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THE POLITICAL ECONOMY OF THE U.S. MORTGAGE DEFAULT CRISIS

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ABSTRACT

We examine the determinants of congressional voting behavior on two of the most significant pieces of federal legislation in U.S. economic history: the American Housing Rescue and Foreclosure Prevention Act of 2008 and the Emergency Economic Stabilization Act of 2008. We find evidence that constituent interests and special interests influence voting patterns during the crisis. Representatives from districts experiencing an increase in mortgage default rates are significantly more likely to vote in favor of the AHRFPA. They are precise in responding only to mortgage related constituent defaults, and are significantly more sensitive to defaults of their own-party constituents. Increased campaign contributions from the financial services industry is associated with a higher likelihood of voting in favor of the EESA, a bill which transfers wealth from tax payers to the financial services industry. We also examine the trade-off between politician ideology and constituent and special interests, and find that conservative politicians are less responsive to constituent and special interest pressure. This latter finding suggests that politicians, through ideology, can commit against intervention even during severe crises.

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1 Introduction

The U.S. mortgage default crisis has led to two of the most significant pieces of emergency federal legislation in U.S. economic history. In July 2008, after several months of steep deterioration in the mortgage market, the U.S. Congress passed the American Housing Rescue and Foreclosure Prevention Act ("AHRFPA"), a bill that provides up to $300 billion in Federal Housing Administration insurance for renegotiated mortgages and unlimited support for Freddie Mac and Fannie Mae.[1] In October 2008, the U.S. federal government enacted the Emergency Economic Stabilization Act ("EESA") which enables the Treasury Department to recapitalize banks through direct purchase of new equity and severely distressed mortgage backed securities up to $700 billion. These bills have forced an increase in the national debt ceiling of over $1 trillion, and they guarantee significant government intervention in the mortgage market and financial industry for years to come. By any standard, the AHRFPA and the EESA represent congressional legislation of historic economic relevance and magnitude.

This paper analyzes the decision making process of U.S. Congressional representatives voting on these bills. Our analysis is important on two dimensions. First, it details the political determinants of the government's response to the most severe financial crisis in U.S. history since the Great Depression. Second, and perhaps more importantly, the passage of these bills provides a unique opportunity to answer long-standing questions in political economy. More specifically, political scientists and economists have long argued that government policy toward the economy is determined by the confluence of three factors: political ideology, constituent interests, and special interests (Stigler, (1971), Posner (1974), Peltzman (1976), Kau and Rubin, (1979, 1993)). Empirically separating these factors and understanding the mechanisms through which they operate remains difficult. As we show below, circumstances related to the passage of the emergency bills coupled with a unique data set enable us to make significant progress on these questions.

A key advantage of the emergency bills - relative to a substantial majority of existing congressional voting studies - is that winners and losers are well specified (Peltzman, (1984)). While both bills conflict with the fundamental conservative principle of limited intervention in private markets, they each have specific "winners" that can be identified empirically. The AHRFPA provides an expected net transfer to households that are in (or near) default on their mortgages, while the

[1] The act is also known as the Housing and Economic Recovery Act of 2008 and the specific provision to provide FHA insurance is the Hope for Homeowners program.

EESA provides an expected net transfer (at least in the short run) to the financial industry. We refer to the former as "constituent interests" and latter as "special interests" in our analysis.

We utilize a unique data set that allows us to precisely measure these constituent and special interests. The data set includes zip code level information on consumer credit defaults which we use to construct the mortgage default rate at the congressional district level. In addition, the level of geographical disaggregation in the data allows us to separately construct the default rate for Republican and Democratic voters in a constituency. Our data set also includes information on the average campaign contributions that a representative receives over a congressional cycle from the financial industry.

We begin with an analysis of politician voting patterns on the AHRFPA. At its core, the bill presents a conflict between conservative ideology and constituent interests of defaulting mortgage debtors. Separating the effects of politician ideology from constituent interests has proven difficult in previous empirical studies because legislators with a track record of voting conservatively also represent districts where constituent interests are naturally aligned with the conservative agenda (Peltzman (1984) and (1985), Grier and Munger (1991), Poole and Rosenthal (1997), Levitt (1996)). However, a unique advantage of the AHRFPA is that the shock to mortgage defaults that precedes the bill is completely *orthogonal* to ideology.[2] We therefore have a natural experiment to empirically separate the influence of ideology versus constituent interests.

We find strong evidence that constituent interests affect a politician's voting choice. Representatives from high mortgage default districts are more likely to vote in favor of the AHRFPA, and this result is not driven by ideological preferences or politician "type." When we decompose the 2007 year end default rate into the 2005 year end default rate and the change in default rate from 2005 to 2007, we find that politicians only respond to the change in the mortgage default rate. Since ideological preferences are fixed in the short run, this result implies that representatives respond directly to time-varying constituent interests. Our preferred estimate suggests that a one standard deviation increase in mortgage default rates in 2007 leads to a 12.6 percentage point increase in the likelihood of voting for the AHRFPA. The finding contradicts a purely ideological approach to political representation (Bernstein (1989), Poole and Rosenthal (1996), Lee, Moretti and Butler (2004)).

[2] This is true within the set of Republican districts, which is the relevant set since almost all Democrats voted in favor of AHRFPA.

We provide several additional insights into the mechanisms through which constituent interests affect representatives' voting patterns. We find that representatives are remarkably precise in responding to constituent interests. Since the mortgage bill has no impact on voters with credit card or auto defaults, a representative should *not* change his voting behavior when the percentage of non-mortgage related defaults changes. Despite the strong correlation of non-mortgage and mortgage defaults in the data, we find that politicians react only to mortgage defaults while ignoring non-mortgage defaults.

Employing zip code level information, we also separate the overall mortgage default rate into the mortgage default rate experienced by Republican and Democratic voters *within* a congressional district, and we show that politicians do not respond equally to all constituents. Instead, representatives respond primarily to their own voting bloc. These results provide support to the "dual constituency" hypothesis that legislators respond more strongly to their own supporters within their electorate (Fiorina (1974)). To the best of our knowledge, ours is the first work that provides evidence of the geographical precision with which politicians respond to their constituency.

If representatives are responding to constituent interests due to electoral pressure, then the effect of constituent interest on voting behavior should be stronger in more competitive districts. Consistent with this prediction, we find that representatives are more likely to respond to an increase in their constituent mortgage default rate by voting in favor of the AHRFPA if their election is closely contested or if their district lies in a presidential swing state.

In our examination of politician voting patterns on the EESA, we find that a strong predictor of voting behavior is the amount of campaign contributions from the financial services industry. This finding is consistent with anecdotal evidence suggesting that the financial industry lobbied heavily to shape the EESA and get it passed. However, we are cautious in our interpretation of this result. As Stratmann (2002, p. 346) emphasizes, "if interest groups contribute to legislators who support them anyway, a significant correlation between money and votes does not justify the conclusion that money buys votes. In this case the positive correlation arises because the same underlying factors that cause a group to contribute to a legislator also cause a legislator to vote in the group's interest".[3] While this is a genuine concern, the significance of the impact of

[3]Different strands of theoretical work on special interests are present in the literature with a Political Science strand focusing mostly on informational asymmetries (Austen-Smith (1987) and (1995)) and an Economic literature focusing on policy buying following Grossman and Helpman (1994). The "policy buying" approach has produced important empirical analysis in particular with regard to trade policy (Goldberg amd Maggi (1999), Gawande and

financial service campaign contributions on voting patterns for the EESA is remarkably robust to the inclusion of many reasonable proxies for the "underlying factors" such as politician ideology, district demographics, the fraction of constituents working for the financial industry, and whether the representative serves on the financial committee. The magnitude of our estimate implies that a one standard deviation increase in log campaign contributions from the financial services industry is associated with a 10 percentage point increase in the likelihood of a politician voting for the bill.

While the two bills differed in the identity of their direct beneficiaries, they shared the common characteristic that they both conflicted with the fundamental conservative ideology of limited government intervention. This friction was apparent in the debates leading up to the two votes as ideologically conservative Republicans strongly objected to the bills on philosophical grounds. Not surprisingly, we find that conservative ideology strongly predicts votes against the two bills.

In our analysis of ideology versus constituent and special interests, our ability to separate the effects of each allows us to estimate the "price" of the trade-off between ideological and economic voting incentives. While heightened constituent and special interests push politicians to vote in favor of massive government intervention, we find that conservative politicians with ideological opposition to the legislation are significantly less responsive to such heightened interests. In other words, the effect of mortgage default rates on the AHRFPA vote and the effect of campaign contributions on the EESA vote are significantly weaker among ideologically conservative representatives. These results highlight the importance of political ideology as a partial commitment device against government intervention: Ideologically conservative politicians are less responsive to constituent and special interests even in the midst of a major financial crisis.

To our knowledge, this latter result is a novel documentation of the commitment value of ideological preferences in resisting constituent and special interest pressures.[4] This is an important point, given that the ability to partially commit against ex post intervention is an important aspect of the pricing of systematic risk as it relates to extreme financial crisis situations. This finding is related to a number of theoretical papers that rationalize the existence of different political

Bandyopadhyay (2000)). For a complete review of the empirical works on campaign contribution influence and its consequences see Grossman and Helpman (2001), Stratmann (1991), and Stratmann (2005). For a critical review of the rationality of political investment see Ansolabehere, de Figueiredo, and Snyder (2003), Bombardini and Trebbi (2008a, 2008b).

[4] An interesting work on the rationality of ideology as a form of committment against shirking is Dougan and Munger (1989).

institutions - such as democracy, party politics, majority rules - as useful commitment devices (for example, Acemoglu and Robinson (2001), Acemoglu, Johnson and Robinson (2005) and Bolton and Rosenthal (2002)). It is also related to the literature on the political economy of financial markets (Perotti and von Thadden (2006), Kroszner and Strahan (1999), Kroszner and Rajan (1994), Kroszner (1991), and Khwaja and Mian (2004)). Our analysis of special interests is most closely related to empirical political economy studies of the savings and loan debacle in the 1980s (Romer and Weingast (1991)) and consumer bankruptcy reform (Nunez and Rosenthal (2004)).

The rest of our analysis proceeds as follows. The next section provides background on the AHRFPA and the EESA, and describes how these bills were perceived by constituent and special interests. Section 3 presents the data and summary statistics. Section 4 presents the empirical model. The results on the AHRFPA appear in Section 5, while the ESSA is studied in Section 6. Further implications on the interaction of ideology and constituent interests of congressmen are addressed in Section 7. The last section concludes.

2 The Legislative Response to the Mortgage Default Crisis

In this section, we describe the two pieces of legislation that are central to our analysis of the mortgage crisis. We also describe how these bills were perceived by constituents and special interests at the time of passage.

Before describing the details of the bills, it is important to emphasize the magnitude of the mortgage default crisis and its effects on the economy. From 2005 to 2007, Mian and Sufi (2008) show that the aggregate default rate on mortgages more than doubled. According to the S&P/Case Shiller home price indices, home prices have declined by 20% since the peak in 2006. The U.S. Department of Treasury was forced to nationalize the mortgage giants Freddie Mac and Fannie Mae in September 2008 given their enormous losses on subprime mortgage backed securities. Some of the world's largest financial institutions, including Bear Stearns, AIG, Lehman Brothers, and Washington Mutual, have failed or been acquired directly because of the plummeting value of subprime and prime mortgage backed securities. It is in this environment that the U.S. Congress has conducted a massive intervention in financial markets through the AHRFPA and the EESA.

