Differential Dynamic Responsiveness in the U.S. Congress: Evidence from NAFTA

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Abstract

Do incumbent politicians adapt their policy positions in response to changes in public opinion? Existing studies of dynamic responsiveness cannot account for changes in the legislative agenda in Congress over time. We exploit an original dataset on the positions of members of Congress on the North American Free Trade Agreement (NAFTA) at various points leading up to the November 1993 roll-call vote, and generate original estimates of constituency (and sub-constituency) public opinion using multi-level regression and post-stratification (MRP). We track whether legislator positioning responds to changes in constituency opinion and also examine whether legislators are more responsive to copartisan or affluent constituents ("differential dynamic responsiveness"). We find no evidence of responsiveness to the constituency median or to copartisans. Our findings suggest a deficit of dynamic responsiveness in the United States Congress.

Introduction

Are incumbents responsive to changes in constituency opinion over time? The idea that shifting constituency preferences should yield corresponding changes in government policy is perhaps a fundamental tenet of normative democratic theory. There are two theorized mechanisms by which shifts in opinion among citizens might yield changes in government policy (Caughey and Warshaw, 2018). The first is via incumbent adaptation: to minimize the possibility of being voted out of office, politicians should adapt to shifting constituency preferences. The second theorized mechanism is via selection: incumbents of one party are voted out in favor of politicians from another party, yielding sharp discontinuities in policy after elections.

Studies measure dynamic responsiveness by looking at how changes in opinion affect changes in policy (Caughey and Warshaw, 2018; Fowler and Hall, 2017; Lee, Moretti and Butler, 2004; Stimson, MacKuen and Erikson, 1995; Warshaw, 2016). One issue is that these studies are unable to control for the issue agenda across time. In these contexts, it is often unclear whether there is a change in the agenda such that politicians are voting on issues upon which there is greater congruence of preferences between the constituency and the legislator or if there is actual movement of legislator positioning on the *same* issue over time. Furthermore, these studies examine responsiveness by treating different bills as indicating the same policy (e.g. pro-LGBT bills). Scaling different bills requires making assumptions about whether the bills belong to the same dimension. Finally, these studies have not disaggregated the effects of subconstituency opinion on legislator positioning; while it is possible that legislators do not adapt to changes in the position of the median, legislators may adapt to changes in the opinions of relevant sub-groups, like copartisans or the affluent.

We resolve these concerns by exploiting time-series data on legislator positioning on the North American Free Trade Agreement (NAFTA) throughout 1993. Various interest groups had surveyed members of the House and Senate at different time periods in the lead-up to the passage of NAFTA in November 1993. Using these legislator surveys and contemporaneous surveys of public opinion, we look at the effect of changes in constituency opinion on subsequent changes in legislator

positioning. This design contributes to the literature in a few ways. First, we are able to control for the issue category. All the legislator positions were recorded on NAFTA; to the extent that the bill had undergone changes over the course of the year, we have additional data on legislator concerns (on policy components that changed over time) that we can control for in the analysis. Second, using multi-level regression and post-stratification (MRP), we have created original estimates of public opinion at the constituency- and subconstituency-level for districts in the House and Senate. In particular, we are able to compare the effect of changes in copartisan opinion with those at the overall district level. Third, we provide a relatively rare look at changing legislator positions on a specific bill over time, and we are able to isolate the effect of one possible determinant of roll-call voting - constituency opinion. One should note that there are multiple determinants of roll-call voting outside of constituency opinion, and we are specifically zeroing in on one possible determinant that may be present here.

To measure adaptation, we exploit unique original data on the evolution of positioning on NAFTA by members of Congress as measured by legislator surveys conducted by a group called USA-NAFTA in March, June and September 1993, and October and November positioning data from Congress Daily and the Associated Press. Moreover, we directly account for shifts in legislator positioning due to changes in the NAFTA legislation because legislators spelled out their concerns about the bill in an open-ended section of the survey. For example, we code whether legislators had concerns about labor, agriculture, and the environment, which directly relate to and may have been later addressed by the side-agreements to NAFTA.

We find no evidence of legislator adaptation to shifting constituency opinion, but legislators appear to be more responsive to the district median than to copartisans. Following our analysis, we provide evidence that interest group pressure is most likely the main source of misrepresentation of median preferences. This suggests that normative theories of democracy that emphasize dynamic responsiveness may need revision. Given the unusually high salience of the North American Free Trade Agreement, the lack of incumbent adaptation for this bill suggests that it is likely members

of Congress are unresponsive on lesser-known pieces of legislation as well.[1]

Related Literature

Much of the literature on responsiveness in American politics finds evidence that there is a positive association between public opinion and policy (Erikson, MacKuen and Stimson, 2002; Stimson, MacKuen and Erikson, 1995). In particular, there is also evidence of accountability in elections. Members of Congress are penalized for deviating from constituency preferences (Ansolabehere and Jones, 2010; Canes-Wrone, Brady and Cogan, 2002), though this electoral penalty appears to have declined in more recent years (Bonica and Cox, 2018), in part due to the fact that elections have become more party-oriented instead of candidate-oriented (Erikson and Titiunik, 2015; Lee, 2015; Hopkins, 2018).

On the other hand, there is evidence to suggest that substantive representation may be deficient in the U.S. Congress. In particular, there are wide gaps between Republicans and Democrats in terms of roll-call voting (Bafumi and Herron, 2010; Lee, Moretti and Butler, 2004; McCarty, Poole and Rosenthal, 2009), which suggests a lack of convergence to the median of each district. At the state legislative level, while we still see a positive association between district preferences and legislative behavior, there are often gaps in congruence between legislators and their constituents (Lax and Phillips, 2012), and there are biases in policy (Simonovits, Guess and Nagler, 2019), 2019). Moreover, there is evidence that politicians cater to the rich (Bartels, 2008; Gilens, 2012), though some have pushed back on this claim (Soroka and Wlezien, 2008). Finally, much evidence exists that members of Congress appeal to copartisans (Clinton, 2006; Kastellec et al., 2015; Mian, Sufi and Trebbi, 2010; Pomirchy and Schonfeld, 2019).

When looking at dynamic responsiveness, some studies have shown that policy is adaptive to public opinion in states (Caughey and Warshaw, 2018; Stimson, MacKuen and Erikson, 1995).

[1]However, Pomirchy and Schonfeld (2019) find that there is little cross-sectional responsiveness on trade bills in the U.S. House, but there is evidence of responsiveness on security and immigration bills (though representation is biased away from the median towards copartisans). It may therefore be the case that there is unusually low dynamic responsiveness on trade in particular compared to other issue areas.

However, some suggest that there is a representational inertia such that there might be persistent mismatches between districts and representatives (Bafumi and Herron, 2010; Fowler and Hall, 2017; McCarty, Poole and Rosenthal, 2009). Moreover, the literature on electoral proximity is related and shows that legislators do adapt to constituency preferences as an election comes near (Arceneaux et al., 2016; Canes-Wrone, 2006; Warshaw, 2016). Some additional literature examines the effect of term limits on legislative behavior, where some showing a "shirking" effect (Fouirnaeis and Hall, 2018), whereas others find no changes in legislative behavior in lame-duck sessions (Jenkins and Nokken, 2008). Our paper contributes to this literature by examining changing legislator positioning on the same bill before the final vote. This has some nice advantages as it allows us to control for the issue agenda and isolate one particular determinant - constituency opinion - of legislator preferences and roll-call decision-making.

We also contribute to a literature exploring the domestic politics of trade policy-making. The "Open Economy Politics" (OEP) framework focuses on domestic policy preferences as a driver of trade policy; preferences are aggregated through institutions, ultimately yielding trade policy.[2] Examples of this approach in the United States include research finding that American legislators who represent more educated constituencies are more likely to vote in favor of trade liberalization (Owen, 2017; Milner and Tingley, 2011; Bailey, 2001) and other research showing the reverse holds for legislators representing constituencies that are more vulnerable to Chinese import competition (Feigenbaum and Hall, 2015; Kuk, Seligsohn and Zhang, 2017) or off-shoring (Owen, 2017). However, recent studies challenge the assumption that politicians take mass trade preferences into account in policy-making. The cross-sectional analysis of Pomirchy and Schonfeld (2019) finds that legislators are not responsive to constituency preferences on trade. In the similar vein, Guisinger (2009) finds the salience of trade policy to be low even among voters predicted to be most affected by trade liberalization in the context of CAFTA-DR.[3] In a dynamic setting, we also find that legislators do not respond to public opinion on trade, thereby casting further doubt

[2] See Lake (2009), the critique of OEP by Oatley (2011) and the response by Chaudoin, Milner and Pang (2015).

