Online Appendix to "The Political Economy of the U.S. Mortgage Default Crisis"

Not For Publication

1 Robustness of Constituent Interest Result

Table OA1 shows that the effect of mortgage default rates on the likelihood of a representative voting in favor of the AHRFPA is not driven by the right tail of the default distribution. Columns 1 and 2 replicate specifications on a sample in which the right tail of the distribution is winsorized at the 5% level. Columns 3 and 4 split the sample by the median default rate and shows the sensitivity of the vote with respect to default rates is robust in both subsamples.

2 Special Interests and the EESA bill

To further our quantitative assessment of the effect of special interests influence on the EESA bill, in this appendix we make use of an identification strategy similar in spirit to Besley and Case (1995) and Bronars and Lott (1997). Within the linear probability setting employed in the paper it is straightforward to set up a linear semi-structural system of voting and campaign contributions as:

$$v_i = a^1 + b^1 * Z_i + c^1 * SI_i + \varepsilon_i^1 \qquad \text{vote equation} \tag{1}$$

$$SI_i = a^2 + b^2 * Z_i + \varepsilon_i^2 + u_i \qquad \text{money equation} \tag{2}$$

where $cov(\varepsilon_i^1, \varepsilon_i^2) \neq 0$, $cov(\varepsilon_i^1, u_i) = 0$, and $Z_i = [ID_i \; CI_i \; X_i]$, where X_i is the standard set of controls employed in Table 9 of the main text and Z_i is assumed orthogonal to the error terms (see Stratmann, 2002). Let us emphasize that $SI_i = \frac{1}{T} \sum SI_{t,i}$, so it incorporates both current cycle contributions and the history of contributions from the financial industry. Notice also that the covariance $cov(\varepsilon_i^1, \varepsilon_i^2)$ is not easily signed. It may be positive, as congressmen who prefer supporting Wall Street may receive money from financial institutions to get reelected and congressmen who support financial institutions will also vote for the bailout. The covariance $cov(\varepsilon_i^1, \varepsilon_i^2)$ may, alternatively, be negative if financial institutions mostly attempt to befriend politicians less likely to support them. The methodological issue is that it is difficult to break the perfect overlap between covariates affecting the "vote equation" and the "money equation" on theoretical grounds and we cannot identify the parameter c^1 without an instrumental variable.

The direct implication of this argument is that estimating the vote equation (1) by itself delivers a coefficient estimate asymptotically equal to $c^1 + cov(\varepsilon_i^1, \varepsilon_i^2)$. In the text our discussion of sensitivity analysis focused precisely on increasing the number of controls in Z_i, in as much to make the empirical counterpart of ε_i^2 almost pure noise and, hence, lower the correlation between residual unobservables ε_i^2 and ε_i^1 to zero.

We now describe a different take on the issue, based on estimation of the structural parameters. Particularly, under the following three identifying assumptions we can employ information on retiring congressmen to assess if campaign money affects votes directly (i.e. $c^1 > 0$). The first assumption is that for retiring congressmen campaign contributions should not affect the EESA vote directly, a theoretical constraint $c1 = 0$. The argument is that retiring congressmen are unconcerned about reelection, so electoral contributions should not buy their decision on the EESA vote (and any remaining effect should be due to $cov(\varepsilon^1, \varepsilon^2)$). Indeed, retiring congressmen receive very low contributions in their last cycle and in our case financial contributions mostly reflect the pre-2007 historical averages. This implies that by running (1) on the subsample of retiring congressmen the coefficient on SI_i should only capture $cov(\varepsilon_i^1, \varepsilon_i^2)$.

The second assumption is that the retirement decision of congressmen is not driven by the financial sector campaign contributions, which does not seem unreasonable for the majority of cases.

A third assumption is that $cov(\varepsilon_i^1, \varepsilon_i^2)$ is homogeneous across individual i's.

Our identification strategy is equivalent to introducing nonlinear constraints on the structural parameters of the system. To see this, define R is an indicator variable taking value 1 if the representative is running and 0 otherwise. The system becomes:

$$
\begin{aligned}
v_i &= a^1 + b^1 * Z_i + c^1 * R * (a^2 + b^2 * Z_i + \varepsilon_i^2 + u_i) + \varepsilon_i^1 \\
SI_i &= a^2 + b^2 * Z_i + \varepsilon_i^2 + u_i.
\end{aligned}
$$

We estimate this system through Feasible Generalized Nonlinear Least Squares (asymptotically equivalent to Full-Information Maximum Likelihood in this setting). The intuition for identification comes directly by considering the reduced-form model (by replacement of the money equation into the vote equation):

$$
\begin{aligned}
v_i &= (a^1 + c^1 * a^2) + (b^1 + c^1 * b^2) * Z_i + (c^1 * u_i + c^1 * \varepsilon_i^2 + \varepsilon_i^1) \\
&= \widetilde{a} + \widetilde{b} * Z_i + \widetilde{\varepsilon}_i.
\end{aligned}
$$

and applying the following procedure:

1) Regress v_i on Z_i for $R = 0$ and obtain the structural parameters b^1

2) Regress v_i on Z_i for $R = 1$ and obtain the reduced-form parameters $\widetilde{b}$

3) Regress SI_i on Z_i for $R = 1$ and obtain the structural parameters b^2

4) Obtain the structural parameter $c^1 = (\widetilde{b} - b^1)/b^2$

As reported in this appendix Table OA1, we again find strong and significant direct effects of SI on EESA when the endogenous selection of campaign money targets is accounted for. We also obtain a larger, 1 percent statistically significant estimate of $c^1 = 0.48$.