2.1 The American Housing Rescue and Foreclosure Prevention Act of 2008

The initial U.S. Congressional response to the mortgage default crisis evolved between the summer of 2007 and the summer of 2008, leading to the signing of the American Housing Rescue and Foreclosure Prevention Act (AHRFPA) on July 30, 2008 by President Bush.[5] The final version of the AHRFPA included a number of provisions meant to aid the ailing housing sector. The act gave the U.S. Federal Government, through the Federal Housing Administration, the ability to insure $300 billion of refinanced mortgages. Such insurance was provided for mortgage lenders that voluntarily agreed to reduce mortgage principal and delinquency fees.[6]

The AHRFPA also increased the Treasury's authority under existing lines of credit to Freddie Mac, Fannie Mae, and the Federal Home Loan Banks for 18 months, giving Treasury standby authority to buy stock or debt in those companies. The amount of the line of credit was unlimited during these 18 months.[7] In addition, the act increased FHA loan limits and provided tax breaks for first-time home buyers. Finally, the act called for a regulatory overhaul of the Office of Federal Housing Enterprise Oversight (OFHEO) by establishing the Federal Housing Finance Agency, which is charged with broad supervisory and regulatory powers over the operations, activities, corporate governance, safety and soundness, and mission of the Government Sponsored Enterprises (GSEs).

Overall, at the time of passage, the AHRFPA represented one of the most dramatic government interventions in the housing sector in recent history. The New York Times (July 24th, 2008) reported that "[the legislation] would rank in importance with the creation of the Home Owners' Loan Corporation to prevent foreclosures in the 1930s as part of the New Deal, and the legislation in 1989 responding to the savings and loan crisis."[8] A quote from a Wall Street Journal article (July 24th, 2008) argued that " ... this is the most important piece of housing legislation to come along in a generation." As Paletta and Hagerty (2008) noted, "as a result of the bill, Congress will raise the national debt ceiling to $10.6 trillion from $9.8 trillion."

In discussing how constituent and special interests perceived this legislation, it is important to

[5] The following information comes from a document entitled "H.R. 3221: Detailed Summary" available at http://financialservices.house.gov/detailed_summary_of_hr_3221.pdf. See also Herszenhorn (2008), Montgomery (2008), and Paletta and Hagerty (2008). This act is also known as the Housing and Economic Recovery Act of 2008.

[6] This part of the act is now known as the Hope for Homeowners program.

[7] This line of credit to Fannie Mae and Freddie Mac became obsolete in September 2008 when the U.S. Department of Treasury took over the institutions.

[8] For analysis of the farm foreclosure moratoria in the 1920's and 1930's see Alston (1984) and Alston and Rucker and Alston (1987). For the S&L crisis, Romer and Weingast (1991).

emphasize that politician voting patterns were influenced by the perceptions of these interests at the time of passage. In terms of the perceived beneficiaries of the legislation, the primary component of the bill, the FHA insurance for renegotiated mortgages, represented a transfer from tax payers to the lenders and borrowers that renegotiate mortgages. Under the legislation, the renegotiation of any mortgage is voluntary, which implies that neither lenders nor borrowers could be made worse off directly from the bill. There is, however, some evidence that mortgage lenders faced implicit pressure to agree to write down principal in order to initiate renegotiations. For example, on the day the bill was passed, Representative Barney Frank (D-MA), chairman of the House Financial Services Committee, was quoted in the New York Times as follows: "Many of these institutions know this is coming. I hope they will be able to take advantage of it right away." And in the Washington Post, Frank is quoted as follows: "I would be very disappointed if, having helped us formulate this, they don't take advantage of it." Overall, the primary beneficiaries of the legislation were households either in default or close to default on mortgage payments. Mortgage lenders were also beneficiaries, but there may have been implicit Congressional pressure that would reduce the benefits if mortgage lenders were forced to renegotiate mortgages at a loss.

Our main focus in the empirical analysis below is the vote on the final passage of this bill held on July 26th, 2008.[9] However, there was also an amendment vote on May 8th, 2008; the focus of this previous vote was the $300 billion insurance program, as Freddie Mac and Fannie Mae had yet to experience sharp losses that required government intervention.[10] In specifications below, we exploit the fact that some politicians switched votes to help understand the determinants of voting behavior on the final version of the bill.

[9] Roll call 519. "Concur in Senate Amendment with House Amendment. H R 3221 Foreclosure Prevention Act of 2008".

[10] Roll call 301. "On Agreeing to the Senate Amendment with Amendment No. 1. H R 3221 Foreclosure Prevention Act of 2008". This vote is considered by many the first crucial roll call in the political economy of the crisis and was characterized by strong opposition (and a veto threat) by the executive branch. The Wall Street Journal (May 9, 2008) refers to the vote as follows: "The House voted 266-154 in favor of the centerpiece of the legislation – $300 billion in federal loan guarantees – despite a White House veto threat." In particular, "The heart of the legislation is a program to help struggling homeowners by providing them with new mortgages backed by the Federal Housing Administration. The guarantees would be provided if lenders agree to reduce the principal of a borrower's existing mortgage."

2.2 The Emergency Economic Stabilization Act of 2008

Beginning in the second week of September 2008, a series of events indicated that the U.S. financial sector was in the midst of a severe crisis. While the lack of capital in the banking industry had been a problem since August of 2007, more troublesome patterns emerged with the nationalization of Fannie Mae and Freddie Mac and the distress at Lehman Brothers during the week of September 8th, 2008. On Monday, September 15th, Lehman Brothers submitted the largest bankruptcy filing in history. On Tuesday, September 16th, the US government nationalized the American International Group (AIG) after the insurance firm experienced sharp losses and potential downgrades related to the writing of credit default swaps. On Wednesday, September 17th, a few large money market funds "broke the buck," which effectively meant losses on deposits that were supposed to be close to riskless. In the midst of the financial market turmoil, on Friday, September 19th, initial news reports suggested that "the federal government is working on a sweeping series of program that would represent perhaps the biggest intervention in financial markets since the 1930s" (Wall Street Journal, September 19th).

The EESA (2008) passed the U.S. House of Representatives on Friday, October 3rd. The hallmark of the legislation was authorization for the U.S. Department of Treasury to buy up to $700 billion of "mortgages and other assets that are clogging the balance sheets of financial institutions ..." (Dodd (2008)). While the original intention of the bill was for the Treasury to buy severely distressed subprime mortgage backed securities, more recent interpretations suggest that the act can be used by Treasury to inject capital directly into banks through an equity investment. The bill also included up to $150 billion of unrelated tax breaks for individuals and businesses, and an increase in FDIC insurance for depositors from $100,000 to $250,000.

How was this bill perceived by constituents and special interests? At least in the short run, it is clear that the legislation represented a large wealth transfer from U.S. tax payers to the financial services industry. At the time of this writing, the Treasury has yet to purchase assets or equity from financial institutions. But if the legislation is to help resolve the lack of capital in the banking industry, it will most likely involve purchasing distressed assets and equity from financial institutions at values above what the private market is willing to pay. For this reason, the most direct beneficiary of the legislation was the financial services industry.

Our main focus in the empirical analysis is the vote in the U.S. House of Representatives on

this bill on October 3rd, 2008.[11] There was also a vote on Monday, September 29th, 2008.[12] In the initial vote, the House rejected the bill, inducing one of the largest single day stock market losses in history. The October 3rd bill was different in two main respects: first, it called on the FDIC to lift protection from $\$100,000$ to $\$250,000$ for individual depositors. Second, it included the additional tax breaks mentioned above. While our primary focus is on the October 3rd vote, we also examine the characteristics of 58 legislators that voted against the September 29th bill and for the October 3rd bill.

3 Data and Summary Statistics

3.1 Data

Our analysis focuses on the determinants of House voting patterns on the AHRFPA and the EESA. We focus on House votes given the additional geographic variation that comes from more precise measures of constituent characteristics at the Congressional district, as opposed to state, level.

We utilize four main sets of data: consumer credit data, congressional electoral and voting data, campaign contribution data, and voter registration data. Data on consumer debt outstanding and delinquency rates are from Equifax Predictive Services. Equifax collects these data from consumer credit reports, and aggregates the information at the zip code level. The availability of disaggregated geographical data on defaults is a major advantage of our analysis, as it allows us to measure constituent interests as they relate to the default crisis. Furthermore, the availability of zip code level default data allows us to construct measures of a politician's particular voting bloc within the congressional district. The Equifax data are available at an annual frequency from 1991 to 1997, and at a quarterly frequency from 1998 through the fourth quarter of 2007.[13] In the following analysis, we define default amounts as any amount that is 30 days or more delinquent. The majority of our analysis focuses on mortgage default rates, but we also examine home equity and non-housing consumer debt default rates in some of the results. In order to aggregate zip code

[11] Roll call vote 681 on "Motion to concur in Senate Amendment" on H.R. 1424 "Emergency Economic Stabilization Act of 2008"

[12] Roll call vote 674 on "On Concurring in Senate Amendment with an Amendment" on H.R. 3997 "To amend the Internal Revenue Code of 1986 to provide earnings assistance and tax relief to members of the uniformed services, volunteer firefighters, and Peace Corps volunteers, and for other purposes"

[13] See Mian and Sufi (2008) for further details on the Equifax data.

level data to the congressional district level, we utilize the MABLE-Geocorr software.[14]

Our second main data set covers congressional district electoral and voting behavior. These data include party affiliation, vote margins in the November 2006 midterm elections, committee assignments of the representatives from the district (Stewart and Woon (2008)), and the DW-Nominate representative ideology scores which are increasing in conservatism (Poole and Rosenthal (1985), (1997)).[15]

Our third main data set covers campaign contributions by special interest groups. We obtain campaign contributions data from the Center for Responsive Politics (CRP), a nonpartisan and nonprofit organization that directly collects the information from the Federal Election Commission political contributions reports.[16] The advantage of the CRP data is that it covers contributions from Political Action Committees (PACs, the main channel for firms' political activity) and individual contributions (above $200) sorted on the basis of the contributor's employer. This allows for a comprehensive measurement of the overall contributions of a specific industry. Our main industry of interest is the Finance, Insurance, & Real Estate industry. The top four contributors from this industry in the 2008 election cycle are Goldman Sachs ($4.5 million), Citigroup ($3.7 million), JP Morgan Chase & Co ($3.3 million), and Morgan Stanley ($3.1 million).

Our fourth main data set has zip code level voter party affiliation information. This information is available for 38 out of the 50 states, which cover 84% of U.S. Congressional Districts. For each zip code, this data set records the fraction of voters belonging to the Republican and Democratic party. Party affiliation of a voter is determined by the party with which she registers in 32 of the 38 states. In the remaining 6 states, party affiliation is determined by the party primary in which a voter participates. The data are recorded as of 2007 for 32 states, 2006 for 4 states, and 2004 for 2 states. The data are provided by the political technology firm Aristotle.[17] Party affiliation data allow us to weight zip code level default rates using the fraction of voters that are affiliated with the Republican or Democratic party.

[14] Supported by the Missouri Census Data Center. Zip codes are 5-digit ZIP (ZCTA-ZIP Census Tab. Area 2000) and matched to congressional districts. All the aggregates are population weighted sums.

[15] Within the political science literature DW-nominate is one of the most popular proxies for ideology. In extreme synthesis, the DW-Nominate score is an estimated ideological position based on the legislator's past roll call voting records within a random utility choice model.

[16] See http://www.opensecrets.org and http://www.fec.gov/disclosure.shtml

[17] We are extremely grateful to Matthew Gentzkow and Jesse Shapiro for sharing these data with us.

3.2 Summary Statistics

Table 1 presents summary statistics. The variables are split into five categories: measures of constituent interests, measures of special interests, a measure of ideology, other political variables, and census demographics. Districts are separated by the party affiliation of the representative in the 110th Congress (2007-2008).

Our main proxy for constituent support for the AHRFPA of 2008 is the mortgage default rate as of the end of 2007. While mortgage default rates for Democratic districts are higher than for Republican districts in both 2005 and 2007, both experience a sharp increase in default rates over these two years. For Republican districts, the increase in the mortgage default rate from 2005 to 2007 (2.2%) is equivalent to almost two standard deviations in the mortgage default level as of 2005 (1.2%). The registered Republican and Democratic mortgage default rate is constructed using the zip code level information on defaults and voter registration. The registered Republican (Democratic) default rate is constructed as the population weighted sum of default rates across zip codes where the weights are given by the fraction of registered Republicans (Democrats) in the zip code. We also construct the "home default rate" by aggregating home equity defaults with mortgage defaults, and the combined variable closely mirrors the mortgage default rate. Table 1 also includes information on the non-home default rate, which includes defaults on credit card debt, auto debt, consumer loans, and student loans. We make use of this variable for falsification exercises.