[3] However, Kono (2008) provides cross-national evidence of a link between support for trade and (lower) trade barriers in democratic countries.

on the policy-relevance of mass trade preferences.

Hypotheses and Empirical Specification

We first examine whether there is responsiveness to their constituency, in line with recent evidence (Caughey and Warshaw, 2018; Warshaw, 2016) by testing Hypothesis 1:

Hypothesis 1: *Legislators are responsive to the median of their constituency.*

We also examine differential dynamic responsiveness to legislators' copartisan constituents;[4] despite mounting evidence of copartisan responsiveness in the House (Clinton, 2006) and Senate (Kastellec et al., 2015; Lax, Phillips and Zelizer, 2019), there is not much research on whether dynamic responsiveness is biased towards copartisans as well.

Hypothesis 2: *Legislators are more responsive to their copartisan constituents than to the median constituent.*

Let Y_{it} be legislator i's position on NAFTA on a five-point scale in time t. To mitigate concerns about reverse causality (i.e. elite positioning influencing public opinion), we examine the impact of the change in opinion between periods t and $t+1$ on the change in positioning between $t+1$ and $t+2$.[5] We also include a period fixed effect for each analysis. We analyze four periods: the two mentioned above, as well as the role of changes in opinion between January and March on changing positioning between March and June, and the influence of shifting constituency sentiment between March and June on positioning change between June and August.

[4]Fenno (1978) asserts that legislators think of their district as comprising distinct sub-constituencies.

[5]In the Appendix, we perform a more straightforward analysis that examines the relationship between shifts in opinion between periods t and $t+1$ and changes in positioning between t and $t+1$.

We estimate the following model to test Hypothesis 1:

$$Y_{i(t+2)} - Y_{i(t+1)} = (\beta_0 + \beta_1(PercentConstituencySupport_{t+1} - PercentConstituencySupport_t + \gamma_p)$$

Hypothesis 1 suggests that $\beta_1 > 0$. We estimate the following model to test Hypothesis 2:

$$\begin{aligned} Y_{i(t+2)} - Y_{i(t+1)} = (\beta_0 + \beta_1(&PercentConstituencySupport_t - PercentConstituencySupport_{t-1}) \\ &+ \beta_2(PercentCopartisanSupport_t - PercentCopartisanSupport_{t-1}) + \gamma_p) \end{aligned}$$

The second hypothesis suggests that $\beta_2 > \beta_1$, or that changes in copartisan support have a greater effect on legislator positioning than shifts in overall constituency support; this would constitute evidence for differential dynamic responsiveness.

Finally, we test whether members of Congress are more responsive to affluent voters, in line with the findings of Gilens (2012) (though see Lax, Phillips and Zelizer (2019) and Soroka and Wlezien (2008)).

Hypothesis 3: *Legislators are more responsive to their affluent constituents than to the median constituent.*

We can only examine responsiveness to the affluent in the Senate (shown in the appendix). We test the following model:

$$\begin{aligned} Y_{i(t+2)} - Y_{i(t+1)} = (\beta_0 + \beta_1(&PercentConstituencySupport_t - PercentConstituencySupport_{t-1}) \\ &+ \beta_2(PercentCopartisanSupport_t - PercentCopartisanSupport_{t-1})) \\ &+ \beta_3(PercentAffluentSupport_t - PercentAffluentSupport_{t-1}) + \gamma_p) \end{aligned}$$

Hypothesis 3 suggests $\beta_3 > \beta_1$, or that changes in affluent support have a greater effect on legislator positioning than shifts in overall constituency support.

The Case of NAFTA

NAFTA was signed on December 17, 1992, before President Clinton was sworn into office. During his candidacy, Clinton pledged to support NAFTA conditional on protection of labor and the environment. As President Clinton was sworn into office in January 1993, various anti-NAFTA groups raised the possibility of re-opening the NAFTA negotiation. In response, the Clinton administration pledged to negotiate supplemental agreements on labor, agriculture, and the environment. The tripartite negotiations for the side agreements started in March.[6] In a press conference on April 2nd, U.S. Trade Representative Mickey Kantor said that "a great number of MCs are waiting to see the supplemental agreements before they take a position on NAFTA."[7]

The administration was facing a Congress controlled by Democrats.[8] The Clinton administration actively rallied congressional Democrats as it was aware of the importance of securing the Democratic Party's support for NAFTA despite the party's loyalty to labor unions.

On September 28, President Clinton informed the House and Senate leadership of his intention to submit the NAFTA Implementation bill by November 1.[9] However, House members were quickly losing interest in NAFTA after the August recess. As of August 6, the number of House members with positive attitudes on NAFTA was 187, only 30 short of the majority. After the August recess, however, MCs became significantly more concerned about NAFTA, as the September 10 survey indicates that 20 House members who were previously supportive of NAFTA withdrew their support. For example, Jim Slattery (KA-2) commented that "Heard a lot of concerns expressed during meetings over the August recess." Similarly, the survey records that the number of undecided Senators soared in the first three weeks of September.[10]

In these adverse circumstances, the Clinton administration signed the labor and environmental

[6]Kantor, Serra Tap March 15 for Start of Talks on NAFTA Supplemental Pacts (1993, February 19), *Inside U.S. Trade*. Retrieved from `https://insidetrade.com/`.

[7]Kantor Predicts Approval of NAFTA, Side Deals for Early 1994 Implementation (1993, April 9), *Inside U.S. Trade*. Page. S7.

[8]The 103rd Congress was composed of one Independent, 176 Republicans, and 258 Democrats in the House of Representatives, and 43 Republicans and 57 Democrats in the Senate. The administration needed 217 votes in the House and 51 votes in the Senate to pass the implementation bill.

[9]*Inside U.S. Trade*, Oct 1, 1993. Page 16.

[10]*Inside U.S. Trade*, Oct 1, 1993. Page S-1.

side agreements to rally congressional Democrats. On September 14, the administration held a signing ceremony. At the ceremony, three former presidents—George H. W. Bush, Jimmy Carter, and Gerald Ford —appeared to endorse NAFTA and the side agreements.[11] The side agreements divided interest groups and NGOs into the pro-NAFTA and anti-NAFTA factions. On the labor front, major labor groups such as the AFL-CIO remained opposed to NAFTA. William Cunningham, the legislative representative of the AFL-CIO, said that "the environmental agreement is far stronger than the labor agreement."[12] Environmental groups were still divided evenly on the environmental side agreement: while major conservation NGOs such as the National Audubon Society and World Wildlife Fund came out in support of NAFTA, other prominent NGOs such as the Sierra Club and Friends of Earth were still opposed to NAFTA despite the side agreement.

Agriculture was another stumbling block. Particularly, members from Florida held strong concerns about the impact of the trade agreement on producers of sugar, citrus, and winter vegetables. In early November, the administration pledged to protect citrus and Florida winter vegetables (i.e. tomatoes, peppers, lettuces, and corn) from competition through the GATT, the Generalized Systems of Preferences and the Carribbean Basin Initiative. As for citrus and sugar, in particular, the administration exchanged side letters with Mexico to change NAFTA provisions. In response, the Florida Fruit & Vegetable Association pledged to lift its opposition to NAFTA, on November 11, as a result of the last-minute agreement.[13]

To sum up, the Clinton administration modified the NAFTA legislation to broaden the pro-NAFTA coalition in Congress. In response to the modifications, some key interest groups and advocacy groups shifted their positions on NAFTA. Although we do not directly test legislative responsiveness to shifting interest group preferences on NAFTA, we control for policy concerns in the analysis. As a result of this year-long executive-legislative exchange, the Clinton administration passed the NAFTA Implementation Act by 234-200 in the House (November 17) and by

[11]Remarks by Presidents Clinton, Bush, Carter, Ford and Vice President Gore in Signing of NAFTA Side Agreements (September 14, 1993). *U.S. Newswire*. Retrieved from NexisLexis.

[12]Testimony October 27, 1993 William J. Cunningham Legislative Representative AFL-CIO Senate Foreign Relations Foreign Policy NAFTA (October 27, 1993, Wednesday). *Federal Document Clearing House Congressional Testimony*. Retrieved from LexisNexis.

[13]Florida Growers Cut Deal to End Anti-NAFTA Stance (November 12, 1993). *Inside U.S. Trade*. Page. 13-14.

61-38 (1-NV) in the Senate (November 20).

