in the legislative majority distribution and are statistically significant in all cases where their favoured party is in control of the presidency, again excluding the period 2013-2014 where data was only available to a limited extent. Strong affiliates of the opposing side however appear to lower their inflation expectations and only show statistically significantly higher coefficients in 3 out of 5 legislative periods.

The results of the modified decomposition show that the bias in inflation expectations relative to mean inflation expectations is higher when one party controls the presidency as well as the majority in both legislative chambers. The results further show that the election of a new president, including the majority in both legislative chambers for the same party, leads to an average increase in the relative bias of 36.9% for strong party affiliates and 36.2% for not so strong party affiliates. The loss of one legislative chamber in the periods 2011-2012 as well as in 2019-2020 caused the relative bias to drop to around 24.3% on average for strong party affiliates and 23.1% for overall affiliates of both parties. However, a reduction in relative bias is not visible in the data from the first three months of the legislative period of 2023-2024, which appears to be increasing compared to the previous legislative period.

The results of the modified decomposition point to there being generally increased bias in inflation expectations in recent periods. Although the relative bias in the legislative period 2017-2018 is comparable to the relative bias of Barack Obama's first term with a similar political majority distribution, the following periods are associated with increased relative biases. The relative bias in the period 2019-2020 is 4.9% higher for the group of strong party affiliates and 2.4% higher for all party affiliates compared to the legislative period 2011-2012, where the party of the president also lost the majority in the House of Representatives. This tendency is further visible in the higher outright relative bias in the period 2021-2022 and an even higher relative bias in the first three months of the legislative period 2023-2024 of over 100% for strong political affiliates.

7 Discussion

The results show a significant presence of partisan bias in inflation expectations between Republican and Democrats, and therefore confirms the findings obtained in previous studies. The results show an overall stronger partisan bias in political groups with a stronger political affiliation, which confirms similar results by Gillitzer et al. (2021) and Gerber & Huber (2010). The results of the Blinder-Oaxaca decomposition indicate that a significant portion of the partisan bias in inflation expectations cannot be explained by differences in individuals' characteristics between the two groups of Republicans and Democrats, as well as between strong Republicans and strong Democrats. These results are supportive of previous findings by Bachmann et al. (2019 & 2021) as well as Choi et al. (2022).

The results however point to there being a slightly more nuanced partisan bias, where the inflation expectations of survey respondents are not solely biased by being supportive or opposed to the party of the current president. The distribution of the political majority among the two legislative chambers in the House of Representatives and the Senate appears to also play a role in the strength of the partisan bias in inflation expectations of survey participants. The results indicate that the bias is largest when the party of the president also controls both legislative chambers.

As discussed in the review of relevant literature, on the basis of the theory of partisan economics it is expected that there is a focus on different economic policies in a Republican, right-wing government compared to a Democratic, left-wing government. Generally, Republican policies are expected to favour low inflation with tighter budget control and an acceptance of higher unemployment rates, whereas Democratic policies will be aimed at maximum employment at the expense of higher fiscal spending and higher inflation. Since spending bills need to be passed by both the House of Representatives and the Senate as well as signed by the president, passing legislation which strongly supports one of the premises of partisan economics will often require a majority in both legislative branches by the party holding the presidency (USA.gov, 2023).

Within the scope of the analysis, a total majority for one party across the presidency and the two legislative branches has only happened in three legislative periods. Each came after the first election of Barack Obama, Donald Trump, and Joe Biden as presidents. During these periods, all presidents perused legislation which fed the partisan economics narrative. Barack Obama passed the Affordable Healthcare Act, better known as Obama Care in 2010, which was met by opposition from the Republican party over spending concerns (U.S Department of Health and Human Services, 2022). Donald Trump passed the Tax Cuts and Jobs Act in 2017, which created tax incentives and overall lower tax rates, especially for wealthy Americans (Cornell Law School, 2022). Consequently, republicans argued that the lost tax revenue would be compensated by higher consumer spending and economic growth, which Democrats argued against. President Joe Biden and Democrats in the House of Representatives and the Senate passed the Inflation Reduction Act in 2022, which included sizeable investments in green energy and healthcare, which Republicans opposed due to funding concerns (Senate Democrats, 2022). From the view of partisan economics, the higher partisan bias in inflation expectations in periods where the party of the president also holds a majority in the legislative chambers is therefore comprehensible.