Measures of constituent support for the EESA of 2008 include the fraction of the workforce in a congressional district that is employed by the financial services industry and the fraction of households with annual household income above $\$200,000$. In addition to the mortgage default rate, these variables measure constituent support for the EESA, given that the bill represents a transfer of wealth from tax payers to the financial services industry and those holding their assets.

Our primary measure of special interest support for the EESA is campaign contributions made by the financial services industry, defined in the Center for Responsive Politics data as donations from the Finance, Insurance and Real Estate industry. The statistics in Table 1 represent the average campaign contribution per congressional term by the financial services industry since 1993 (103rd congress) for a given representative in the 110th congress. The mean for Republicans and Democrats is about $\$142,000$ and $\$112,000$, respectively. In terms of politician's ideology, the DW nominate score, which is increasing in conservatism of the representative, is significantly

lower for Democratic districts than for Republican districts. Table 1 also lists summary statistics for political and census demographic control variables. Table A1 in the appendix shows the full frequency distribution for the key right hand side variables in our analysis.

4 Empirical Model

4.1 Baseline

We derive and estimate a reduced-form model that examines the determinants of politician voting behavior on the AHRFPA and the EESA. Consider a legislature with $i = 1, ..., N$ members. Each member i is characterized by preferences over her vote on a particular bill v:[18]

$$U_i = \theta f(v_i) + g(v_i) + \varepsilon_i^v \quad (1)$$

where the function f maps the Yea/Nay vote into a unidimensional ideological preference space and g maps the vote into reelection probabilities. The parameter θ converts ideological gains/losses into increments of reelection probabilities and ε_i^v is a random preference component. A random utility approach to the representative decision implies that the choice of a Yea vote ($v = 1$) follows $\Pr(v_i = 1) = \Pr\left(\theta\left(f(1) - f(0)\right) + g(1) - g(0) > \varepsilon_i^0 - \varepsilon_i^1\right)$.

Ideological losses and deterioration of electoral prospects may or may not conflict. Whenever a vote conflicts with the representative's ideological stance *and* with constituent interests, the probability of voting in support will be low. Whenever a vote conflicts with the representative's ideological stance *but* favors the member's constituent interests, the probability of voting in support of the bill will depend on the relative strength of the two.

We assume stark functional forms to keep the empirical analysis as transparent as possible, with $f(v_i) = -ID_i * v_i$ and $g(v_i) = \beta_1 CI_i * v_i + \beta_2 SI_i * v_i$. In these equations, ID_i indicates the (unidimensional) ideological position of the representative from congressional district i, approximated by the DW-Nominate first dimension score, CI_i indicates a proxy for constituent interest in congressional district i, and SI_i a proxy for special interest support. The reelection probability depends on two factors: (i) the ability to convince voters that the member caters to their interests (CI), and (ii) campaign spending, determined by the ability to attract special interest contributions

[18] Each legislator cares both about the policy choice and her individual vote, because constituents reward or punish her voting record. See Snyder (1991) for an analogous utility representation.

(SI).[19] The choice of a Yea vote further simplifies to:

$$\Pr(v_i = 1) = \Pr\left(-\theta ID_i + \beta_1 CI_i + \beta_2 SI_i > \varepsilon_i^0 - \varepsilon_i^1\right), \quad (2)$$

which can be directly estimated, given distributional assumptions on $\left(\varepsilon_i^0 - \varepsilon_i^1\right)$. We make use of (2) to test $\beta_1 = \beta_2 = 0$ in order to discriminate between purely ideological voting (Poole and Rosenthal (1996, 1997)) and economic incentives in congressional voting (Peltzman (1984), Kalt and Zupan (1984), Gillian, Marshall, Weingast (1989), and numerous others subsequently). The specification in (2) allows us to estimate whether, for a given ideological aversion to the bill (ID_i), constituent interests (CI_i) and special interests (SI_i) are strong enough to tilt the representative's vote in favor of the bill.

4.2 Empirical Proxies

Our data set provides reasonably precise empirical measures for constituent and special interests. As mentioned in Section 2, our main empirical proxy for constituent interests on the AHFRPA is the mortgage default rate as of the end of 2007. Our main measures of constituent interests for the EESA are the mortgage default rate, the fraction of the district population that works in the financial services industry, and the fraction of the district population that has a household income greater than $\$200,000$. In all specifications, our primary measure of special interest influence is campaign donations from the financial services industry.

Table 2 presents correlations between the key right hand side variables in our analysis. Panel C shows that there is no correlation between the mortgage default rate and the ideology score of Republican representatives. In other words, the impact of the current mortgage default crisis is orthogonal to variation in political ideology among Republican districts. This is a novel and useful feature of the default variation that we exploit to identify the impact of constituent interests on politicians' voting behavior. A second point to take away from Table 2 is that while the correlation between campaign contribution and ideology is positive among Democrats, it is negative among Republicans. This suggests that campaign contributions from the financial industry are targeted towards "moderates" in the two parties. We analyze this in greater below.

[19] Notice that, without loss of generality, our assumptions about f and g imply that both constituent and special interests are measured on a scale such that higher values increase their prospect of reelection if they vote in favor of the bill.

5 The AHRFPA of 2008 and the Role of Constituent Interests

In this section, we empirically estimate (2) to examine the determinants of politician voting patterns on the AHRFPA. As mentioned in Section 2, the AHRFPA represents a major government intervention designed to reduce foreclosures through a $300 billion program of FHA-backed refinanced mortgages. In our analysis we focus primarily on votes in the pivotal U.S. House of Representatives roll call 519 (July 26th, 2008).[20] In some specifications, we also examine voting patterns on roll call 301 (May 8th, 2008).

Table 3 presents voting patterns by political party. Democrats almost unanimously vote in favor of the AHRFPA in the July 26th vote, with only 3 Democrats voting against. In contrast, there is substantial variation in Republican voting patterns, with 45 Republicans voting in favor and 149 against. The voting patterns are similar for the May 8th vote. As Panel C demonstrates, there is significant variation among Republicans that switch votes from May 8th to July 26th. There are 19 representatives that switch from voting "Nay" in the May 8th vote to "Yea" in the July 26th vote. There are 14 representatives that switch from voting "Yea" in the May 8th vote to voting "Nay" in the July 26th vote. We further examine these "switchers" in specifications below.

5.1 Baseline Results

Figure 1 presents initial evidence on the importance of constituent interests in explaining voting patterns on the AHRFPA. It plots the correlation between mortgage default rates and the propensity to vote in favor of the AHRFPA. We focus only on Republicans given that Democrats vote almost unanimously for the AHRFPA. Figure 1 plots the non-parametric relation between mortgage default rates and the propensity to vote in favor of AHRFPA by Republican legislators. Republicans from higher default rate areas are more likely to vote in favor of the AHRFPA. The effect appears across the distribution, and is particularly strong when default rates rise above 7%.

Table 4 presents linear probability regression estimates of the effect of mortgage default rates (CI) on voting patterns for Republicans.[21] The estimate of 6.76 in Column 1 is statistically significant at the 1% level, and implies that a one standard deviation increase in the mortgage default

[20] All voting data are collected from the Library of Congress THOMAS (thomas.loc.gov/).

[21] All marginal effects reported in our analysis are almost identical in both qualitative and quantitative significance if we use a probit maximum likelihood specification in place of a linear probability specification. The use of a linear probability model in congressional voting is discussed formally in Heckman and Snyder (1997).

rate leads to a 12.6 percentage point increase in the likelihood of voting for AHRFPA. Column 2 also includes measures of ideology (ID) and special interests (SI). Campaign contributions by the financial services industry do not affect voting patterns, while more conservative politician ideology has a strong negative effect. Despite the explanatory power of politician ideology (the R^2 of the regression increases by almost three times), the estimate on the the mortgage default rate is almost identical with the inclusion of the DW nominate ideology score. In other words, the effect of constituent interests on voting patterns is largely orthogonal to the effect of ideology, confirming the correlation presented in Table 2. The orthogonality between ideology and constituent interest is an advantage of our empirical setting and allows us to cleanly identify the independent effect of constituent interests on voting patterns.

Given that the distribution of default rate has a thin right tale distribution (see Figure A1 in appendix), one may be concerned that our coefficient on default rate is being determined by a few "outliers". Table A1 in the appendix shows that this is not the case. First, the coefficient default rate is robust to winsorizing the default rate at the 5% level. Second, a split of the data below and above the median default rate shows that the OLS coefficient is similar across the two halves of the distribution (although larger for larger defaults).

In Column 3, we report results when deconstructing the 2007 default rate into the 2005 level default rate and the change from 2005 to 2007. As the results show, it is the change in the default rate from 2005 to 2007 that leads Republicans to vote in favor of the legislation, not the level in 2005. Given that politician ideology is unlikely to change dramatically in just two years, these results further mitigate the concern that default rates lead to votes in favor of the AHRFPA through an ideology channel or other selection effects.

Columns 4 and 5 present estimates from further robustness tests that include political control variables (Column 4) and census demographic characteristics (Column 5). The presence of these control variables increases the R^2 of the regression from 0.23 to 0.30, but they have only a slight effect on the coefficient on the mortgage default rate. We want to emphasize that the inclusion of census demographic characteristics in Column 5 leads to estimates of the effect of constituent interests on voting patterns that are extremely precise and very conservative. The reason is that district level demographics also measure constituent interests. For example, the fraction of households that are Hispanic and the 2007 year end mortgage default rate are highly correlated (0.51 correlation coefficient). In other words, it is not obvious that demographic variables should be

viewed as control variables when trying to estimate the effect of constituent interests. The fact that the mortgage default rate predicts votes in favor of the AHRFPA even after controlling for demographics strengthens our interpretation that representatives are responding precisely to constituent interests, and not ideology or some other district characteristics. In this sense the evidence refutes the null hypothesis that electoral pressures have no effect on politician voting behavior (Lee, Moretti and Butler (2004)).

Column 6 presents our baseline specification for the vote on roll call 301 (May 8th, 2008). This is an important robustness check given a substantial difference from roll call 519: a presidential veto threat on the bill (possible to overcome by a 290-vote majority). In May 2008, President Bush opposed the AHRFPA and in particular the $300 billion insurance provision, while the July vote was brought to the House floor the same day the veto threat was lifted. Given that defection from the Republican party line (a "Yea" vote) was a more costly choice in May, the estimates in Column 6 represent an important test of whether politicians respond to constituent interests even when it is costly to do so. There is no statistically significant difference between the coefficient estimates on mortgage default rates for the May 8th and July 26th votes, which confirms that politicians responded to constituents even when doing so may have harmed their standing within the party.

Columns 7 and 8 estimate why some Republicans switch their vote from May 8th, 2008 (Vote 301) to July 28th, 2008 (Vote 519). Columns 7 conditions on Republicans that had voted in favor of the first bill, and tests what explains the behavior of those who chose to vote against the second version of the bill. Similarly, column 8 conditions on those who voted against the first bill and tests why some of them chose to vote in favor of the second version. Given our results earlier, mortgage default rates should weigh heavily on the electoral prospects of Republicans who voted against the bill in May 2008 by opening them to criticisms from challengers. Hence, we would expect that switchers to a "Yea" vote represent districts with high default rates. Conversely, representatives with high default rates are more likely to continue supporting the bill. Columns 7 and 8 confirm both predictions.