Data

Independent variable

Our primary independent variable is the (change in) constituency public opinion, which is generated by using multi-level regression and post-stratification on survey data. We gathered public opinion surveys from 1993 that explicitly asked survey respondents if they support or oppose NAFTA. We use the surveys shown in Table 1, which are pooled together by time period. The estimation of district-level support for NAFTA is described in the next section.

Table 1: NAFTA Survey Data (1993)

Survey Source	**Survey Date**	**Sample Size**
Los Angeles Times	January 14-17	1,735
Gallup/CNN/USA Today	March 29-31	1,000
Yankelovich/Time Magazine/CNN	June 17-21	901
CBS News/NY Times/ Tokyo Broadcasting System	June 21-24,27	1,363
CBS News	August 2-3	870
Yankelovich/Time Magazine/CNN	September 8-9	1,108
NBC News/Wall Street Journal	September 10-13	1,006
CBS News/NY Times	September 16-19	1,136
ABC News	September 16-19	1,006
Times Mirror	September 24-27	1,529
Los Angeles Times	September 25-28	1,491
Gallup/CNN/USA Today	November 2-4	1,003
Yankelovich/Time Magazine/CNN	November 11	500
CBS News/NY Times	November 11-14	1,334

Outcome variable

Our outcome variable is the (change in) each legislator's position on NAFTA. To measure the dynamic change in congressional attitudes, we draw from a series of congressional surveys conducted by the U.S. Alliance for NAFTA (USA*NAFTA), *Congress Daily*, and *the Associated Press* throughout the year of 1993 (Table 2). The surveys rank each member's attitude on NAFTA on a scale from one to five (1 = support, 2 = leaning in favor, 3 = undecided/uncommitted, 4 = leaning opposed, 5 = oppose). In our empirical analysis, we reverse code this measure such that higher values indicate higher levels of support.

To capture members' early attitudes on NAFTA in March, June, and September 1993, we exploit a set of confidential surveys conducted by the USA*NAFTA coalition. The USA*NAFTA is a coalition of more than 1,100 pro-NAFTA business groups. They conducted internal and confidential surveys to gauge congressional attitudes on NAFTA running up to the final congressional votes on the NAFTA Implementation Act. The surveys were conducted based on "visits to legislators in Washington, and in their districts by coalition members (Inside U.S. Trade April 9, 1993: S-2)." The coalition began the polling process in March 1993, until the final House votes on the NAFTA Implementation Act in November 17, 1993. We retrieved the surveys from *Inside U.S. Trade*, a trade journal. Because the coalition treated the survey results as highly confidential, the journal featured the legislative surveys only twice in the year of 1993: March 11 survey in the issue published on April 9, 1993, and September 20 survey on its October 1 issue. In addition, we retrieved the USA*NAFTA's confidential surveys of both House members and Senators, dated June 16, from the Clinton Digital Library Archives. Although other pollsters conducted similar vote counts closer to November, the USA*NAFTA surveys provide a rare opportunity to gauge members' baseline attitudes on NAFTA after the agreement was signed among Canada, Mexico, and the U.S. in December 1992. One concern about this set of surveys might be that legislator positions are motivated by social desirability bias. Legislators might have taken artificial positions in favor of NAFTA (i.e. "cheap talk") to please the U.S. Alliance for NAFTA, especially because the surveys were confidential. To negate these concerns, we assess the relationship between the leg-

islator scores on the USA*NAFTA surveys and legislator signing of public pro- and anti-NAFTA letters in the Appendix. We find the expected relationships for all four letters in every wave of the legislator survey, indicating that social desirability did not bias the legislator scores. We also find the expected relationship between the legislator scores and anti-NAFTA coalition membership.[14]

On September 28, the Clinton administration informed the House and Senate leadership of its intention to submit the NAFTA Implementation Act in November. Since the notification, major media pollsters (e.g. *the Associated Press*) began conducting legislative surveys. Due to the availability of other media-led legislative polling by the time, the USA*NAFTA survey was not featured in *Inside U.S. Trade*. As such, we use legislative surveys conducted by *Congress Daily* and the *Associated Press* for the months of October and November. These surveys rank House members' attitudes on NAFTA on the same scale as the USA*NAFTA survey (Yes; Leaning Yes; Uncommitted; Leaning No; No).[15] We can confirm the reliability of the November positioning data, as it closely matches subsequent roll call voting (there is a correlation of .863 between the November positioning scores and the actual roll call votes in the House).

Our data search process covered both publicly available media sources and confidential historical records. First, we explored the media coverage of NAFTA in the year of 1993 through *LexisNexis* database. Through this investigation, we retrieved the October and November surveys of House members' attitudes on NAFTA. Second, we examined all the issues of *Inside U.S. Trade*, the major trade journal that extensively covered the NAFTA legislation process. In this investigation of the entire issues published in 1993, we retrieved the USA*NAFTA survey conducted in March and September. Lastly, we thoroughly investigated the Clinton Presidential Records. As the Clinton administration coordinated closely with the USA*NAFTA coalition, the coalition shared the June 16 survey results with the administration. The survey data is now publicly available

[14]Furthermore, original legislator positions (March) are positively correlated with the economic interests of the district (proxied by the proportion of college graduates in the district, correlation =.23), indicating that the March survey is unlikely to suffer from social desirability bias.

[15]The Congress Daily results are based on "telephone calls to the offices of almost 400 members, along with recent public statements by some legislators." (October 22, 1993). Complete Results Of CongressDaily's NAFTA Poll. National Journal's CongressDaily.

Table 2: Legislator Survey Data (1993)

Survey Date	Source
March 11, 1993	U.S. Alliance for NAFTA (Retrieved from Inside U.S. Trade)
June 16, 1993	U.S. Alliance for NAFTA (Retrieved from the Clinton Presidential Library Archive)
September 20, 1993	U.S. Alliance for NAFTA (Retrieved from Inside U.S. Trade)
October, 1993	Congress Daily (Retrieved from National Journals Congress Daily)
November 15, 1993	The Associated Press (Retrieved from USA Today)

through a Freedom of Information Act request.[16]

Controls: Members' policy concerns

We control for changing aspects of the NAFTA legislation. The Clinton administration revised the NAFTA Implementation Act to expand the pro-NAFTA coalition in Congress: they negotiated labor and environment side agreements with Mexico and Canada and exchanged side letters on agriculture with Mexico. It is worth emphasizing that these adjustments were designed to sway specific members of Congress. For example, the side letter on sugar was designed to gain support from members in Florida. If members' change in their NAFTA attitudes were responses to these issue-specific policy adjustments independent of their broader constituents' attitudes, it is important to consider which members would be more likely to be swayed by the president's policy adjustments.[17]

The USA*NAFTA surveys allow us to control for these specific policy concerns on labor, agriculture, and the environment. To control for the potential effects of the side agreements, we exploit the open-ended comments/concerns section in the USA*NAFTA surveys. The USA*NAFTA surveys record each member's concerns about NAFTA in the comments/concerns section. For example, the then House Democrats representing Hawaii, Neil Abercrombie (D-1) and Patsy Mink (D-2), listed "sugar" as their concerns about NAFTA.

[16]In the June 16 survey, there are 46 missing observations (24 House members in New York, 18 in Texas, three in Tennessee, and one in California). Except for California, the missingness is due to the accidental omission of two pages of the House survey in the Presidential Records. The information on California's 17th district is missing because the seat was vacant in the survey time period; Missing data in the March survey: there are eight missing observations in this survey. Three members–Sam Farr, Benni Thompson, and Peter Barca–assumed office after the survey date. The five remaining missing observations were randomly removed from the primary source. These are four Wisconsin districts (6th-9th districts), and Wyoming.

[17]Of course, public opinion might be affected by these issue-specific policy adjustments. However, it is possible that the effect of the policy adjustments (e.g. side agreements) on members was more immediate than the effect on the public. As such, it is important to consider which members were more likely to be swayed by these policy adjustments.

In particular, we coded comments by legislators as to their concerns about NAFTA in the survey conducted on June 16. Given that the Clinton administration negotiated the side agreements on labor, sugar, and the environment, we can control for whether legislators' concerns on these issues were addressed by the side agreements. `Environment`, `Jobs`, and `Sugar` are binary variables that capture members' concerns about those issues. In June, 34.8% of the House and 35.3% of the Senate said that they had concerns about NAFTA's impact on jobs. In the same period, 19.5% of House members and 27.3% of Senators expressed concerns about NAFTA's environmental impact. Regarding sugar, only 4.8% of the House and 12.1% of the Senate expressed concerns. These members are geographically concentrated: Senators in Idaho, Louisiana, North Dakota, and Hawaii unanimously expressed their concerns on sugar. Fifteen out of twenty-three Florida Representatives expressed concerns about agriculture products including sugar and fruits; four out of seven Louisiana representatives expressed specific concerns about sugar.

