The vote on the Wall Street bailout: A Political Winner’s Curse

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This version: February 2014

Abstract

The 2008 bank bailout received many opposing votes in Congress and initially failed before being enacted despite strong calls for it by experts. We rationalize this result in a model wherein voters and politicians are uncertain whether policy intervention is needed. Since a successful preventive policy impedes the verification of its necessity, politicians who disagree with their voters expect the highest reward when loosing the vote. This winner’s curse generates narrow vote results since comfortable margins induce incentives to deviate. In an empirical application, model predictions match the observed vote results closely.

JEL classification: D72, D82
Keywords: Political Economy, Imperfect Information

1 Introduction

On October 3, 2008, the Emergency Economic Stabilization Act (EESA), the so called Wall Street bailout bill, passed the US congress. The bill was justified with the severe consequences of not conducting it (e.g., Congleton 2012). According to former Senator Evan Bayh, "Ben Bernanke warned Senators that the sky would collapse if the

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banks weren’t rescued.”¹ In spite of this drastic prediction of the Fed chairman, the EESA took a narrow legislative history. The House rejected the bill in a first vote on September 29. In reaction, the Dow Jones Industrial Average and the S&P 500 experienced their biggest daily point losses ever. Four days later, the House enacted an amended bill into law, but voting only 263-171 in favor of the EESA.² If the consequences of not bailing out banks were so severe, why did so many Representatives vote against it?

This paper rationalizes voting behavior on the EESA in a model of a potential threat to the economy – e.g., a financial market meltdown – which can be prevented by a costly policy measure – e.g., a bank bailout. As an important ingredient of the model, there is imperfect information about whether the threat is real, embodied in imperfect signals about the state of the economy. Regarding the EESA, this appears as a reasonable assumption: No one could know for sure the consequences of letting banks go bankrupt – and even does not today.³

The preventive nature of the considered policy implies a peculiar information structure which is key for our analysis. Voters’ information sets at the time of the next election depend on the political choices taken before. When the preventive policy was conducted, it is not perfectly observable how severe the consequences of not conducting it would have been. In Bernanke’s terms, since the banks were eventually rescued, we will never know for sure whether the sky would really have collapsed if they weren’t. Indeed, there has been little change in views of the bank bailout between 2008 and 2012, according to Pew Research Center.⁴ On the contrary, when the policy is not conducted, the state of the economy becomes perfectly observable. Again in Bernanke’s terms, if the banks had not been rescued, everyone would have seen whether the sky really collapsed.

¹Quote from David Weigel, http://www.slate.com/content/slate/blogs/weigel/2010/12/13/why_gleann_beck_is_like_evancayn.htmlv.
²Amendments included, e.g., an increase in the accounts eligible to FDIC insurance (Congleton 2012).
³The importance of imperfect information in politics has been stressed by Downs (1957). Empirical support is provided by, e.g., Nannestad and Paldam (1997) and Duch et al. (2000).
This information structure puts politicians in a dilemma. Provided
that they expect the threat to be real but voters disagree ex-ante,
politicians can try to convince voters by not running the policy and
letting them observe the damage. But, knowing the severity of the
threat ex-post, voters would evaluate politicians’ passivity negatively.
If politicians, however, conduct the preventive policy and save the
economy from harm, voters would never find out about the threat
for sure. Consequently, they may continue to oppose the policy, and
evaluate politicians’ intervention negatively as well. In what follows, we
focus on individual politicians rather than on parties. Regarding the
EESA, neither party voted clearly in either way.

In our set-up, there are situations where, for individual politicians,
it is best to loose the vote in parliament. Such a winner’s curse arises
when voters and politicians disagree ex ante. Suppose the median voter
of a politician initially opposes the policy while the politician herself per-
ceives it as necessary. If the preventive policy is not conducted and the
state of the economy eventually becomes obvious, the politician expects
the voter to change her mind. She is then best off supporting the policy
in parliament. If, however, the policy is conducted, the imperfect signals
which voters receive until the next election may not be clear enough to
induce a change in mind. Then, the politician is best off having voted
against the policy in parliament. In either case, the politician’s expected
reward is highest when loosing the vote in parliament. For politicians
of this kind, wider vote margins induce incentives to deviate from the
winning majority to the loosing fraction in order to avoid the winner’s
curse described above.