We conclude this section with some (approximate) quantitative assessment of the electoral weight of the mortgage crisis. So far we have emphasized the mortgage default rate as a proxy for CI. Such a measure is ideal given that it includes both the extensive margin (the number of individuals in default) and the intensive margin (the amount of distressed debt per individual). However, an interesting exercise is to investigate proxies for the extensive margin to check the

lower bound of voters that are most directly affected by the crisis.[22] One rough proxy for the number of voters in default is the number of accounts in default. The number of mortgage accounts proxies reasonably well for the number of voters with a mortgage, which implies that the number of mortgage accounts in default proxies well for the number of voters in default.[23]

We report nonparametric evidence in Appendix Figure A2. Figure A2 reports the total number of mortgage accounts in default scaled by the total number of individuals with a credit report in 2007. There are 391,000 individuals with a credit report on average per district. By examining the nonlinearity in the slope, the figures show that politicians start responding in terms of voting patterns when at least 3.5% of individuals with a credit report start to default.[24] While there are obvious limitations in focusing on the extensive margin, these figures appear reasonable. The number of affected voters tipping the politician voting behavior is $0.035 * 391,000 = 13,685$ individuals. Given an average pivotal group size in congressional elections of 40,000 voters, this estimate suggests that representatives begin responding to subconstituencies when they reach a third of the average pivotal group size.

5.2 Precision in Targeting Constituent Interests

Table 4 shows that the mortgage default rate as of 2007 leads to votes in favor of the AHRFPA, even after controlling for ideology and district demographic characteristics. In Table 5, we show further evidence that representatives are extremely precise in targeting constituent interests. An advantage of the Equifax data on defaults is that we have disaggregated default rates on all consumer debt. As a result, we are able to test whether voting behavior by Republicans responds to general consumer

[22] Such an analysis ignores the negative externality stemming from mortgage defaults due to the negative effect of foreclosures on local house prices. As a result, the extensive margin analysis underestimates the size of the population impacted and therefore delivers only lower bound estimates. For this reason, the best measure of constituent interests is the mortgage default rate, which more accurately reflects both the depth of the crisis for mortgage defaulters and the externality imposed on other voters in the district.

[23] The main measurement worry is that some voters have multiple mortgage accounts. However, the number of mortgage accounts is likely a good proxy for the number of voters with a mortgage. First, Equifax separates home equity loans as distinct accounts, so only people who take a second mortgage out on their house would have more than one mortgage account. Yamashita (2007) reports from the 1998 SCF that 11% of the total population has a second mortgage (16% of homeowners). Second, the average number of mortgage accounts per consumer in the Equifax data is 0.51. The average number of households in the SCF with some type of mortgage is 0.48.

[24] We employ winsorization at 5% of the right tale to minimize the weight of outliers at the right tail of the default distribution.

credit difficulties or if it responds precisely to the increase in mortgage default rates.

Panel A shows that default rates across different types of consumer credit are very highly correlated. For example, the mortgage default rate is highly correlated with the auto default rate (0.66) and the credit card default rate (0.58). All correlations are highly statistically significant. Given these high correlations, one might conclude that it would be difficult for representatives to distinguish general consumer credit difficulty from mortgage defaults.

Panel B shows that representatives are extremely responsive to the home default rate (which includes mortgage and home equity defaults), even after controlling for the non-home default rate (which includes defaults on credit card debt, auto loans, consumer loans, and student loans). The estimate in Column 1 implies that a one standard deviation increase in the home default rate leads to a 16.5 percentage point increase in the likelihood of voting for the AHRFPA. The estimation also shows that the non-home default rate has no predictive power in explaining votes on the AHRFPA. Further we show that precision in targeting distressed home borrowers is robust to a number of controls in Columns 2 and 3. Taken together, the results in Panels A and B show that despite the high correlation between general consumer credit difficulty and mortgage defaults across districts, politicians appear to respond uniquely to mortgage defaults when deciding whether or not to vote for the AHRFPA.

5.3 Responding to Voting Bloc within Constituency

The "dual constituency" hypothesis (Fiorina (1974)) posits that politicians respond more to the interests of their own supporters within their overall constituency. This hypothesis is difficult to test given that such a test would require constituent interest variables that are measured separately for a politicians' supporters and non-supporters within their electorate. Our unique advantage in this regard is zip code level information on mortgage defaults and zip code level voter registration data. This allows us to construct a Democratic and Republican mortgage default rate for each Congressional district, where the default rates are constructed using the fraction of registered Democrats and Republicans within each district.

However, one drawback with only having zip code level data is the high correlation between the Democratic and Republican mortgage default rates within each Congressional district. More specifically, there will be perfect correlation between the two default rates within a district if either of the following two conditions hold: (i) if the default rate is constant across all zip codes in the district

or (ii) if the fraction of registered Republicans and registered Democrats is constant across all zip codes within the district. The correlation coefficient for the Democratic and Republican mortgage default rates in our sample is 0.90. Figure 2 shows this more directly; it presents the histogram of the difference across Congressional districts in the Democratic and Republican mortgage default rates. As Figure 2 shows, the majority of the Districts are close to 0, which implies no difference between the two default rates. It is clear from Figure 2 that inclusion of both the Democratic and Republican mortgage default rates within the same regression will suffer from serious multicollinearity problems.

Despite this collinearity problem, we find evidence in Table 6 that Republican politicians are more responsive to Republican default rates than Democratic default rates. While the coefficient on Republican default rate is weak in Column 1 in the full sample due to multicollinearity, the coefficient becomes significant with the addition of controls in Columns 2 and 3.

Columns 4 attempts to reduce the collinearity problem by estimating the specification on only the sample of districts above the median in the absolute difference between the Republican and Democratic mortgage default rates. In this specification, we find strong evidence that Republican politicians only respond to registered Republican mortgage default rates. Column 5 repeats the same exercise, but splits the default rate coefficient by the median of the absolute default rate difference. The point of this exercise is to show that the standard error estimate for the sample below the median of the absolute default rate difference blows up as one would expect given the collinearity problems discussed above. In contrast, the coefficient estimates show a unique reaction to Republican default rates in the sample above the median of the absolute default rate difference. Column 6 shows the robustness of this result to political and census controls. Columns 4 through 6 offer support to the "dual constituency" hypothesis that politicians respond more strongly to the interests of their own supporters within their constituency.

5.4 Electoral Competition and Constituent Interests

The previous three subsections demonstrate that an important determinant of Congressional voting behavior on the AHRFPA is constituent interests. In this subsection, we show that the effect of constituent interests is stronger when the representative faces a more competitive race.

In Table 7, the primary measure of electoral competition is the margin of victory for the incumbent in the previous Congressional election (November 2006). We focus in particular on districts where the margin of victory was quite low (less than 6%), given that there is likely not a difference

in electoral competition in districts where the margins are relatively large. For the results reported in Columns 1, 2, and 3, we create indicator variables for competitive districts, where competitive is defined as a margin of victory of 2% (10 districts), 4% (18 districts), and 6% (23 districts), respectively. We then interact the competitive district indicator variable with the mortgage default rate as of the end of 2007. As the results demonstrate, the effect of constituent interests is stronger in competitive districts. The interaction effect is particularly strong when competitive is measured narrowly as a margin of victory below 4%, and it weakens when competitive is measured more broadly as a margin of victory below 6%. The quantitative effects when focusing on close races are strong, with coefficients on the interaction terms above 100% of the level. The effect of of constituent interests on voting patterns doubles in close races.

In Column 4, we define the competitive district variable as 0 if the previous margin of victory is over 30%, and 0.30 minus the margin of victory if the margin of victory is less than 30%. For example, if the margin of victory in the 2006 election is 5%, the competitive district variable takes on the value 0.25. This functional form is a convex in the margin of victory and is meant to capture the fact that districts with large margins are unlikely to be competitive regardless of whether the margin is 30 or more. The results in Column 4 again suggest that constituent interests matter more in districts that are more competitive.

In Column 5, we define a competitive district as any district in a 2008 Presidential election swing state. The motivation behind this test is the argument that these districts are likely to face heightened voter and media attention given the importance of the presidential election between John McCain and Barack Obama.[25] As the results in Column 5 demonstrate, Republicans are more responsive to constituent interests if they are in a presidential swing state. The swing state effect is economically large: Voting behavior on the AHRFPA is twice as sensitive to default rates for Republicans in a presidential swing state.

Overall the results in Table 7 suggest that a primary channel through which constituent interests affect politician voting behavior is electoral competition. When representatives face a greater probability of losing in the 2008 election, they are more likely to respond to high mortgage default rates by voting in favor of the AHRFPA.

[25] The swing states are defined according to http://www.fivethirtyeight.com as of July 17th 2008. Swing states include Ohio, Missouri, Michigan, Florida, North Carolina, Nevada, Indiana, Montana, Virginia, Colorado, and New Mexico. Our results are slightly stronger if Pennsylvania is also included as a swing state.

6 The EESA of 2008 and the Role of Special Interests

This section examines how special interests affect Congressional voting patterns on the EESA of 2008. Our main focus is on votes in the 681 roll call on October 3rd, 2008. However, we also examine votes in the 674 roll call on September 29th, 2008. Given that the EESA represents a major transfer of wealth from tax payers to the financial services industry, we measure special interest influence through the amount of campaign contributions by the financial services industry to politicians. In addition to the mortgage default rate, we also measure constituent interests with the fraction of constituents that work in the financial services industry, and the fraction that have annual household income greater than $\$200,000$.

Table 8 presents voting patterns by political party. In contrast to the AHRFPA vote in July, the EESA vote involves significant variation in voting patterns for both parties. Almost 75% of Democrats voted for the EESA on October 3rd, whereas only 45% of Republicans voted in favor. These numbers increased from 60% for Democrats and 25% for Republicans on the September 29th vote. Panel C shows that the direction of "switching" between the two roll calls is almost completely in one direction. Of the 59 representatives that switched votes, 58 switched from voting against on September 29th to voting in favor on October 3rd.

6.1 The Effect of Special Interests: Baseline Estimates

Figure 3 shows one of the central results of this subsection. There is a strong positive relation between the amount of financial service industry campaign contributions received by a politician and the probability of voting for the EESA of 2008. The effect is strongest at the lower end of the campaign contribution distribution, and slightly levels off at the higher end of the campaign contribution distribution.

Table 9A examines this result in a regression context. The linear probability estimate in Column 1 shows that campaign contributions by the financial services industry has a strong positive effect on the probability of voting in favor of the EESA. The coefficient estimate implies that a one standard deviation increase in the log of contributions per cycle (1.76) is associated with a 10 percentage point increase in the probability of voting for the legislation. The estimate is robust to the inclusion of political ideology. Not surprisingly, increasing the conservativeness of politician ideology has a strong negative effect on the probability of voting for the legislation. The mortgage default rate within the district has no significant influence on voting patterns on the EESA.

In Column 2, we include an indicator variable for whether the politician is a Republican. With the inclusion of the politician ideology variable, party affiliation has no significant impact on voting patterns. In Columns 3 and 4, we add additional political and census demographic control variables, which slightly increase the magnitude of the estimate on financial services industry campaign contributions.

An important concern in interpreting these results is causality of political contributions. A substantial literature in political economy has emphasized how political contributions and congressional voting may be jointly determined (Stratmann (1991) and (2002)), hence casting doubts on the causal nature of estimates from a single-equation model as the one estimated in Table 9A. This concern can be relieved through an instrumental variable approach, which has been an unsuccessful avenue so far in the literature. Columns 2 through 4 rely on a more intuitive approach: sensitivity analysis. The impact of campaign contributions on the EESA is remarkably robust to the inclusion of several reasonable proxies for "underlying drivers", such as the ideological stance of the politician, tenure in office, or Financial Services Committee status. In all likelihood, were our results exclusively driven by the fact that politicians exogenously aligned with the financial sector are also favorite targets of financial industry contributions, the coefficient magnitudes should drop or change substantially across specifications. They do not. This points to a stable and sizeable direct effect of special interest pressure on the passage of EESA. While we are cautious in our interpretation, the evidence suggests that campaign contributions influenced the EESA vote.