Estimation

To measure public opinion on NAFTA at the constituency level, we use multi-level regression and post-stratification (MRP). This method has two steps. In the first step, using survey data, we regress respondents' support for NAFTA on various individual-level demographic characteristics, specifically gender, education, and race, and a constituency-level intercept, which is itself modeled as a function of constituency-level predictors, including the proportion of senior individuals in the district, median income, percentage of agriculture workers, and percent foreign born. We include the percentage of senior individuals in a district and median income because age and income are often conceived as being strong predictors of political preferences. Moreover, the percent of agriculture workers is included because occupation predicts political preferences, particularly on trade. Finally, immigration status is also predictive of political preferences. Given the results of the multi-level regression, we calculate predicted probabilities for each demographic-geographic type in our specification and weight these predicted probabilities by their recorded value in the Census.

One issue here is that the Census does not have data on party affiliation. In order to construct estimates that are broken down by partisanship, one has to estimate a breakdown of partisanship by our various demographic variables first. Specifically, the Census only has the number of white women between the ages of 18 and 29 living in the fifth district of New Jersey, but we also need the number of white Republican women between the ages of 18 and 29 living in the fifth district of New Jersey (in addition to the estimates for Democrats and Independents). Thus, we estimate a second MRP where party affiliation is the dependent variable. We first estimate the probability of identifying as a Democrat on our slate of independent variables. Then, we throw out the Democrats and estimate the probability of being a Republican (where the baseline is being an Independent) and deduce the proportion that fall into all three partisan categories using these two regressions.[18]

Moreover, one other issue in calculating estimates at the House level is that polls do not often include district-level indicators. Instead, they only provide state-level descriptors. To deal with this, we use an existing method called "cross-level MRP" (Krimmel, Lax and Phillips, 2016), where state-level values are used in the multi-level regression stage and district-level values are used to post-stratify. For example, one district-level predictor we use is median income. Since we do not know the district that a particular respondent belongs to, we instead use median income for the state that the respondent belongs to instead in the multi-level regression. When post-stratifying, however, we use the coefficient for median income from the regression and *district-level* median income. Thus, we are modeling the geographic variables at the state level but using district values when post-stratifying to extrapolate from the geographic patterns in the data to all districts.

We regress support for NAFTA on several individual-level and state-level predictors. Denote support for NAFTA by Y_i for a given individual i. This value is either 1 if the individual supports the trade agreement or 0 if the individual opposes it.[19] The individual-level predictors are race ("White," "Black," "Hispanic," and "Other"), education ("No HS," "High school graduate," "Some college," and "College graduate,"), and gender ("Female" and "Male"). Formally, we use the

[18] In order to ease concerns that starting our regression with affiliating as a Democrat as our dependent variable may affect results, we conduct the same analysis, with Republicans as our starting dependent variable and average the estimates that arise from the two approaches.

[19] Respondents who said don't know or that they hadn't heard enough are counted as missing.

following specification:

$$Pr(Y_i = 1) = logit^{-1}(\beta^0 + \beta^{female} * female_i + \alpha^{race}_{k[i]} + \alpha^{educ}_{l[i]} + \alpha^{party}_{n[i]} + \alpha^{state}_{j[i]} + \alpha^{poll}_{p[i]})$$

where k denotes the category of race that respondent i falls into, l denotes the category of education i belongs to, n denotes the party i belongs to, j denotes the state that i resides in, and p denotes the poll that i is responding to. The district intercepts are modeled as a function of district-level predictors:

$$\alpha^{district}_j \sim N(\alpha^{state}_{m[j]} + \beta^{med.income} * med.income_j + \beta^{senior.prop} * senior.prop_j + \beta^{agriculture.prop} * agriculture.prop_j + \beta^{foreign.prop} * foreign.prop_j, \sigma^2_{district})$$

with district j located in state $m[j]$. To clarify, the variance of the district coefficient is constant across all districts. Furthermore, the following individual-level and district-level coefficients are modeled as follows:

$$\begin{aligned}
\alpha^{race}_k &\sim N(0, \sigma^2_{race}) \quad \text{for} \quad k = 1, ..., 4 \\
\alpha^{educ}_l &\sim N(0, \sigma^2_{educ}) \quad \text{for} \quad l = 1, ..., 4 \\
\alpha^{party}_n &\sim N(0, \sigma^2_{party}) \quad \text{for} \quad n = 1, ..., 3 \\
\alpha^{poll}_p &\sim N(0, \sigma^2_{poll}) \quad \text{for} \quad p \in \mathbb{R}_+ \\
\alpha^{state}_m &\sim N(0, \sigma^2_{state}) \quad \text{for} \quad m = 1, ..., 51
\end{aligned}$$

The state variable includes all 50 states plus the District of Columbia. Using these results, we calculated the predicted probability of supporting the policy for each demographic-geographic type and used Census data to post-stratify. Given 436 districts (435 U.S. House districts plus the District of Columbia), 2 gender categories, 4 race groups, 5 education groups, and 3 parties, we have $436 * 2 * 4 * 4 * 3 = 41,856$ demographic-geographic types. Using the model estimated

above for respondent preferences, we calculated predicted probabilities for each of these $41,856$ categories.[20]

We weight these probabilities by the recorded population level listed in the Census. Thus, if d denotes a particular congressional district, $\hat{\theta}_j$ is the predicted probability for a given cell j, N_j is the Census population size for cell j, and $\hat{y}_d$ is the proportion of individuals supporting a given policy for district d, then

$$\hat{y}_d = \frac{\sum_{j \in d} N_j \hat{\theta}_j}{\sum_{j \in d} N_j}$$

Legislator Opinion and Positioning on NAFTA Over Time

Below, we provide boxplots of district preferences on NAFTA by partisan sub-constituency (Republicans, Independents and Democrats). We find evidence of a decline in support, especially among Republicans, from January to March, but increased support from June to September and from September to October. In January, Republicans are more supportive than Democrats; by November (the month the bill was voted on), differences across partisan groups in levels of support and geographic dispersion were relatively minor, with Democrats slightly more supportive.

[20] For the poll coefficients, we take the average of the intercepts.

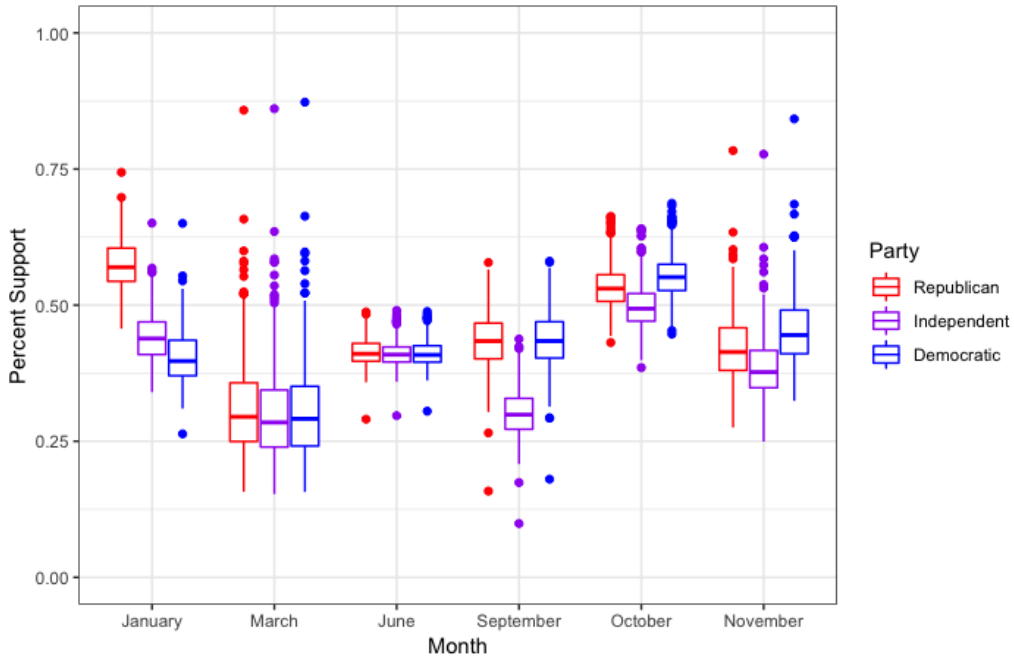

Figure 1: District Preferences on NAFTA by Partisanship

In parallel, we visualize boxplots of member preferences on NAFTA by partisan affiliation. Two points are noteworthy. First, between January and March, we observe a rather persistent partisan divide among legislators (Figure 2), but differences in public opinion between Republicans and Democrats have disappeared (Figure 1), a pattern which has largely persisted until November. The disconnect between constituency preferences and legislative positioning points to the possibility that legislators might have been responding to special interest groups or advocacy groups with extreme partisan preferences. Simultaneously, it is possible that the public initially relied on their partisan heuristics to evaluate NAFTA in January, and adjusted their positions in March as they were exposed to more information on NAFTA. For example, the number of news articles on NAFTA almost doubled from January to March; In September, the NAFTA coverage was approximately six times of the January coverage.[21]

Second, we observe a linear upward trend in public attitudes on NAFTA from March until Octo-

[21] We searched for news articles that contain "NAFTA" and "trade" in the year of 1993, and calculate the monthly count of those articles. NexisLexis, access date: November 25, 2019.