Another reason for the higher bias in inflation expectations in these periods of single party control might be found in the social identity theory. Huddy (2001) has argued that partisan bias occurs because political parties are a means of strong personal identification in which a sense of self is tied up in the party's success. This attachment to a party and consequently the partisan bias might be stronger in times of either a recent win or a loss of the supporting party and president.

The results indicate that the loss of the outright majority in the legislative chambers somewhat reduces the bias in inflation expectations. Survey respondents appear to take the increased difficulty of passing legislation, which would feed into the partisan economics narrative, into account whenever the party of the president does not hold the majority in both legislative chambers. Therefore, especially the inflation expectations from opponents of the current presidential party appear to drop. This might suggest that opponents of the presidential party are more confident that the majority of their party in one or both legislative chambers would hinder the ruling party from passing meaningful legislation,

whereas supporting party affiliates are still confident that their party will manage the economy well.

While the results indicate that the loss of the outright majority by the party of the president in one legislative chamber lowers the bias in inflation expectations, this effect does not appear to increase significantly when the opposing party holds the majority in both legislative chambers. Therefore, survey respondents appear to only differentiate between an outright majority of the presidential party in the legislative chambers, or a split majority between the two parties of the president and the opposition in either one or two legislative chambers.

Another finding of the analysis points to an increase in the partisan bias in inflation expectations in the most recent legislative periods. These findings are consistent with research by Brady et al. (2022), Mian et al. (2021) and Jones (2020), who have indicated there is a larger partisan disagreement in recent times, although they did not specifically study partisan bias in inflation expectations. Jones (2020), who studied the development of partisan differences over a time frame of over 50 years, has argued that the increase in partisan difference is partially driven by increased polarization. The results point to an increase in partisan bias in inflation expectations since the election of Donald Trump, who can be regarded as a rather divisive politician. Events surrounding the election of Joe Biden with allegations of election fraud and the storm on the U.S capitol on January 6th of 2021 further appear to have nurtured party divisions and might be one reason for the apparent increase in partisan bias in inflation expectations visible in the results for the legislative period 2021-2022. However, the increase in the bias in inflation expectations comes at the same time as a substantial increase in real inflation rates and an increased political discussion about how to address the increased inflation rates. In their findings, Jones (2020) identified political awareness as one of the main drivers of partisan division. The increased awareness of inflation and the heightened political discussion, in which both parties suggest solutions in line with their partisan economic preferences, might be the drivers of the increase in partisan bias in inflation expectations in recent legislative periods.

8 Conclusion

The thesis set out to analyse how partisan bias in inflation expectations has evolved over time among survey respondents of the University of Michigan Survey of Consumers, while considering the impact of varying degrees of political affiliation. The results are consistent with previous research and highlight several important findings.

First, the regression analysis demonstrates that individuals affiliated with the party holding the presidency generally expect lower inflation, while supporters of the opposing party generally anticipate higher inflation. This effect is particularly pronounced among strong party affiliates, with their inflation expectations mostly exceeding those of their more moderate counterparts during an opposing presidency and being lower during a supporting presidency.

Furthermore, the influence of the political majority distribution in the legislative chambers on partisan bias in inflation expectations is evident. The bias is most significant when the party of the president also controls both legislative chambers. In these periods, the inflation expectations of survey participants with both strong and weaker political affiliations exhibit statistical significance. The results of the Blinder-Oaxaca decomposition support the influence of the political majority distribution on partisan bias in inflation expectations. The unexplained differences, representing the bias not accounted for by individuals' characteristics, are generally higher in legislative periods where the party of the president controls both legislative chambers. This suggests that the bias in inflation expectations is present regardless of the political distribution, but its strength is influenced by the majority control. The loss of the outright majority in the legislative chambers appears to reduce the bias in inflation expectations, suggesting that individuals take into account the increased difficulty of passing partisan economic legislation. However, the effect is not significant when the opposing party holds the majority in both legislative chambers, indicating that individuals primarily differentiate between outright majority and split majority control.