A final possible concern with the coefficient estimate on financial services industry campaign contributions is that these contributions proxy for constituent interests through an employment channel. Bombardini and Trebbi (2008a) focus on how the employment and money channels may be simultaneously at play in influencing policymakers. To investigate this hypothesis, the specifications reported in Columns 5 through 7 include the share of the district population employed in the financial services industry and the share with annual household income greater than $\$200,000$. There is strong evidence that representatives are more likely to vote in favor of the EESA if a higher fraction of their constituency is employed in the financial services industry. However, the coefficient estimate on our measure of special interests is only slightly smaller with the inclusion of these variables. In other words, campaign contributions affect voting behavior even after controlling for a financial services employment channel.

6.2 The Politics of Switching

One advantage in the empirical study of the EESA is the proximity of two different votes on the same legislation. This enables us to examine the determinants of "switchers," or the politicians that first vote against the bill on September 29th and then for the bill on October 3rd. As shown above in Table 8, there are 58 politicians that switch from against to for votes; the party breakdown is 32 Democrats and 26 Republicans.

In Columns 1 through 3 of Table 9B, we show that the basic determinants of votes in favor of the EESA in the September 29th, 2008 roll call are similar to the determinants of votes in favor on October 3rd, 2008. As in the October 3rd roll call, conservative politicians are less likely to vote for the legislation, and politicians that receive large amounts of campaign contributions from the financial services industry are more likely to vote in favor of the legislation. One difference is that the coefficient estimate on the fraction of employees working in the financial industry is not significant in the September 29th roll call.

In Column 4, we examine the determinants of switching votes in the October 3rd roll call. We isolate the sample to representatives that vote against the legislation on September 29th, 2008. The estimates in Column 4 suggest that constituent interests, special interests, and ideology all affect the decision to switch votes. Politicians with higher mortgage default rates and a higher fraction of constituents working for the financial services industry are more likely to switch votes, whereas conservative politicians are less likely to switch votes. In addition, politicians that receive higher campaign contributions from the financial services industry are also more likely to switch to voting for the legislation.

In Columns 5 and 6, we split the sample to separately examine Democrats and Republicans, respectively. Democrats with high mortgage default rates and with a high amount of campaign contributions from the financial services industry are more likely to switch to voting in favor of the legislation. For Republicans, only the fraction of constituents working in the financial industry is a significant determinant of which politicians switch votes.

7 Ideology Interaction with Constituent and Special Interests

One of the main advantages of our analysis is the ability to isolate the effects of ideology from constituent and special interests on politician voting behavior. In Section 5, we show that con-

stituent interests influence voting patterns on the AHRFPA even after controlling for politician ideology. In Section 6, we show that special interests influence voting patterns on the EESA even after controlling for politician ideology. In this section, we explore whether there is an interaction effect: that is, are politicians that are ideologically extreme more or less sensitive to constituent and special interests.

7.1 Empirical Model Revisited

The empirical model introduced above in Section 3 produces a linear-in-covariates specification that we implement in the two sections above. In this simple model, there is no interaction between ideological and economic incentives of politicians. In other words, after controlling for ideology, all politicians respond equally to constituent and special interests. In reality, such an interaction is likely to be present in politician decision-making. The most simple example is one in which ideology enters the politician's utility function in such a way that ideologically extreme politicians are less sensitive to the desires of constituents and industry lobbyists. Indeed, one could argue that the very definition of being ideological is the characteristic of believing in certain policies regardless of the economic incentives that push against the beliefs. This "politician preference" hypothesis suggests that ideologically extreme politicians may be less responsive in their voting patterns to mortgage default rates and financial industry campaign contributions.

There is, however, a more subtle reason that ideologically extreme politicians may be less responsive to constituent and special interests, which we refer to as the "constituent ideology" hypothesis. Building on the model in Section 3, assume that higher ID_i politicians represent districts with voters characterized by equally strong ideological opposition to the bill (id_i), where $id_i = \pi ID_i$, $\pi > 0$. A Republican from a district ideologically against the AHRFPA or the EESA bailout represents voters against the bailout. This has an important implication for the probability of reelection function g.

While a $v_i = 1$ vote induces the support of voters CI_i and the accrual of SI_i contributions, voters ideologically opposed to the bill will turn out against the incumbent (or withdraw their support). A "Yea" vote does not just attract supporters of the bill, but also opponents, and progressively more, the stronger is the intensity of opposition. Assume for simplicity that for every additional voter that CI_i delivers and SI_i sways there is a probability id_i of an opposing voter showing up at

the polling booth.[26] This implies that the (net) reelection probability is:

$$g(v_i) = (\beta_1 CI_i * v_i + \beta_2 SI_i * v_i) * (1 - id_i * v_i)$$

and $g(1) = (\beta_1 CI_i + \beta_2 SI_i) * (1 - \pi ID_i)$. This expression delivers two intuitive effects. First, fixing the number of voters in default, a higher number of voters ideologically opposing the bill lowers the electoral advantage of voting for the bill. The advantage of an extra CI_i voter for a politician from a strongly conservative district (high ID) is lower than the advantage of an extra CI_i voter for a politician from a more liberal (low ID) district. A portion id_i of the additional ballots cast in favor of i will be eroded by opposing ideological voters which would otherwise support the incumbent. Second, the impact of an additional dollar of campaign contributions is lower in districts with stronger ideological opposition. This implies that a "Yea" vote from a more ideologically extreme representative will be increasingly more expensive than the vote of a more moderate representative. The choice of a "Yea" vote becomes

$$\Pr\left(-\theta ID_i + (\beta_1 CI_i + \beta_2 SI_i) * (1 - \pi ID_i) > \varepsilon_i^0 - \varepsilon_i^1\right), \quad (3)$$

which again we can estimate, given distributional assumptions on $\left(\varepsilon_i^0 - \varepsilon_i^1\right)$.

This stylized model introduces interactions between ideology and constituent interests, and therefore motivate including in the regression specifications interaction terms of ideology with constituent interests and with special interests for both the AHRFPA and the EESA votes. Interactions follow the empirical model (3):

$$\frac{\partial \Pr(v_i = 1)}{\partial CI} = \beta_1 - \pi * \beta_1 ID_i$$

and

$$\frac{\partial \Pr(v_i = 1)}{\partial SI} = \beta_2 - \pi * \beta_2 ID_i,$$

implying that more ideological representatives are progressively more expensive to move to "Yea".

Both the politician preference and the constituent ideology hypotheses suggest that there may be an interaction effect where ideologically extreme politicians respond less to constituent and special interests. We examine these hypotheses in the next section.

[26] The choice of id as a probability of upset voters showing up on election day is not restrictive for our reduced-form model. However a structural estimation of the relection probability function would require further assumptions on the form of g.

7.2 Interaction Empirical Results

In Columns 1 through 3 of Table 10, we examine voting patterns of Republicans on the AHRFPA with the inclusion of the interaction terms. The coefficient estimate on the mortgage default rate is significantly positive, which implies that politicians from districts with high mortgage default rates are more likely to vote for the legislation. This is consistent with results shown in Section 5.1. However, the interaction term with ideology is significantly negative. This implies that politicians from districts with a high mortgage default rate are less responsive if they have a conservative ideology.

In order to evaluate the magnitude of the interaction effect, it is useful to examine the partial derivative with respect to mortgage default rates using estimates from Column 2:

$$\frac{\partial YesVoteAHRFPA}{\partial MortgageDefaultRate} = 20.0 - 27.1 * ConservativeScore.$$

At the mean ideology score for Republicans (0.55), the partial derivative of a Yea vote with respect to the mortgage default rate is 5.1, which implies that a one standard deviation increase in default rates leads to a 10 percentage point increase in the probability of voting for the AHRFPA. If we examine the ideology score at one standard deviation below the mean (more liberal), the partial derivative of a Yea vote with respect to the mortgage default rate is 9.8, which implies that a one standard deviation increase in default rates leads to a 18.7 percentage point increase in the probability of a Yea vote on the AHRFPA. Finally, if we examine the partial derivative at one standard deviation above the mean (more conservative), the partial derivative is 0.4, which implies no response in the probability of voting in favor of the legislation with respect to an increase in default rates (0.007). These magnitudes suggest that conservative politicians vote against government intervention, even in the presence of heightened constituent interests.

In Columns 4 through 6, we conduct a similar exercise with EESA to evaluate the trade-off of ideology and special interests. In these specifications, the coefficient estimate on special interests is positive and significant, but the coefficient on the interaction term of ideology with special interests is negative. In other words, politicians that receive large campaign contributions from the financial services industry are more likely to vote for the legislation (consistent with Table 9A), but the effect is weaker if the politician is ideologically conservative.

Again, the easiest way to evaluate the magnitude is to examine the partial derivative with respect to campaign contributions using the estimates from Column 5:

$$\frac{\partial YesVoteEESA}{\partial FinancialIndustryContributions} = 0.08 - 0.06 * ConservativeScore.$$

At the mean ideology score for the full sample, the partial derivative of a Yea vote with respect to log financial industry campaign contributions is 0.079, which implies that a one standard deviation increase in log campaign contributions leads to a 12 percentage point increase in the likelihood of voting in favor of EESA. At one standard deviation below the mean ideology score (more liberal), the partial derivative is 0.109, which implies that a one standard deviation increase in log campaign contributions leads to a 17 percentage point increase in the probability of voting for EESA. Finally, at one standard deviation above the mean ideology score (more conservative), the partial derivative is 0.049, which implies that a one standard deviation increase in log campaign contributions leads to a 8 percentage point increase in the probability of voting for EESA.

Figure 4 provides the non-paramatric plot of the propensity to vote in favor of the AHRFPA against mortgage default rates separately for "liberal" versus "conservative" Republicans, where liberal and conservative are measured as being below and above the median ideology score, respectively. The effect shown in Table 10 is robust across almost the entire distribution, and is particularly strong when default rates rise above 0.07. The voting behavior of conservative Republicans is much less responsive to mortgage default rates relative to liberal Republicans.

Figure 5 plots the analagous graph for all politicians voting on the EESA. Here, we split all politicians (not just Republicans) based on the median ideology score. Once again, the conservative politicians are less responsive to financial industry campaign contributions across almost the entire distribution. Interestingly, even conservatives appear to respond strongly to financial industry campaign contributions at the very low end of the distrubution, but it is important to remember that almost the entire mass of the distribution is between log financial industry campaign contribution levels of 10.5 and 12.5 (See Figure A1 in the appendix). In other words, the conservatives show almost no additional responsiveness to special interst campaign contributions in the heart of the distribution.[27]

Taken together, the evidence in Table 10, Figure 4, and Figure 5 strongly supports the hypothesis that ideologically conservative politicians vote against government intervention even in the face of a severe crisis in which constituent and special interests desire such intervention. These results

[27] Given that the level of voting probabilities is quite different across liberals (Democrats) and conservatives (Republicans) on the EESA, we have normalized the Y-axis to start at 0 for both plots.

suggest that politicians may be able to commit ex-ante against government intervention, even in the face of severe crises. Unfortunately, our empirical analysis is unable to distinguish between the "politician-preference" and the "constituent ideology" hypotheses for this interaction, but we hope these results are the basis for further research into this question.

An intersting implication of these results is as follows: if special interests want to maximize the impact of their campaign contributions, they should give more money to representatives with the "lowest price", i.e. moderate or centrist Republicans. For exactly the same reason, we can anticipate that special interests will also target moderate Democrats more than ideological liberals since centrist Democrats are easier to sway when the finance industry wants less government involvement. Therefore, an implication of our trade-off results is that we should observe an inverted-U shape pattern between financial industry campaign contributions and political ideology. This is exactly what we find in Figure 6. A regression of log financial industry campaign contributions on the DW-nominate ideology score and its square term shows that the inverted U-shape pattern is statistically significant at the 1% level (Table A2 in the appendix).