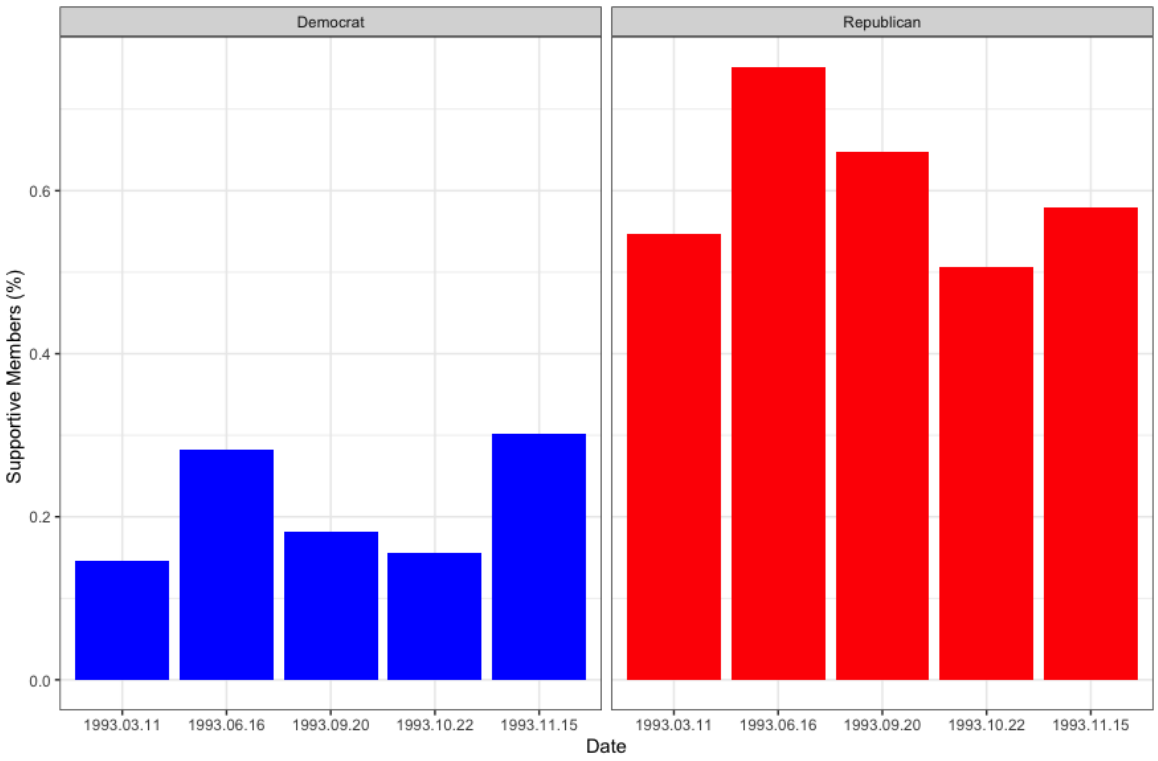

Figure 2: House Members' Positioning on NAFTA by Party (Supporters - Members who favor or lean in favor of NAFTA)

ber, whereas legislators tended to temporarily decrease their support after June until they increased their support from October to November. For one thing, the Clinton administration finalized labor and environmental side agreements in September, hoping to increase public support for NAFTA. As the upward trend in September and October in Figure 1 shows, the side agreements appear to have been well received by the general public. However, some legislators with ties to labor and environmental groups were opposed to the side agreements due to their weak enforcement mechanisms. This may indicate that the public and legislators viewed the NAFTA side deals with different levels of sophistication. Also, there were high-level logrolling attempts detached from the public. In July, 105 House Democrats signed a letter urging the president to withhold submission of the NAFTA Implementation Act until the administration passed health care reform legislation.[22] Pro-health care legislators strategically linked NAFTA to healthcare despite the lack of substantive relevance of the two issues, expecting to expedite healthcare reform. However, it is unlikely that this level of cross-issue strategic thinking trickled down to the general public.

Taken together, the descriptive trends point to the possibility that dynamic responsiveness to constituency opinion might be elusive. Considering the general trend, the next section systematically explores the trace of dynamic responsiveness by controlling for these high-level legislative policy concerns (i.e. which legislators had strong preferences for the labor and environmental accords).

Results

We now turn to examining whether changes in constituency and sub-constituency opinion predict corresponding shifts in positioning by legislators. In the first column of Table 3, we find that legislators are not responsive to their district. A one percent increase in district support for NAFTA is associated with a .001 increase in support for NAFTA on the 1-5 scale, a minuscule effect that does not approach statistical (or substantive) significance. In the Appendix, we perform the same

[22] July 26, 1993. "Request that the president's health care reform proposal be considered by Congress before the North American Free Trade Agreement." Clinton Presidential Records.

analysis with matched time periods rather than lagged time periods (between opinion change and position change) and find the same result. Moreover, Table 3 shows that legislators are more responsive to the median of the district than to copartisans, and this difference in responsiveness is statistically significant.

Table 3: Constituency Opinion and Legislator Positioning

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	0.001	0.010
	(0.004)	(0.007)
Change in Copartisan Support		-0.009^{*}
		(0.005)
Period Fixed Effects	Yes	Yes
Observations	1,637	1,637
Adjusted R^2	0.067	0.068
Note:	*p<0.1; **p<0.05; ***p<0.01	

Figure 3 shows the relationship between change in constituency support and change in legislator support in each period, by party (Republican legislators in red, Democratic legislators in blue).[23] There exists responsiveness in the first period, though this relationship is not sizable; in other periods, there is no evidence of dynamic responsiveness by legislators of either party.

[23]The title of each plot indicates the middle-month for each analysis; for example, we label the visual that plots opinion change from September to October on the X axis and legislator positioning change from October to November on the Y axis as "October."

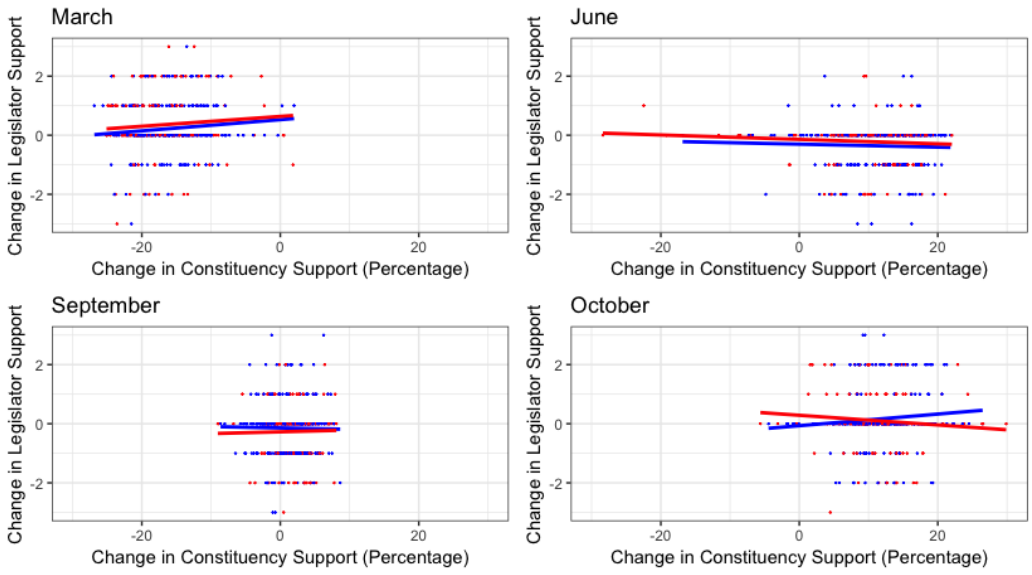

Figure 3: *Change in Overall Constituency Opinion and Change in Legislator Support*

Disaggregating by Party

We now disaggregate by party to examine whether there is differential dynamic responsiveness by Republicans and Democrats.[24] We find no evidence of responsiveness to any sub-constituency by members of the House, as shown in Table 4. Republicans, however, are biased away from copartisans towards the median of their district. In the Appendix, we directly assess whether legislators are more responsive to the affluent by examining the Senate. We find no evidence that Senators are responsive to the shifting preferences of the affluent.