In fact, the preventive policy cannot pass parliament unanimously
in our model as long as some voters oppose it ex ante. The incentive
structure in our model can also lead to equilibria where the policy fails
in parliament even when all politicians perceive it as necessary. This
can have dramatic consequences for the economy. The sharp breakdown
in stock prices after the first House vote on the EESA can be seen as a
first glimpse of these consequences.

While we explain votes against the EESA as consequences of the
winner’s curse faced by individual politicians, Mian et al. (2010) and
Dorsch (2013) take the reverse position and provide empirical evidence
that a number of votes in favor of the EESA are explained by campaign donations from the financial sector. We provide empirical support for our winner’s curse hypothesis through a quantitative evaluation of our model. We use survey data from Pew Research Center on voters’ attitudes towards the bank bailout to quantify the model. About a third of Representatives are predicted to have faced the winner’s curse in the second House vote. Following this notion, they voted against the bill and lost the vote in the House to avoid punishment by voters which they had received had they won. Our model’s quantitative predictions match almost perfectly the result of the first House vote and they come fairly close to the result of the second House vote.

The model’s basic logic can be applied to many votes in the recent crises. Just like in the US, it was a recurrent pattern that arguably necessary preventive policies passed European parliaments only narrowly or did not receive a majority of votes from parties supporting the respective governments. In Italy and Greece, administrations were replaced due to their failure to organize majorities for austerity measures in parliament. Similarly, Germany’s credit guarantees for Greece only passed parliament due to approval of the opposition for several times. Further, the European Stability Mechanism (ESM) passed some national parliaments (e.g. in Estonia, Slovakia, and Slovenia) at very close margins.

The remainder of this paper is organized as follows. Section 2 presents the model set-up and Section 3 analyzes the incentives for individual politicians. Section 4 discusses the interaction of politicians in parliament. In Section 5, we discuss model extensions. Section 6 presents the empirical application. Section 7 concludes.

2 Model Set-up

Our model is populated by politicians and voters. The electoral system is characterized by single-member districts. We denote politician $i$’s median voter as voter $i$.

We consider a situation where there is a potential threat to the economy – e.g., a financial meltdown – which can be prevented by a costly policy action – e.g., a bank bailout. Formally, there are two possible states of the economy ($s = 0, 1$) and two policy options ($p = 0, 1$). The
good state where there is no threat to the economy is denoted by $s = 0$. In this good state, damage does not occur even without prevention. In turn, if the state of the economy is bad ($s = 1$), a damage would arise if not prevented by conducting the preventive policy. Policy passivity is denoted by $p = 0$ while $p = 1$ denotes running the preventive policy. Irrespective of the state of the economy $s$, the policy itself is costly. Costs of the policy and potential damage differ across districts. Individual costs are denoted by $c_i$ and damages are denoted by $d_i$. Dorsch (2013) gives a motivation for district heterogeneity in the context of the EESA and points to the different employment shares in the financial sector across districts. Table 1 summarizes utility of voter $i$ in the four constellations of states and policies. Costs accrue if the policy is conducted ($p = 1$). Damage occurs only in the bad state and if not prevented ($s = 1$ and $p = 0$). We assume $0 < c_i < d_i$ such that, knowing the state $s$, one would prefer policy $p = s$.

While the state $s$ is drawn by nature, the public choice $p$ is decided in parliament by simple majority voting. The number of politicians in parliament is $N > 1$. For simplicity, we assume that $N$ is odd. Individual politicians’ votes are denoted by $p_i$. We model the parliament as a group of politicians with individual and potentially different interests. Politicians are office-motivated and seek to be supported by their individual median voters to increase their re-election probabilities.

We assume that voters reward politicians according to their ex-post expected utility. Hence, if a politician supported the policy option $a_i$, which maximizes her median voter’s ex-post expected utility, $p_i = a_i$, her re-election probability increases (we denote this reward by $r_i = 1$) and does not so otherwise ($r_i = 0$). So, as is standard in political agency models (see, e.g., Austen-Smith 1987 und Grossman and Helpman 1996), future re-election chances shrink when a politician casts a vote which is

\[
\begin{array}{|c|c|c|}
\hline
& p = 0 & p = 1 \\
\hline
s = 0 & 0 & -c_i \\
\hline
s = 1 & -d_i & -c_i \\
\hline
\end{array}
\]

Table 1: Voter’s utility $u_i$ in the state-policy space.