8 Conclusion

We examine Congressional voting patterns on the AHRFPA of 2008 and the EESA of 2008, which represent two of the most significant pieces of federal legislation in U.S. economic history. In contrast to previous studies in political economy, we are able to isolate the effects of constituent and special interests on politician voting behavior, even after controlling for politician ideology. We find that constituent interests strongly influence politician voting patterns on the AHRFPA, with Republicans being more likely to vote in favor of the legislation if their district is experiencing high mortgage default rates. Politicians are extremely precise in their response to constituent interests, and they respond more strongly to their own supporters within the electorate. A likely channel for the importance of constituent interests is electoral competition. In addition, special interest campaign contributions from the financial services industry is positively related to votes in favor of the EESA. This result is robust to the inclusion of politician ideology, the fraction of the electorate employed by the financial services industry, and census demographic controls. Our results are consistent with the hypothesis that politicians voted in favor of the EESA in part due to special interest campaign contributions from the financial services industry.

Finally, we demonstrate the importance of the trade-off between politician ideology and height-

ened constituent and special interests. While politicians are influenced by constituent and special interests in their voting behavior, we find that the effect of constituent and special interests is significantly smaller for conservative politicians. This finding suggests that conservatives stick to their political ideology even in the midst of a severe financial crisis.

Our research suggests further fruitful avenues of investigation. An interesting empirical question concerns linking the legislators' response during the crisis with the electoral response of voters in the November 2008 elections. Systematic electoral punishment of politicians by certain constituencies (troubled debtors/financial industry employees) may potentially arise even in presence of ex ante optimal voting decisions by representatives.

A second avenue of investigation concerns the political economy of the mortgage expansion. While this analysis focuses on the response to the mortgage default crisis, a closely related area of future research is the political economy of the subprime mortgage credit expansion that preceded the crisis. In particular, from 2000 to 2005, Mian, Sufi and Trebbi (2008) show that the mortgage industry increasingly targets politicians from districts in which there are a high fraction of subprime borrowers. They also show that contributions from the mortgage bankers and brokers industry systematically predict cosponsorship of deregulating and industry-friendly bills. Preliminary findings suggest that our results here are a first step in a larger effort to understand the role of the U.S. government in the subprime mortgage credit expansion.

References

Acemoglu, Daron and James Robinson 2001. "A Theory of Political Transitions", American Economic Review September 2001, volume 91, pp 938-963.

Acemoglu, Daron; Simon Johnson and James Robinson 2005. "The Rise of Europe: Atlantic Trade, Institutional Change and Growth", American Economic Review, June 2005, volume 95, pp. 546-579.

Alston, Lee 1984. "Farm Foreclosure Moratorium Legislation: A Lesson from the Past", American Economic Review, Vol. 74, No. 3 (Jun.), pp. 445-457

Ansolabehere, Stephen; de Figueiredo, John M.; Snyder, James M. (2003). "Why Is There So Little Money in U.S. Politics?" The Journal of Economic Perspectives, Volume 17, Number 1, 1 March, pp. 105-130(26).

Austen-Smith, David 1987. "Interest Groups, Campaign Contributions and Probabilistic Voting." Public Choice, 54(2), 123–139.

Austen-Smith, David 1995. "Campaign Contributions and Access." The American Political Science Review 89(3): 566-581.

Bernstein, R.A., 1989. Elections, Representation, and Congressional Voting Behavior: The Myth of Constituency Control. Englewood Cliffs, Prentice-Hall.

Bolton, Patrick and Howard Rosenthal, "Political Intervention in Debt Contracts." Journal of Political Economy, 110: 1103-34.

Bombardini, Matilde and Francesco Trebbi 2008 (a). "Votes or Money? Theory and Evidence From the U.S. Congress.", mimeo University of Chicago.

Bombardini, Matilde and Francesco Trebbi 2008 (b). "Competition and Political Organization: Together or Alone in Lobbying for Trade Policy?", mimeo University of Chicago.

Dodd, Chris, "Summary of the Emergency Economic Stabilization Act of 2008", available at http://banking.senate.gov/public/_files/latestversionEESASummary.pdf

Dougan S.W.R., Munger, M.C., 1989. "The Rationality of Ideology". Journal of Law and Economics 32, 119–142.

Fiorina, Morris. 1974. Representatives, Roll Calls, and Constituencies. Lexington, MA: Lexington Books.

Gawande, Kishore and Usree Bandyopadhyay. 2000. "Is Protection for Sale? A Test of the Grossman-Helpman Theory of Endogenous Protection." Review of Economics and Statistics 89:139-152.

Gilligan, Thomas W., William Marshall and Barry R. Weingast, 1989, Regulation and the theory of legislative choice: The Interstate Commerce Act of 1887. Journal of Law and Economics 32, 35-61.

Goldberg, Pinelopi and Giovanni Maggi. 1999. "Protection for Sale: An Empirical Investigation." American Economic Review 89: 1135-1155.

Grier, Kevin B. and Michael C. Munger. 1991. "Committee Assignments, Constituent Preferences, and Campaign Contributions." Economic Inquiry. 29: 24– 43.

Grossman, Gene, and Elhanan Helpman. 1994. "Protection for Sale." American Economic Review 84: 833-850.

Grossman, Gene. M., Helpman, Elhanan., 2001. Special Interest Politics. MIT Press.

Heckman, James J., and James M. Snyder, Jr. 1997. "Linear Probability Models of the Demand for Attributes with an Empirical Application to Estimating the Preferences of Legislators." Rand J. Econ. 28 (special issue): S142–S189.

Kalt, Joseph P. and Mark A. Zupan, 1984. "Capture and ideology in the economic theory of politics", The American Economic Review 74, 279-300.

Kau, J.B., Rubin, P.H., 1979. "Self-interest, ideology, and logrolling in congressional voting". Journal of Law and Economics 22, 365–384.

Kau, J.B., Rubin, P.H., 1993. "Ideology, voting and shirking". Public Choice 76, 151–172.

Khwaja, Asim and Atif Mian, 2005, "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market," Quarterly Journal of Economics, 120: 1371-1411.

Kroszner, Randall and Philip Strahan, 1999, "What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions", Quarterly Journal of Economics, 114: 1437-1467.

Kroszner, Randall and Raghuram Rajan, 1994, "Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking Before 1933", American Economic Review, 84: 810-32.

Kroszner, Randall, 1994, "Financial Regulation" in P.J. Boettke: The Elgar Companion to Austrian Economics. Aldershot, U.K.: Elgar 419-424.

Lee, D. Moretti, E. and M. Butler 2004. "Do voters affect or elect policies? Evidence from the US House". Quarterly Journal of Economics, 119(3) pp. 807-859

Levitt, Steven D. 1996. "How Do Senators Vote? Disentangling the Role of Voter Preferences, Party Affiliation, and Senator Ideology." American Economic Review 86 (June): 425–41.

Mian, Atif R. and Sufi, Amir, 2008. "The Consequences of Mortgage Credit Expansion: Evidence from the 2007 Mortgage Default Crisis", NBER Working Papers 13936.

Mian, Atif R., Sufi, Amir, and Francesco Trebbi 2008. "The Political Economy of the U.S. Mortgage Expansion". In Progress.

Nunez, Steven, and Howard Rosenthal 2004. "Bankruptcy Reform in Congress: Creditors, Committees, Ideology, and Floor Voting in the Legislative Process." Journal of Law, Economics and Organization 20: 527-557.

Paletta, Damian and James Hagerty, 2008, "Housing Bill Will Extend Federal Role in Markets," Wall Street Journal, July 24: A1

Peltzman, Sam. 1976. "Toward a More General Theory of Regulation." Journal of Law and Economics 19: 211-240.

Peltzman, Sam. 1984. "Constituent Interest and Congressional Voting." Journal of Law and Economics 27: 181-210.

Peltzman, Sam. 1985. "An Economic Interpretation of the History of Congressional Voting in the Twentieth Century," American Economic Review 75 (September), 656-75.

Poole, Keith T., and Howard Rosenthal. 1985. "A Spatial Model for Legislative Roll Call Analysis." American Journal of Political Science, 357–384.

Poole, Keith T. and Howard Rosenthal. 1996. "Are Legislators Ideologues or the Agents of Constituents?". European Economic Review, 40: 707-717.

Poole, Keith T. and Howard Rosenthal. 1997. Congress: A Political-Economic History of Roll Call Voting. Oxford: Oxford University Press.

Romer, Thomas and Barry R. Weingast, 1991. "Political Foundations of the Thrift Debacle", in A. Alesina and G. Carliner (eds.), Politics and Economics in the Eighties, Chicago: University of Chicago Press.

Rucker, R.R.; Alston, L.J. "Farm failures and government intervention: a case study of the 1930's" American Economic Review, v. 77(4) p. 724-730.

Stewart, Charles III and Jonathan Woon 2008. Congressional Committee Assignments, 103rd to 110th Congresses, 1993–2007: House, MIT mimeo.

Stigler, G., 1971. "The theory of economic regulation". Bell Journal of Economics 2, 3–21.

Snyder, James M.1991. "On Buying Legislatures" Economics and Politics, 3(2): 93-109.

Stratmann, Thomas. 1991. "What Do Campaign Contributions Buy? Deciphering Causal Effects of Money and Votes." Southern Economic Journal, January, 57: 606–20.

Stratmann, Thomas. 2002. "Can Special Interests Buy Congressional Votes? Evidence from Financial Services Legislation". The Journal of Law and Economics, 45, No. 2, 345-373.

Stratmann, Thomas. 2005. "Some Talk: Money in Politics. A (partial) review of the literature." Public Choice, 124:1-2, 135-156.

Table 2

Correlation Matrix for Constituent Interests, Special Interests, and Politician Ideology

A. Full Sample

	DW Nominate Ideology Score	Mortgage Default Rate (07Q4)
Mortgage Default Rate (07Q4)	-0.268***	
Ln(Financial Industry Campaign Contributions)	0.073	-0.142***

B. Democrats

	DW Nominate Ideology Score	Mortgage Default Rate (07Q4)
Mortgage Default Rate (07Q4)	-0.189***	
Ln(Financial Industry Campaign Contributions)	0.284***	-0.166**

C. Republicans

	DW Nominate Ideology Score	Mortgage Default Rate (07Q4)
Mortgage Default Rate (07Q4)	-0.007	
Ln(Financial Industry Campaign Contributions)	-0.162**	-0.098

***,**,* Correlation statistically distinct from 0 at the 1%, %5 and 10% levels, respectively.

Table 3

Voting Patterns on the American Housing Recovery and Foreclosure Prevention Act of 2008

Panel A: 519 Vote (July 26, 2008)

	(1)	(2)	(3)
	Democrats	Republicans	Total
# Voting "Yes"	227	45	272
# Voting "No"	3	149	152
Total	230	194	424

Panel B: 301 Vote (May 8, 2008)

	(1)	(2)	(3)
	Democrats	Republicans	Total
# Voting "Yes"	229	39	268
# Voting "No"	0	154	154
Total	229	193	422

Panel C: Switchers (Republican Only)

	(1)	(2)	(3)
	# Voting "Yes" on 301	# Voting "No" on 301	Total
# Voting "Yes" on 519	24	19	43
# Voting "No" on 519	14	131	145
Total	38	150	188

Table 8

Voting Patterns on the Emergency Economic Stabilization Act of 2008

Panel A: 681 Vote (October 3rd, 2008)

	(1)	(2)	(3)
	Democrats	Republicans	Total
# Voting "Yes"	172	91	263
# Voting "No"	63	108	171
Total	235	199	434

Panel B: 674 Vote (September 29th, 2008)

	(1)	(2)	(3)
	Democrats	Republicans	Total
# Voting "Yes"	140	65	205
# Voting "No"	95	133	228
Total	235	198	433

Panel C: Switchers

	(1)	(2)	(3)
	# Voting "Yes" on 674	# Voting "No" on 674	Total
# Voting "Yes" on 681	204	58	262
# Voting "No" on 681	1	170	171
Total	205	228	433