Overall, all our approaches tend to support the view of influence of political contributions on the EESA, in line with the results described in Table 9 of the text.

3 Geography of Default Rates and Ideology

The congressional maps of default rate and ideology score for Republicans and Democrats for the 110th are reported separately in Figures OA1 and OA2. Both figures emphasize the high degree of spatial heterogeneity that is essential to the identification strategy of our paper. The maps were developed employing the 110th Congress shape file available from the US Bureau of the Census.[1] For presentation purposes, we omit Alaska and Hawaii from the graph.

[1] http://www.census.gov/geo/www/cob/cd_metadata.html

References

Besley, Tim and Anne Case (1995) "Incumbent Behavior: Vote Seeking, Tax Setting and Yardstick Competition" (with Anne Case), American Economic Review, 85, 1, pp: 25-45.

Bronars, Stephen and John Lott (1997) "Do Campaign Donations Alter How Politicians Vote? Or, Do Donors Support Candidates Who Value the Same Things That They Do?" Journal of Law and Economics, 40(2), pp. 317-350

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.

Table OA1
Robustness of Constituent Interest Result To Right Tail of Default Distribution

	Right Tail Winsorized At 5%		Sample Below 07Q4 Median Default Rate	Sample Above 07Q4 Median Default Rate
	(1)	(2)	(3)	(4)
	Dependent Variable: Voted in favor of AHRFPA '08 (July 26th, 2008)			
Mortgage default rate (07Q4)	6.87**		11.41*	8.28**
	(1.69)		(4.42)	(2.01)
DW nominate ideology score	-0.88**	-0.85**	-0.77**	-1.01**
	(0.15)	(0.16)	(0.21)	(0.26)
Ln(Financial Industry Contributions per cycle)	0.03	0.03	-0.02	0.11*
	(0.03)	(0.03)	(0.04)	(0.04)
Mortgage default rate (05Q4)		2.03		
		(2.32)		
ΔMortgage default rate (05Q4-07Q4)		8.30**		
		(1.69)		
N	194	194	97	97
R^2	0.21	0.24	0.18	0.29

All regressions include a constant. **,*,+ Coefficient estimate statistically distinct from 0 at the 1%, 5%, and 10% levels, respectively.

Table OA2
Special Interests, Constituency, and Voting Patterns on EESA

Feasibile Generalized Nonlinear Least Squares	Voted in favor of EESA '08	Ln(Financial Industry Contributions per cycle)
Equation:	(1)	(2)
Ln(Financial Industry Contributions per cycle)	0.466***	--
	(0.10)	
Mortgage Default Rate (07Q4)	4.01***	-6.5***
	(1.43)	(2.38)
DW Nominate Ideology Score	-0.22***	-0.12
	(0.09)	(0.21)
Finance Committee	-0.44***	0.94***
	(0.11)	(0.12)
Number of Terms Served	0.039***	-0.073***
	(0.009)	(0.015)
Vote Margin '06 Elections	0.003**	-0.005
	(0.001)	(0.003)
Fraction Constituents Working In Financial Industry	0.01	0.03
	(0.01)	(0.03)
Fraction Constituents with >$200,000 Income	0.72	5.07**
	(1.25)	(2.32)
Observations	434	434
R-squared	18.66	16.7

This table presents FGNLS coefficient estimates of voting patterns on EESA Vote (passage of the EESA of 2008). The sample includes voting Republicans and Democrats. Robust standard errors in parentheses. ***,**,* indicate coefficient estimate statistically distinct from 0 at the 1%, %5 and 10% levels, respectively. Both equations contain unconstrained constants (not reported).

Figure OA1:
Mortgage Defaul Rates by Congressional District
110th Congress, 2007 Q4

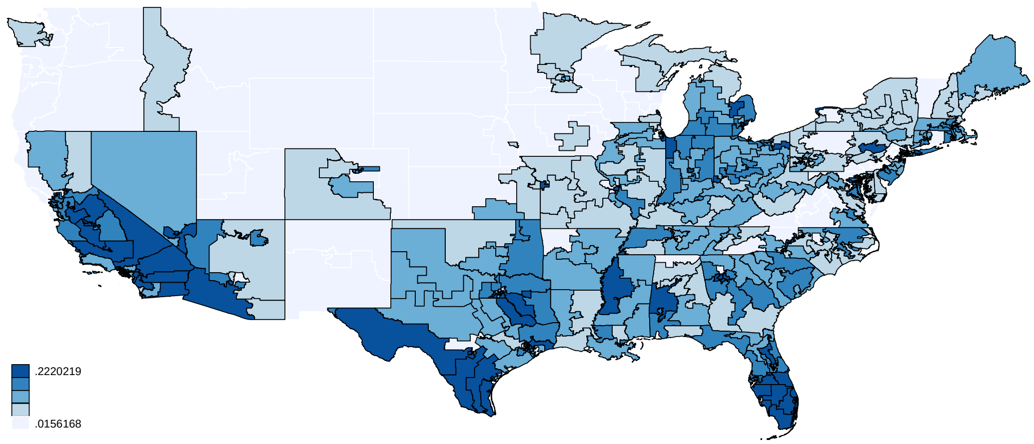

Figure OA2:
DW-Nominate Score by Congressional District
110th Congress