Disaggregating by Period

We now disaggregate the results by period. In Table 6, we find no evidence that legislators are more responsive to co-partisans constituents in any period. In March, legislators are more responsive to the median than to copartisans.

[24]For more on differential responsiveness, see Gilens (2012); Lax, Phillips and Zelizer (2019).

Table 4: Constituency Opinion and Legislator Positioning (Democrats)

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	0.007	0.012
	(0.006)	(0.016)
Change in Copartisan Support		−0.005
		(0.013)
Period Fixed Effects	Yes	Yes
Observations	967	967
Adjusted R^2	0.068	0.068
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table 5: Constituency Opinion and Legislator Positioning (Republicans)

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	−0.004	0.013
	(0.006)	(0.011)
Change in Copartisan Support		−0.017*
		(0.009)
Period Fixed Effects	Yes	Yes
Observations	670	670
Adjusted R^2	0.073	0.077
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table 6: Copartisan Constituency Opinion and Legislator Positioning by Period

	Dependent variable:			
	Change in Legislator Support			
	March	June	September	October
Change in Overall Support	0.027**	0.003	−0.010	0.010
	(0.012)	(0.011)	(0.036)	(0.018)
Change in Copartisan Support	−0.010*	−0.009	0.003	−0.005
	(0.006)	(0.009)	(0.032)	(0.016)
Observations	381	388	434	434
Adjusted R^2	0.008	0.002	−0.004	−0.004
Note:	*p<0.1; **p<0.05; ***p<0.01			

Accounting for Policy Concerns

The relationship between changes in public opinion and shifts in legislator positioning may be confounded by some legislators having specific policy concerns that are eventually addressed by side-agreements. A legislator might become more supportive of NAFTA because their policy concern is being addressed by a side-agreement, not because their constituency has become more supportive. In the following analyses, we control for the three policy areas addressed by side-agreements: labor, the environment, and sugar. We find no evidence that controlling for these policy concerns shifts the relationship between opinion and positioning in either period.

Table 7: Legislator Change between June and September (Accounting for Policy Concerns)

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	−0.007	0.002
	(0.006)	(0.011)
Change in Copartisan Support		−0.009
		(0.009)
Job Concerns (June)	−0.009	−0.006
	(0.092)	(0.092)
Environmental Concerns (June)	0.054	0.052
	(0.110)	(0.110)
Sugar Concerns (June)	−0.157	−0.149
	(0.180)	(0.181)
Observations	388	388
Adjusted R^2	−0.003	−0.004
Note:	*p<0.1; **p<0.05; ***p<0.01	

Discussion

Our analysis does not find evidence of legislative adaptation to shifting constituency opinion. There are two other plausible mechanisms through which legislators may update their positions: party pressure and interest group lobbies.

Party discipline played a less prominent role. Primarily, the Democratic Party's strong ties with labor groups were an important obstacle for the executive branch in rallying the Democratic Party's support for NAFTA. At the same time, some Democrats were supportive of the bill due

Table 8: Legislator Change between September and October (Accounting for Policy Concerns)

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	−0.007	−0.009
	(0.014)	(0.036)
Change in Copartisan Support		0.002
		(0.032)
Job Concerns (September)	0.036	0.036
	(0.100)	(0.101)
Environmental Concerns (September)	−0.008	−0.008
	(0.124)	(0.124)
Sugar Concerns (September)	−0.028	−0.028
	(0.209)	(0.210)
Observations	434	434
Adjusted R^2	−0.008	−0.011
Note:	*p<0.1; **p<0.05; ***p<0.01	

to their loyalty to President Clinton. Due to the split loyalty to labor groups and the president, the Democratic Party leadership largely withdrew and left Democrats to vote their conscience.[25] When it comes to weak party discipline, NAFTA was not an isolated incident. Broadly speaking, party cohesion was already on the decline in the area of trade politics in Congress. Based on congressional votes on trade bills from 1945 to 1994, Hiscox (2002) shows that the Democratic Party's cohesion on trade bills decreased from 74% in 1955 to 1.8% in 1993 when NAFTA was ratified. Relatively speaking, the Republican Party's cohesion scores declined less dramatically from 67% to 55% in the same period. That said, the over-time trend shows that trade is one of the few areas in which party pressure has become less relevant.

Qualitative evidence indicates that interest groups and vocal minorities might have played a more important role in legislative adaptation than party pressure and public opinion. Especially closer to the final vote, we find evidence that members tended to consider the preferences of interest groups or vocal voters more importantly than those of their overall constituencies. In the September survey, members frequently mention that they need to hear from businesses in their districts.[26] For example, Representative Anna Eshoo (D-14) said that she "wants businesses to

[25]North American Free Trade Agreement (NAFTA) implementation, 1993-1994 legislative chronology. (1997). Congress and the nation, 1993-1996 (Vol. 9). Washington, DC: CQ Press. Retrieved from here.

[26]U.S.A.-NAFTA Sept. 20 Survey (October 1, 1993). *Inside U.S. Trade*. p.S2-S13.

communicate support to her."[27] Similarly, Representative Marge Roukema (R-5) commented that she was "still undecided and needs more signals from industry to justify a pro-NAFTA decision."[28] Furthermore, based on members' comments, they seem to prioritize the preferences of vocal voters who submit letters and make phone calls, who may have distinct preferences from the overall constituency. Specifically, Representative William Paxon (R-27) said that he was "hearing a lot from Perot (voters)."[29] Representative Julian Dixon (D-32) said he didn't "receive pro-NAFTA letters from constituents." Altogether, these observations raise the possibility that adaptation occurs through responsiveness to interest groups and vocal minorities, rather than to public opinion.

In terms of case selection, NAFTA is arguably an easy case for dynamic responsiveness, as it was one of the most politically salient trade agreements in recent memory. The public perhaps had better knowledge on NAFTA than any other trade agreements that the U.S. government negotiated, and an extensive public debate dominated the news cycle. Because legislators did not adapt their positions on NAFTA in accordance with shifting constituency opinion in this highly salient case, we can infer that incumbent adaptation is even less likely in other less-salient trade agreements. As such, our findings might be generalizable to explain other trade agreements. However, our findings may not generalize to other issue areas, as Pomirchy and Schonfeld (2019) find that members of the House are not responsive to their constituency (or copartisan constituencies) on trade but they are on other foreign policy issues like security and immigration. Our findings do, however, cast further doubt on the importance of public opinion on trade (i.e. mass trade preferences) in understanding the formation of trade policy.

Conclusion

Despite its first order importance for normative democratic theory, the relationship between shifting constituency opinion and the positioning of representatives has proved elusive. Existing studies

[27] *Ibid.* See page. S3.
[28] *Ibid.* See page. S7.
[29] *Ibid.* page. S7.

had not assessed whether there is dynamic responsiveness while controlling for the issue agenda, nor had they examined differential dynamic responsiveness in any context.

In this paper, we exploited unique data on the positioning of legislators on NAFTA at various points in time leading up to the November roll-call vote. We also generated original estimates of constituency (and sub-constituency) level preferences on NAFTA at various different times in 1993. Our approach allowed us to hold the particular legislative environment and policy constant while assessing evolving constituency (and sub-constituency) opinion and legislator positioning. We find no evidence of dynamic responsiveness to the median voter, nor towards particular sub-constituencies like copartisans or affluent constituents.

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Appendix

Social Desirability Bias Tests

Because the USA*NAFTA coalition surveys were conducted by a pro-NAFTA association, one might be concerned about social desirability bias in members' responses in the March, June, and September surveys. For example, an anti-NAFTA member might have been inaccurately recorded as supportive, because the member knew that the canvasser supported NAFTA. Because the surveys

were confidential, members might have been more prone to giving responses desired by canvassers. To check if there is any systematic bias of this sort in these surveys, we conduct additional tests.