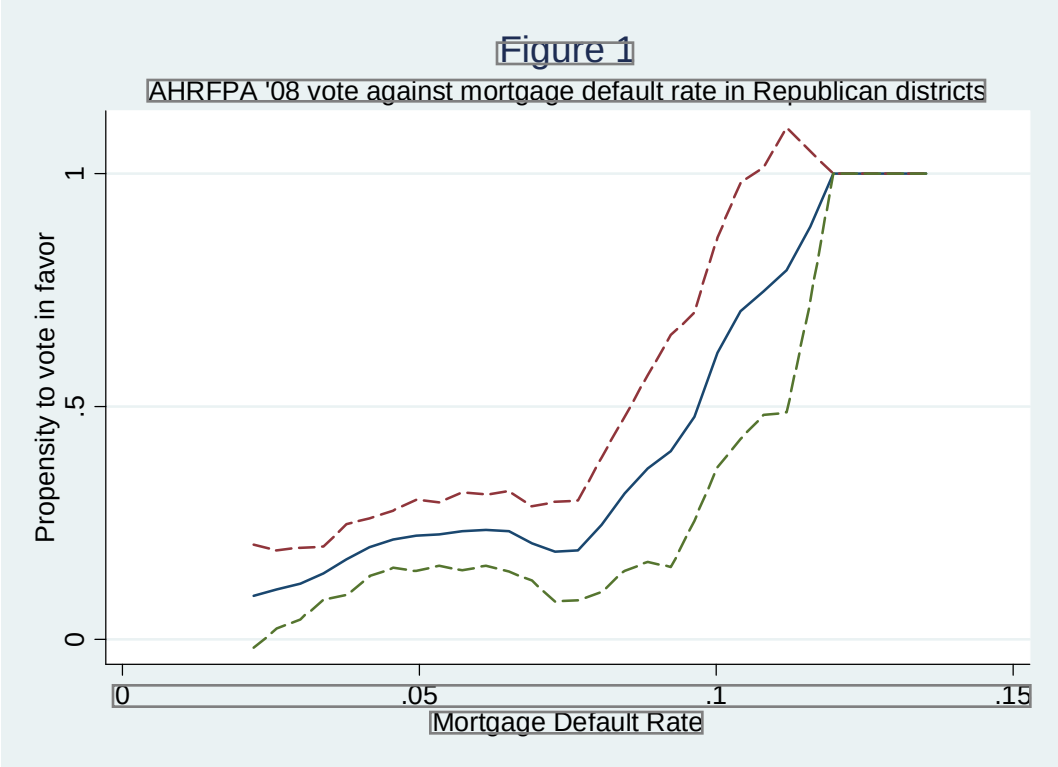
Figure 1
AHRFPA '08 vote against mortgage default rate in Republican districts
Propensity to vote in favor
0
.5
1
0
.05
.1
.15
Mortgage Default Rate

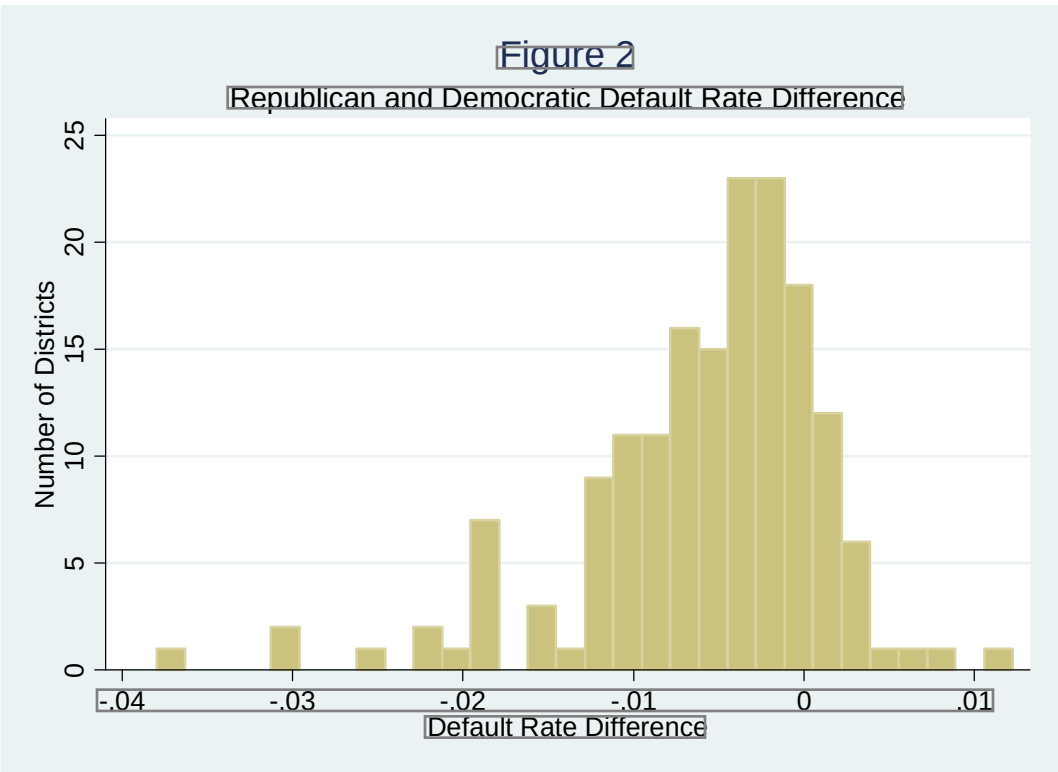
Figure 2
Republican and Democratic Default Rate Difference
Number of Districts
0
5
10
15
20
25
-.04
-.03
-.02
-.01
0
.01
Default Rate Difference