\footnote{In our baseline model, we consider a single vote in parliament whose result is the final public choice. All key mechanisms can be demonstrated in this one-shot game. In Section 5, we provide an extension to repeated voting.}
dissonant to the interests of her constituents.\textsuperscript{7}

We now turn to describing the information structure of the model. Before the vote in parliament, voters and politicians receive potentially different signals about the state of the economy $s$ from which they form their prior expectations. At this point in time, the probabilities assigned to the bad state by politicians and voters are denoted by $\hat{\theta}_1 \neq \frac{1}{2}$ and $\tilde{\theta}_1 \neq \frac{1}{2}$, respectively. After the vote in parliament, the economic outcomes $u_i$ can be observed. Before the next election, agents receive a further signal $\sigma$ about the state of the economy. The signal can take the values 0 and 1 and equals the true state of the economy with probability $\pi \geq \frac{1}{2}$. Using the information in $u_i$ and $\sigma$ and the prior beliefs, politicians and voters build posterior beliefs $\hat{\theta}_2$ and $\tilde{\theta}_2$, respectively. The timing of events is summarized in Figure 1. We solve the model by backward induction.

3 Individual Behavior

3.1 Voters

Rewarding politicians. Voter $i$ rewards politician $i$ if her ex-post preferred policy option $a_i$ coincides with the politician’s vote $p_i$. $a_i$ depends on whether ex-post expected damage exceeds prevention costs,

$$a_i = \begin{cases} 1, & \tilde{\theta}_2 \cdot d_i > c_i \\ 0, & \text{else.} \end{cases}$$

Building posterior beliefs. Voters’ ex-post preferred policy option depends on the posterior belief $\tilde{\theta}_2$, see equation (1). The information set

\textsuperscript{7}Smyth et al. (1994), and Siemers and Bischoff (2013) provide strong empirical evidence for such backward-looking behavior of voters.

\textsuperscript{8}For $\pi < \frac{1}{2}$, $1 - \sigma$ would be a signal that equals the true state of the world with probability $1 - \pi > \frac{1}{2}$
upon which $\tilde{\theta}_2$ is build depends on the political choice $p$. Only if $p = 0$, the true state of the economy is perfectly revealed through the economic outcomes. If $u_i = -d_i$, then $s = 1$ and, if $u_i = 0$, then $s = 0$, see first column of Table 1. Then, the signal $\sigma$ does not carry any further information. By contrast, when the policy is conducted ($p = 1$), the observation of the economic outcome does not carry any information about the state of the economy since $u_i = -c_i$ in either case, see second column of Table 1. Then, voters need to rely on the imperfect signal $\sigma$.

Taken together, the posterior probability assigned to the bad state is

$$\tilde{\theta}_2 = \begin{cases} s, & p = 0 \\ \tilde{\theta}_2^{\text{high}}, & p = 1 \land \sigma = 1 \\ \tilde{\theta}_2^{\text{low}}, & p = 1 \land \sigma = 0, \end{cases}$$

(2)

where $\tilde{\theta}_2^{\text{high}} = \frac{\tilde{\theta}_1 \pi}{\tilde{\theta}_1 \pi + (1-\tilde{\theta}_1)(1-\pi)}$ and $\tilde{\theta}_2^{\text{low}} = \frac{\tilde{\theta}_1 (1-\pi)}{\tilde{\theta}_1 (1-\pi) + (1-\tilde{\theta}_1) \pi}$ are determined according to Bayes’ rule.