In particular, we match whether their early public positioning on NAFTA matches with their survey responses. For public positioning, we exploit two data sources: anti-NAFTA caucus membership and members' endorsement of Dear Colleague letters. First, the June survey records whether individual House members belong to the anti-NAFTA caucus. If those anti-NAFTA caucus members' responses are indistinguishable from those of non-members, it indicates that the surveys are prone to social desirability bias. Second, we use members' endorsements of various Dear Colleague letters. For example, Senator Donald Riegle of Michigan circulated a Dear Colleague letter in opposition to NAFTA. The letter was endorsed by twenty-one Democratic Senators. If members were prone to social desirability bias during the surveys, we expect to find the survey responses of the members who endorsed the anti-NAFTA letter to be indistinguishable from the responses of other Democratic Senators who did not endorse the letter.

Based on the tests, we do not find any sign of social desirability bias in our surveys. We find strong negative associations between anti-NAFTA caucus membership and members' attitudes on NAFTA in our surveys (See Table 10). Similarly, our results on members' endorsements of anti-NAFTA Dear Colleague letter indicate that members' survey responses are truthful: As expected, we find strong negative associations between House Democrats' endorsements of an anti-NAFTA letter addressed to President Clinton and their survey responses on their support for NAFTA (Table 11, See Table 12 for the Senate Results). Although we are less concerned about pro-NAFTA members' exposure to social desirability bias, we conduct the same set of analyses based on member endorsements of pro-NAFTA Dear Colleague letters in the House and the Senate (Table 13 and 14). We find strong positive correlations between their endorsements of the pro-NAFTA letters and their pro-NAFTA attitudes recorded in the surveys.

Table 9: Anti-NAFTA Coalition Membership and Attitudes on NAFTA (House members)

	Dependent variable - Support: 1 (Oppose) -5 (Support)		
	March	June	September
	(1)	(2)	(3)
Anti-NAFTA Caucus	-1.474^{***}	-2.335^{***}	-2.065^{***}
	(0.266)	(0.308)	(0.331)
Constant	3.052^{***}	3.388^{***}	3.065^{***}
	(0.059)	(0.068)	(0.073)
Observations	381	388	388
R^2	0.075	0.129	0.092
Adjusted R^2	0.072	0.127	0.089
Residual Std. Error	1.131 (df = 379)	1.310 (df = 386)	1.405 (df = 386)
F Statistic	30.654^{***} (df = 1; 379)	57.394^{***} (df = 1; 386)	39.011^{***} (df = 1; 386)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 10: Anti-NAFTA Dear Colleagues Letter and Attitudes on NAFTA Among House Democrats

	Dependent variable - Support: 1 (Oppose) -5 (Support)		
	March	June	September
	(1)	(2)	(3)
Democrats' Letter	-0.872^{***}	-1.071^{***}	-0.942^{***}
	(0.131)	(0.170)	(0.174)
Constant	2.731^{***}	3.025^{***}	2.613^{***}
	(0.070)	(0.090)	(0.092)
Observations	224	227	227
R^2	0.166	0.150	0.115
Adjusted R^2	0.162	0.146	0.111
Residual Std. Error	0.888 (df = 222)	1.152 (df = 225)	1.179 (df = 225)
F Statistic	44.039^{***} (df = 1; 222)	39.730^{***} (df = 1; 225)	29.313^{***} (df = 1; 225)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 11: Anti-NAFTA Dear Colleagues Letter and Attitudes on NAFTA Among Democratic Senators

	Dependent variable - Support: 1 (Oppose) -5 (Support)	
	June	September
	(1)	(2)
Riegle Letter	-1.562^{***}	-1.433^{***}
	(0.273)	(0.260)
Constant	3.324^{***}	3.147^{***}
	(0.169)	(0.161)
Observations	55	55
R^2	0.382	0.364
Adjusted R^2	0.370	0.352
Residual Std. Error (df = 53)	0.983	0.937
F Statistic (df = 1; 53)	32.739^{***}	30.342^{***}
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 12: Pro-NAFTA Dear Colleagues Letter and Attitudes on NAFTA Among House Democrats

	Dependent variable - Support: 1 (Oppose) -5 (Support)		
	March	June	September
	(1)	(2)	(3)
Wyden-Matsui Letter	0.904^{***}	1.278^{***}	1.672^{***}
	(0.158)	(0.200)	(0.188)
Constant	2.321^{***}	2.497^{***}	2.053^{***}
	(0.067)	(0.084)	(0.079)
Observations	224	227	227
R^2	0.128	0.153	0.260
Adjusted R^2	0.124	0.149	0.257
Residual Std. Error	0.908 (df = 222)	1.150 (df = 225)	1.078 (df = 225)
F Statistic	32.589^{***} (df = 1; 222)	40.652^{***} (df = 1; 225)	79.234^{***} (df = 1; 225)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 13: Bi-partisan Pro-NAFTA Dear Colleagues Letter and Attitudes on NAFTA Among Senators

	Dependent variable - Support: 1 (Oppose) -5 (Support)	
	June	September
	(1)	(2)
Bradley-DeConcini Letter	1.699***	1.753***
	(0.547)	(0.550)
Constant	3.301***	3.247***
	(0.135)	(0.135)
Observations	99	99
R^2	0.090	0.095
Adjusted R^2	0.081	0.085
Residual Std. Error (df = 97)	1.299	1.305
F Statistic (df = 1; 97)	9.648***	10.160***
Note:		*p<0.1; **p<0.05; ***p<0.01

Matched (Not Lagged) Analysis

We now conduct an analysis that does not account for reverse causality; instead, we perform a more straightforward assessment of the relationship between constituency opinion and legislator positioning. We examine whether opinion change from t to $t+1$ is associated with legislator position change from t to $t+1$. We again obtain null findings; there is no evidence that increases

in district support are associated with greater support for NAFTA by the district representatives. In Figure 4, we see a horizontal relationship between constituency opinion and legislator support for each party and in each period.

Table 14: Constituency Opinion and Legislator Positioning (Matched Time Periods)

	Dependent variable:	
	Change in Legislator Support	
Change in Overall Support	−0.004	−0.008
	(0.004)	(0.008)
Change in Copartisan Support		0.003
		(0.007)
Period Fixed Effects	Yes	Yes
Observations	1,637	1,637
Adjusted R^2	0.067	0.067
Note:	*p<0.1; **p<0.05; ***p<0.01	

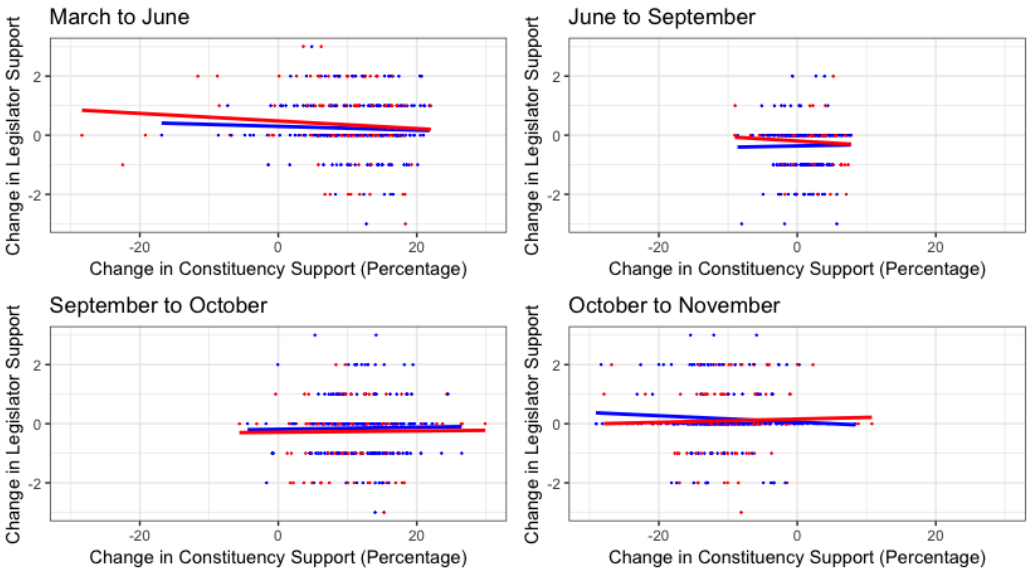

Figure 4: *Change in Overall Constituency Opinion and Change in Legislator Support (Matched)*

State MRP Estimates (for the Senate)