Figure 3

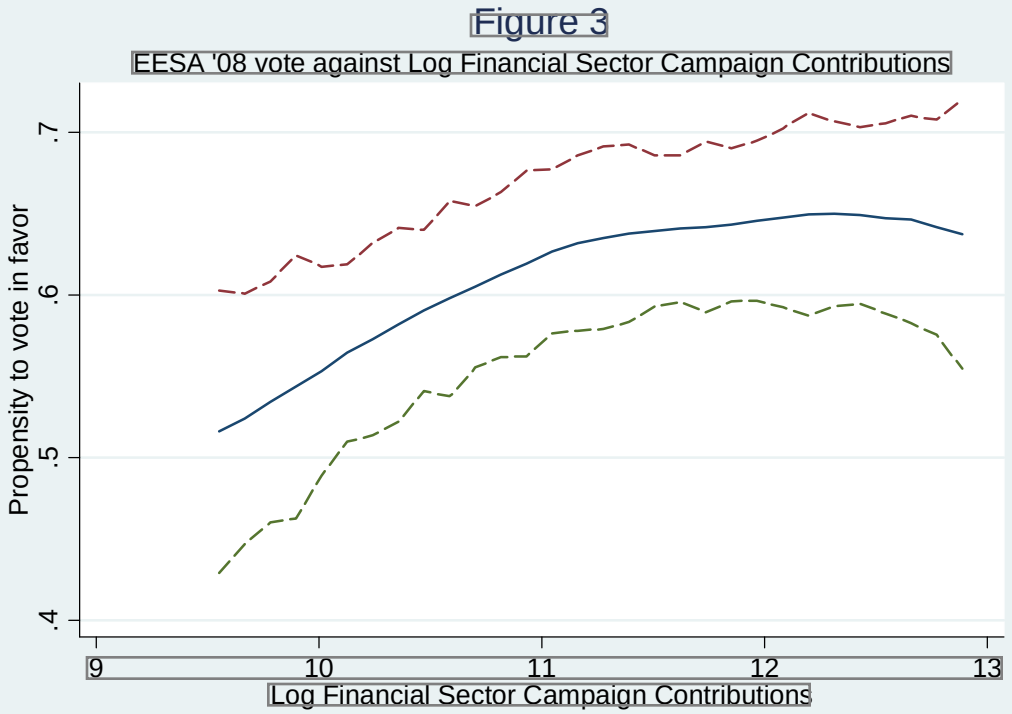

Figure 4

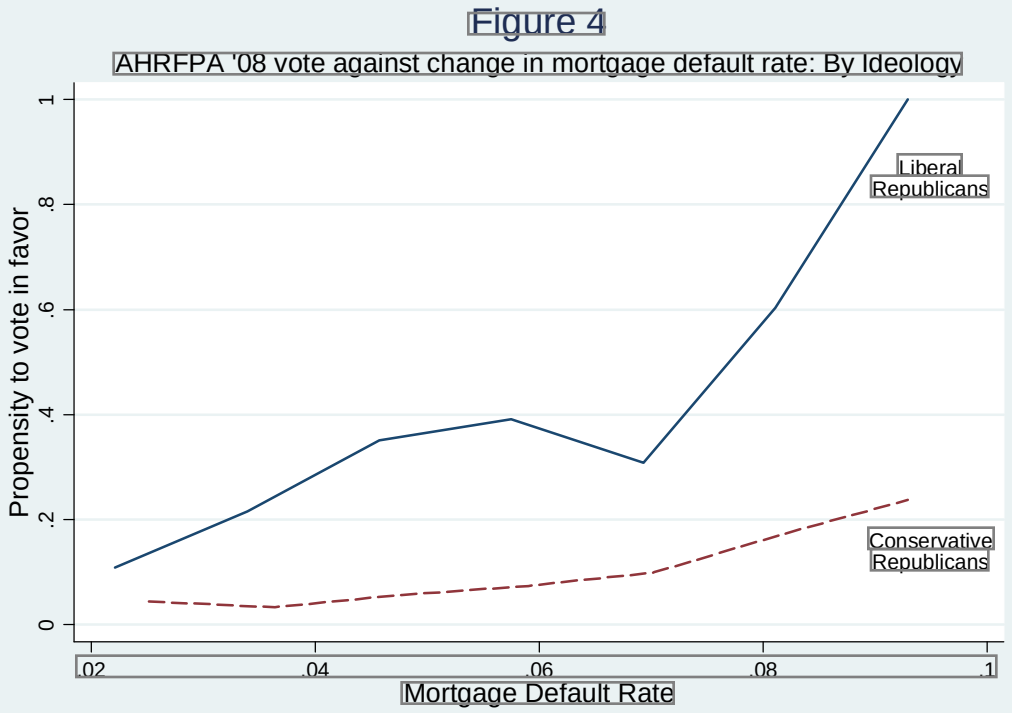

Figure 5

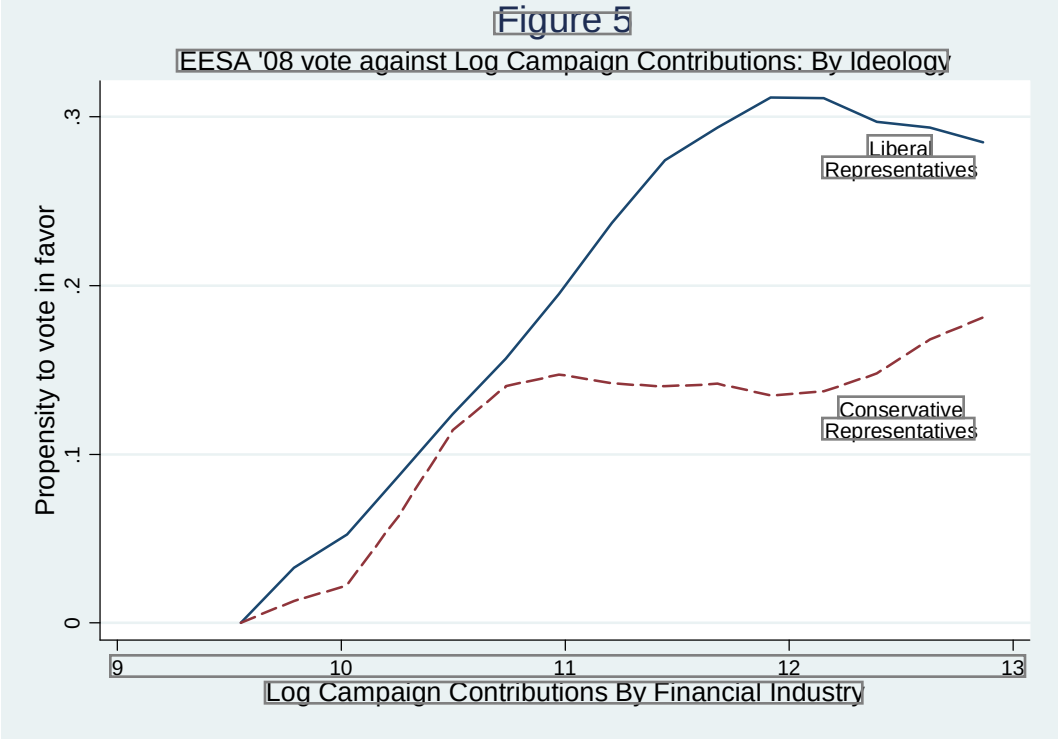

Figure 6

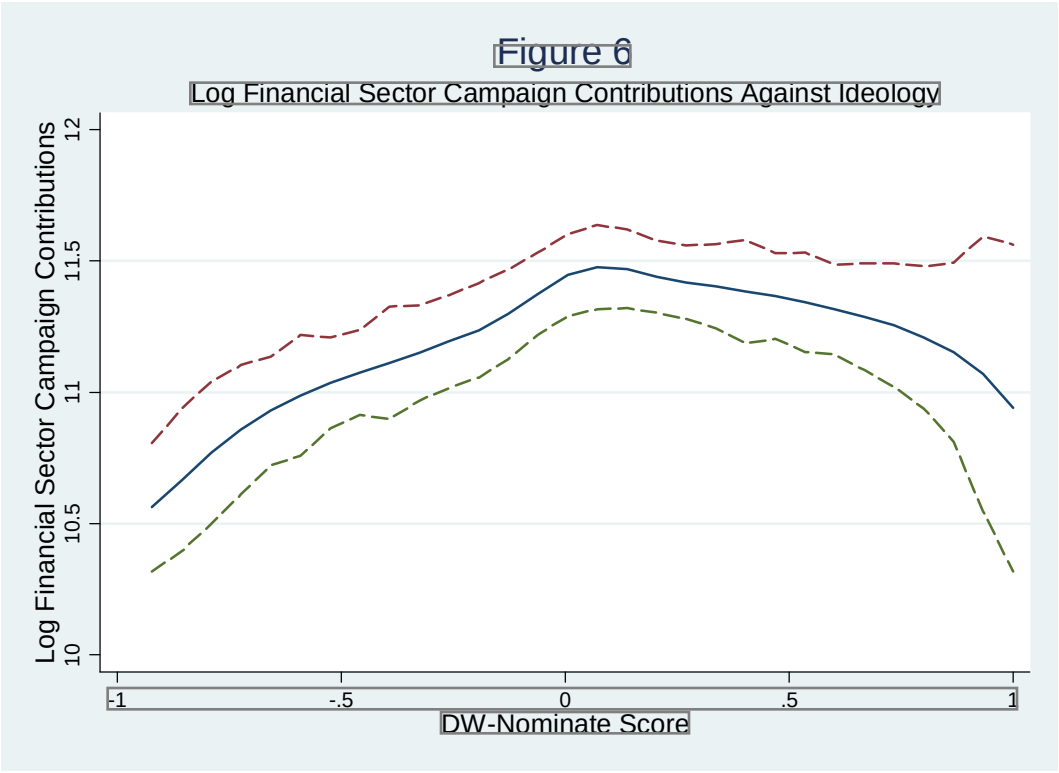

Figure A1

Frequency Distributions Of Our Main R.H.S. Variables

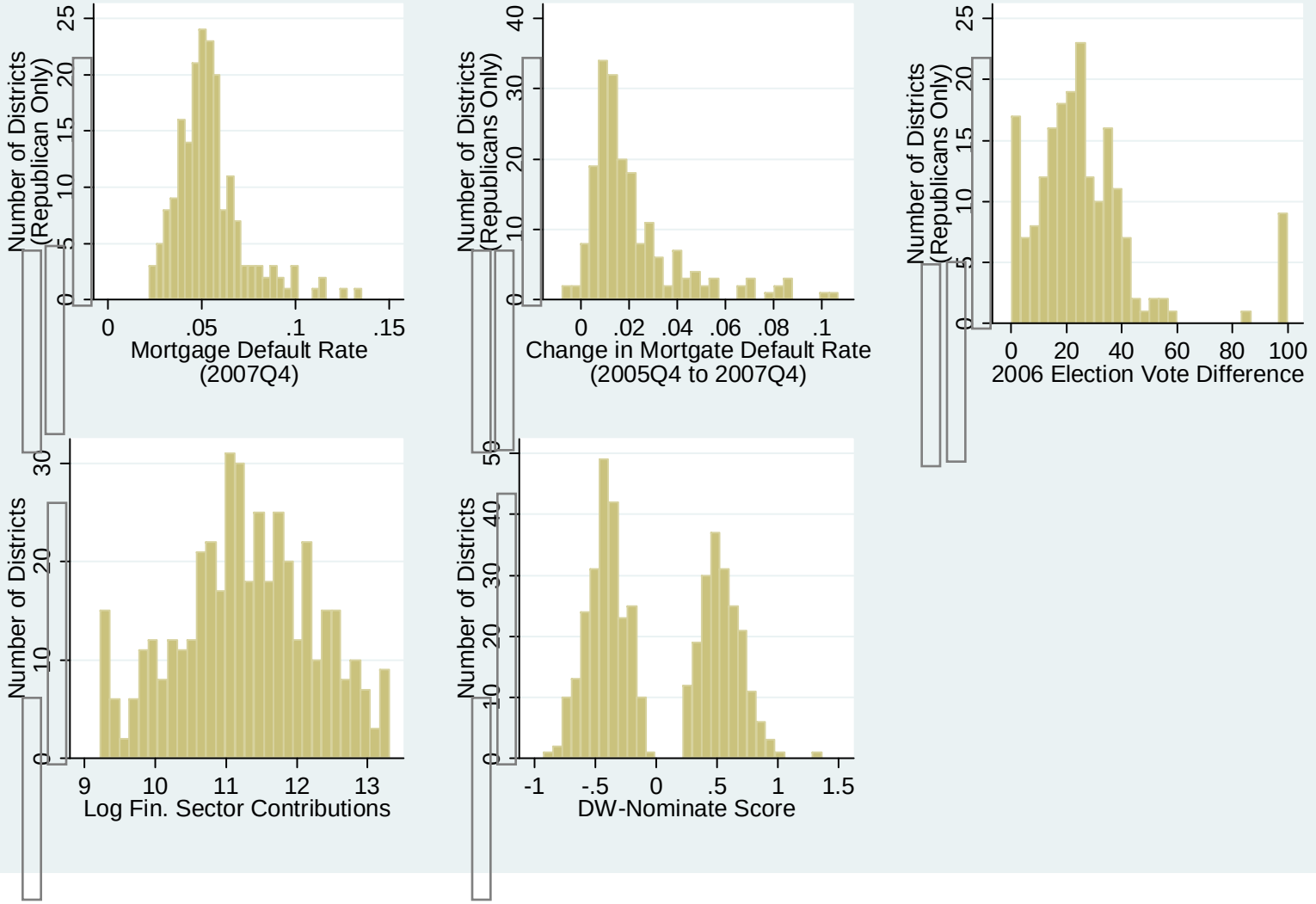

Figure A2

AHRFPA '08 vote against fraction of mortgage accounts in default

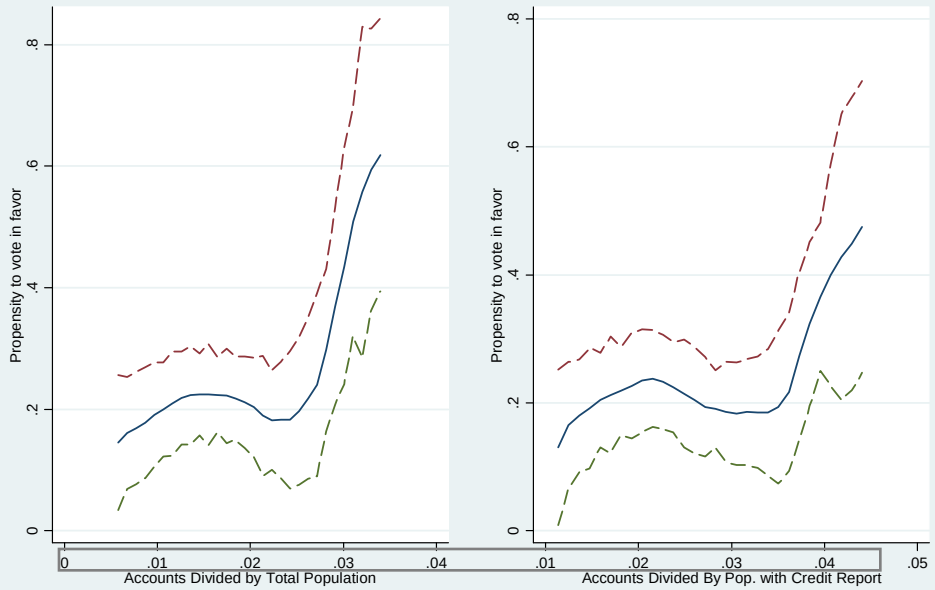

Table A1

Robustness of Constituent Interest Result To Right Tale Of Default Distribution

	Right Tale Winsorized At 5%		Sample Below 07Q4 Default Rate	Sample Above 07Q4 Default Rate
	(1)	(2)	(3)	(4)
	Dependent Variable: Voted in favor of AHRFPA '08 (July 26th, 2008)			
Mortgage Default Rate (07Q4)	7.2***		11.36***	8.3***
	(1.69)		(4.40)	(1.98)
DW Nominate Ideology Score	-0.87***	-0.83***	-0.77***	-0.89***
	(0.16)	(0.16)	(0.21)	(0.26)
Ln(Financial Industry Contributions per cycle)	0.02	0.01	-0.02	0.02
	(0.01)	(0.01)	(0.04)	(0.01)
Mortgage Default Rate (05Q4)		2.42		
		(2.34)		
ΔMortgage Default Rate (05Q4-07Q4)		8.61***		
		(1.69)		
N	192	192	97	95
R^2	0.21	0.25	0.18	0.27

All regressions include a constant. Political controls include financial committee indicator variable, terms served, and margin of victory in 2006 election. Census controls include percentage Hispanic, percentage black, percentage living in urban setting, log of median household income, percentage below poverty, percentage less than high school, and percentage with high school only. ***,**,* Coefficient estimate statistically distinct from 0 at the 1%, 5%, and 10% levels, respectively.

Table A2
Determinants Of Campaign Contribution

		Political and Census Controls	Political and Census Controls
	(1)	(2)	(3)
	Dependent Variable:		
	Log Financial Industry Campaign Contribution per Cycle		
DW Nominate Ideology Score	0.5***	0.31**	0.29*
	(0.14)	(0.16)	(0.17)
(DW Nominate Ideology Score)^2	-1.94***	-1.96***	-1.89***
	(0.63)	(0.60)	(0.59)
Fraction Constituents Working in Financial Industry			0.05
			(0.04)
Fraction Constituents with >$200,000 Income			8.11*
			(4.49)
Constant	11.66***	6.11	13.68
	(0.14)	(9.72)	(12.30)
N	433	433	433
R^2	0.06	0.21	0.22

All regressions include a constant. Political controls include financial committee indicator variable, terms served, and margin of victory in 2006 election. Census controls include percentage Hispanic, percentage black, percentage living in urban setting, log of median household income, percentage below poverty, percentage less than high school, and percentage with high school only. ***,**,* Coefficient estimate statistically distinct from 0 at the 1%, 5%, and 10% levels, respectively.