Conclusion

The theory of partisan economics, which emphasizes different economic policies pursued by Republican and Democratic governments, aligns with the observed results. The passing of legislation supporting partisan economic premises requires a majority in both legislative branches alongside the presidency. Therefore, the higher partisan bias observed when the party of the president controls both legislative chambers can be attributed to the influence of partisan economics. Additionally, the social identity theory provides further insights into partisan bias. Political parties serve as a means of strong personal identification, and the attachment to a party intensifies during times of recent wins or losses by the supporting party and president. This may contribute to the higher bias observed during periods of single party control.

Moreover, the analysis suggests that the relative bias in inflation expectations has increased since the presidency of Donald Trump. This tendency towards higher bias is observed even in recent periods, such as the first legislative period of President Biden or the first three months of the legislative period of 2023-2024. The increase in partisan bias in inflation expectations aligns with previous research indicating a larger partisan disagreement in recent times. Increased polarization and heightened political awareness contribute to this rise in bias. The increased awareness of inflation and the subsequent political discussions regarding its resolution align with partisan economic preferences, further fueling the partisan bias in inflation expectations.

In conclusion, the empirical analysis provides robust evidence of partisan bias in inflation expectations with respect to varying degrees of political affiliation. The results highlight the influence of the party holding the presidency and the political majority distribution in the legislative chambers on the strength of the bias. Understanding these dynamics is crucial for comprehending the formation of inflation expectations and the role of partisan factors in shaping economic perceptions.

9 Limitations

The main limitation of the analysis of partisan bias in inflation expectations using the Michigan University Survey of Consumers lies in the wording of the related question in the survey, which asks survey respondents about future “prices in general”. As discussed in section 3.3, previous research has raised questions about the degree to which participants will state their expected inflation expectation or will answer based on personal experiences and expectations with specific prices (Bruine de Bruin et al., 2010; Savignac et al., 2021). The consensus of the authors points to there being generally higher inflation expectations whenever survey participants are asked about prices in general as opposed to the expected rate of inflation. The extent to which the general overestimation might have influenced the results of this study can however not be verified.

Another limitation of the analysis stems from the Blinder-Oaxaca decomposition. The bias in inflation expectations in most cases consists of a combination of an overestimation of future inflation from opponents of the presidential party and an underestimation from survey participants supportive of the party of the president. However, through the decomposition, the information about the degree to which the partisan bias in inflation expectations is driven by support for or opposition to the party is lost. The unexplained difference resulting from the decomposition describes the overall difference in inflation expectations between the two groups. This limitation prevents the analysis of the development of the bias of one party over time.

10 Recommendations

The overall results of the analysis imply that the partisan bias in inflation expectations in the survey data of the University of Michigan's Survey of Consumers is considerable and has the potential to distort the mean inflation expectations from all survey respondents. The results from the modified decomposition models reveal that the bias in inflation expectations can amount to 100% of the mean inflation expectations of independent survey respondents. Since inflation expectations from survey data have gained in importance for market participants, monetary policymakers, and politicians with the recent surge in inflation, the issue of partisan bias in inflation expectations might need to be addressed. This might be achieved by controlling the portion of survey respondents from each political party in order to avoid the over-representation of one political view, which would result in biased inflation expectations. Alternatively, a model could be created which corrects the inflation expectations from survey respondents with the partisan bias. This, however, has the problem of the non-consistency of the bias, which was revealed in the analysis of the present work.

Future research could employ data from other counties in order to evaluate more broadly the strength of the partisan bias in inflation expectations over time, as well as create knowledge about the development of the partisan bias over time. Furthermore, some of the limitations of the analysis could be mitigated by using a more complex decomposition method.

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