To measure public opinion on NAFTA at the state level, we use MRP as before with some small differences in the empirical specification, given the more granular data that the Census offers. We regress support for NAFTA on several individual-level and state-level predictors. Denote support

for NAFTA by Y_i for a given individual i. This value is either 1 if the individual supports the trade agreement or 0 if the individual opposes it.[30] The individual-level predictors are race ("White," "Black," "Hispanic," and "Other"), education ("No HS," "High school graduate," "Some college," "College graduate," and "Post-grad"), gender ("Female" and "Male"), age ("18-29," "30-45," "45-60," and "Over 60"), and income ("Less than 10,000," "10,000-14,999," "15,000-19,999," "20,000-29,999," "30,000-49,999," "50,000-74,999," and "Over 75,000"). Formally, we use the following specification:

$$Pr(Y_i = 1) = logit^{-1}(\beta^0 + \beta^{female} * female_i + \alpha^{race}_{k[i]} + \alpha^{educ}_{l[i]} + \alpha^{party}_{n[i]} + \alpha^{state}_{j[i]} + \alpha^{age}_{q[i]} + \alpha^{income}_{r[i]} + \alpha^{poll}_{p[i]})$$

where k denotes the category of race that respondent i falls into, l denotes the category of education i belongs to, n denotes the party i belongs to, j denotes the state that i resides in, q denotes the age category of i, r denotes the i's income category, and p denotes the poll that i is responding to.[31] The state intercepts are modeled as a function of state-level predictors:

$$\alpha^{state}_j \sim N(\beta^{med.income} * med.income_j + \beta^{senior.prop} * senior.prop_j + \beta^{agriculture.prop} * agriculture.prop_j + \beta^{foreign.prop} * foreign.prop_j, \sigma^2_{state})$$

To clarify, the variance of the state coefficient is constant across all states. Furthermore, the fol-

[30] Respondents who said don't know or that they hadn't heard enough are counted as missing.

[31] The poll variable is only included when there are multiple polls being pooled together.

lowing individual-level and state-level coefficients are modeled as follows:

$$\begin{aligned}
\alpha_k^{race} &\sim N(0, \sigma_{race}^2) \qquad \text{for} \quad k = 1, ..., 4 \\
\alpha_l^{educ} &\sim N(0, \sigma_{educ}^2) \qquad \text{for} \quad l = 1, ..., 5 \\
\alpha_n^{party} &\sim N(0, \sigma_{party}^2) \qquad \text{for} \quad n = 1, ..., 3 \\
\alpha_q^{age} &\sim N(0, \sigma_{age}^2) \qquad \text{for} \quad q = 1, ..., 4 \\
\alpha_r^{income} &\sim N(0, \sigma_{income}^2) \qquad \text{for} \quad r = 1, ..., 7 \\
\alpha_p^{poll} &\sim N(0, \sigma_{poll}^2) \qquad \text{for} \quad p \in \mathbb{R}_+ \\
\alpha_m^{state} &\sim N(0, \sigma_{state}^2) \qquad \text{for} \quad m = 1, ..., 50
\end{aligned}$$

Using these results, we calculated the predicted probability of supporting the policy for each demographic-geographic type and used Census data to post-stratify. Given 51 states (50 states plus the District of Columbia), 2 gender categories, 4 race groups, 5 education groups, 4 age groups, 7 income categories, and 3 parties, we have $51 * 2 * 4 * 5 * 7 * 4 * 3 = 171,360$ demographic-geographic types. Using the model estimated above for respondent preferences, we calculated predicted probabilities for each of these $171,360$ categories.[32]

We weight these probabilities by the recorded population level listed in the Census. Thus, if s denotes a particular state, $\hat{\theta}_j$ is the predicted probability for a given cell j, N_j is the Census population size for cell j, and $\hat{y}_s$ is the proportion of individuals supporting a given policy for state s, then

$$\hat{y}_s = \frac{\sum_{j \in s} N_j \hat{\theta}_j}{\sum_{j \in s} N_j}$$

Senate Analysis

We now examine the relationship between constituency opinion (states) and senator position-

[32] For the poll coefficients, we take the average of the intercepts.

ing. Only two of the legislator surveys include Senators (June and September), so we analyze the relationship between changes in opinion between March and June and shifts in Senate positioning between June and September. We find no evidence of positive dynamic responsiveness to any constituency or sub-constituency.

Table 15: Constituency Opinion and Legislator Positioning (Senate)

	Dependent variable:		
	Change in Legislator Support		
	(1)	(2)	(3)
Change in Overall Constituency Support	0.011	0.043	0.060
	(0.012)	(0.064)	(0.064)
Change in Copartisan Constituency Support		−0.031	−0.046
		(0.062)	(0.062)
Change in Affluent Constituency Support			−0.012*
			(0.006)
Constant	−0.167	−0.181	−0.179
	(0.134)	(0.137)	(0.136)
Observations	99	99	99
R^2	0.009	0.011	0.048
Note:	*p<0.1; **p<0.05; ***p<0.01		

Disaggregating by party, we find evidence that Senate Democrats are responsive to the median (though this relationship does not reach conventional levels of statistical significance), but Republicans are not. We find no evidence in favor of the hypothesis that responsiveness is biased towards the affluent for either party.

Elite Cues

We now assess whether public opinion responds to elite cues by regressing change in constituency opinion between times $t+1$ and $t+2$ on change in legislator position in NAFTA between t and $t+1$. We find no evidence of cue-taking, though this may be because legislators are not changing their public positions or rhetoric.

Disaggregating by party, we find no evidence that Republican or Democratic positioning influences constituent opinion.

Table 16: Constituency Opinion and Legislator Positioning (Senate Democrats)

	Dependent variable:		
	Change in Legislator Support		
	(1)	(2)	(3)
Change in Overall Constituency Support	0.029*	−0.018	0.108
	(0.017)	(0.105)	(0.127)
Change in Copartisan Constituency Support		0.045	−0.076
		(0.100)	(0.120)
Change in Affluent Constituency Support			−0.017*
			(0.010)
Constant	−0.419**	−0.406**	−0.396**
	(0.185)	(0.188)	(0.185)
Observations	55	55	55
R^2	0.051	0.054	0.106
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 17: Constituency Opinion and Legislator Positioning (Senate Republicans)

	Dependent variable:		
	Change in Legislator Support		
	(1)	(2)	(3)
Change in Overall Constituency Support	−0.009	−0.043	−0.111
	(0.017)	(0.120)	(0.140)
Change in Copartisan Constituency Support		0.034	0.105
		(0.119)	(0.140)
Change in Affluent Constituency Support			−0.010
			(0.011)
Constant	0.138	0.164	0.206
	(0.185)	(0.208)	(0.212)
Observations	44	44	44
R^2	0.007	0.009	0.031
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 18: Changes in Legislator Positioning and Constituency Opinion Change

	Dependent variable:		
	Change in Overall Constituency Support	Change in Copartisan Constituency Support	Change in Educated Constituency Support
	(1)	(2)	(3)
Change in Legislator Support	−0.014	0.159	0.029
	(0.163)	(0.197)	(0.156)
Constant	1.154***	2.146***	8.124***
	(0.261)	(0.316)	(0.252)
Period Fixed Effects	Yes	Yes	Yes
Observations	1,203	1,203	1,203
R^2	0.773	0.690	0.672
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 19: Changes in Legislator Positioning and Constituency Opinion Change (Democrats)

	Dependent variable:		
	Change in Overall Constituency Support	Change in Copartisan Constituency Support	Change in Educated Constituency Support
	(1)	(2)	(3)
Change in Legislator Support	−0.068	0.037	−0.009
	(0.212)	(0.256)	(0.203)
Constant	0.881***	2.111***	8.189***
	(0.337)	(0.407)	(0.322)
Period Fixed Effects	Yes	Yes	Yes
Observations	709	709	709
R^2	0.786	0.708	0.690
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 20: Changes in Legislator Positioning and Constituency Opinion Change (Republicans)

	Dependent variable:		
	Change in Overall Constituency Support	Change in Copartisan Constituency Support	Change in Educated Constituency Support
	(1)	(2)	(3)
Change in Legislator Support	0.116	0.400	0.124
	(0.254)	(0.306)	(0.249)
Constant	1.516***	2.154***	8.012***
	(0.413)	(0.497)	(0.403)
Period Fixed Effects	Yes	Yes	Yes
Observations	494	494	494
R^2	0.755	0.669	0.647
Note:			*p<0.1; **p<0.05; ***p<0.01