There are three types of voters depending on their individual prevention costs relative to potential damage, $\frac{c_i}{d_i}$. Table 2 summarizes the different types of voters. First, voters with rather high cost-to-damage ratios, $\frac{c_i}{d_i} > \tilde{\theta}_2^{\text{high}}$, would, in the end, support the preventive policy only when they are absolutely certain that the threat was real, i.e. only if $p = 0$ and $s = 1$ leading to $\tilde{\theta}_2 = s = 1$. These voters oppose the policy so strongly ex ante that even a signal $\sigma = 1$ can not convince them to support the policy (voters of type A). Second, voters with rather low cost-to-damage ratios, $\frac{c_i}{d_i} < \tilde{\theta}_2^{\text{low}}$, would oppose the policy only if they learned that there was actually no threat, i.e. only if $p = 0$ and $s = 0$ leading to $\tilde{\theta}_2 = s = 0$. These voters support the policy rather strongly ex ante and would still favor it even when they receive a signal $\sigma = 0$ (voters of type B). Third and finally, there are voters with medium cost-to-damage ratios, $\tilde{\theta}_2^{\text{low}} < \frac{c_i}{d_i} < \tilde{\theta}_2^{\text{high}}$, who are ex ante sufficiently uncertain such that the signal is decisive for their ex-post attitude provided that $p = 1$. In this case, they perceive the threat to be sufficiently likely to support the policy when they receive $\sigma = 1$. By contrast, when they receive $\sigma = 0$, they perceive the threat to be rather unlikely and oppose the policy ex post (voters of type C).
ex-post preferred policy option $a_i(\tilde{\theta}_2)$

<table>
<thead>
<tr>
<th>prevention costs $c_i$</th>
<th>$\tilde{\theta}_2 = 1$</th>
<th>$\tilde{\theta}_2 = \tilde{\theta}^{\text{high}}_2$</th>
<th>$\tilde{\theta}_2 = \tilde{\theta}^{\text{low}}_2$</th>
<th>$\tilde{\theta}_2 = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>type $A$</td>
<td>$\frac{c_i}{d_i} &gt; \tilde{\theta}^{\text{high}}_2$</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>type $B$</td>
<td>$\frac{c_i}{d_i} &lt; \tilde{\theta}^{\text{low}}_2$</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>type $C$</td>
<td>$\tilde{\theta}^{\text{low}}_2 &lt; \frac{c_i}{d_i} &lt; \tilde{\theta}^{\text{high}}_2$</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2: The different types of voters.

3.2 Politicians

When politicians vote on the policy in parliament, the signal $\sigma$ has not yet arrived. An individual politician chooses $p_i$ in order to be rewarded by voter $i$. The politician takes into consideration her expectation over voter $i$’s belief $\tilde{\theta}_2$, $c_i$ and $d_i$. Since $\tilde{\theta}_2$ depends on the public choice $p$, politicians are in a situation of strategic interaction. Hence, for which own behavior $p_i$ a politician is rewarded, depends on what other politicians do. Table 3 summarizes the politician’s expected reward as a function of $p_i$ and $p$ for each of the three types of voters the politician can face.

When the public choice is $p = 0$ (second columns of Tables 3A-3C), the voter will learn the state of the economy, $\tilde{\theta}_2 = s = \{0, 1\}$. As $0 < c_i < d_i$, the voter will ex-post prefer the policy option $a_i = s$, independent of her type, see Table 2. The politician expects $s = 1$ with probability $\hat{\theta}_1$. Given the public choice is $p = 0$, her expected reward thus is $\hat{\theta}_1$ when voting $p_i = 1$ and it is $1 - \hat{\theta}_1$ when voting $p_i = 0$.

When the public choice is $p = 1$ (first column of Tables 3A-3C), the voter will not learn the state of the economy through the observation of $u_i$ but is left with the signal $\sigma$. Then, for the politician, it is decisive which type of voter she faces, see Table 2. First, if she faces a strong opposer of the policy (voter of type $A$), she will, given $p = 1$, only be rewarded for voting against the policy, $p_i = 0$, no matter the signal $\sigma$ and thus the realization of $\tilde{\theta}_2 \in \{\tilde{\theta}^{\text{low}}_2, \tilde{\theta}^{\text{high}}_2\}$. Second, a politician who faces a strong supporter of the policy (voter of type $B$), is only rewarded for voting in favor of the policy, $p_i = 1$, again irrespective of $\sigma$. Third, the reward of a politician who faces a voter of type $C$ depends, given $p = 1$, on the realization of the signal $\sigma$. If $\sigma = 1$, voters’ posterior belief $\tilde{\theta}_2$, equals $\tilde{\theta}^{\text{high}}_2$. Then, the voter ex-post prefers the policy option $a_i = 1$. 8
In turn, her preferred policy option $\sigma_i$ equals 0 if $\sigma = 0$, since then $\tilde{\theta}_2 = \tilde{\theta}_2^{low}$. The considered politician’s expected rewards thus depend on her expectations about $\sigma$. She expects the signal to be $\sigma = 1$ with probability $\hat{\theta}_1 \cdot \pi + \left(1 - \hat{\theta}_1\right) \cdot (1 - \pi)$ which is also her expected reward when she votes $p_i = 1$. Analogously, her expected reward for voting $p_i = 0$ is the probability she assigns to $\sigma = 0$, $\hat{\theta}_1 \cdot (1 - \pi) + \left(1 - \hat{\theta}_1\right) \cdot \pi$.

We now analyze the strategic situation of a politician. When $\hat{\theta}_1 < \frac{1}{2}$, it is strictly dominant for the politician to vote $p_i = 0$ if facing a voter of type A or type C. However, if facing a voter of type B, the politician has no dominant strategy and seeks to win the vote in parliament. No matter the majority vote $p$, the politician’s expected reward is highest when she also votes in this way, $p_i = p$, and wins the vote in parliament, see Table 3B.

When $\hat{\theta}_1 > \frac{1}{2}$, voting $p_i = 1$ is strictly dominant if facing voters of types B or C. Here, there is no dominant strategy for the politician if facing a voter of type A, where a winner’s curse arises. The politician’s expected reward is highest when she looses the vote in parliament. If the politician perceives the threat rather likely, but faces a strong opposer of the policy, she would only vote in accordance with her belief ($p_i = 1$) if she was able to convince the voter, i.e. if $p = 0$, see Table 3A. The politician would then seek to lose the vote in parliament on purpose.

Table 3: Politician $i$’s expected reward in the vote-policy space

<table>
<thead>
<tr>
<th>$c_i/d_i$</th>
<th>$\tilde{\theta}_2^{high}$</th>
<th>$\tilde{\theta}_2^{low}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$p = 1$</td>
<td>$p = 0$</td>
<td>$p = 1$</td>
</tr>
<tr>
<td>$p_i = 1$</td>
<td>0</td>
<td>$\hat{\theta}_1$</td>
</tr>
<tr>
<td>$p_i = 0$</td>
<td>$1 - \hat{\theta}_1$</td>
<td>$1 - \theta_1$</td>
</tr>
</tbody>
</table>
The winner’s curse is a result of ex-ante disagreement between voters and politicians. It occurs when a voter opposes the policy so strongly ex-ante that the signal $\sigma$ cannot cause a change in mind (voter of type $A$) but the politician representing this voter perceives the policy to be rather justified ($\hat{\theta}_1 > \frac{1}{2}$).

**Are different beliefs necessary?** Differences in ex-ante beliefs make such disagreement more likely, they are, however, not a necessary condition. Suppose voter and politician have the same prior beliefs, $\hat{\theta}_1 = \hat{\theta}_1 = \theta_1$. Then, a winner’s curse arises when $\frac{1}{2} < \theta_1 < \frac{(1-\pi) c_i}{(1-2\pi) c_i + \pi d_i}$. The possibility of a winner’s curse even with identical beliefs results from an asymmetry in the preferences of voters and politicians in presence of risk. The voter prefers the policy that maximizes her expected utility. By contrast, the politician prefers the policy which is more likely to maximize the voter’s utility.

**The role of learning.** Whether a winner’s curse arises, also depends on the precision of the signal $\sigma$, i.e. on how much voters learn until the next election. When $\pi \to 1$, voters learn the state of the economy even when it is not revealed through the observation of outcomes $u_i$. Then, case $A$ in which a winner’s curse may occur fades away as $\hat{\theta}_2^{high}$ converges to one and $c_i/d_i < 1$. When, however, $\pi \to 1/2$, i.e. when voters learn almost nothing until the next election, case $C$ fades away as $\hat{\theta}_2^{high}$ and $\hat{\theta}_2^{low}$ both converge to $\hat{\theta}_1$. Accordingly, cases $A$ and $B$ apply to rather many voters when the signal is rather imprecise. Hence, winner’s curses occur rather when voters learn relatively little until the next election. In context of the EESA, the time between the second House vote on October 3, 2008, and the next election on November 4, 2008, was only 32 days and it appears reasonable that voters do not learn very much in this short period of time.

### 4 Interaction in Parliament

As all politicians have access to the same information, they have identical beliefs $\hat{\theta}_1$ when the vote in parliament takes place. Each politician is in one of the three cases outlined in Table 3. We denote by $N_A$, $N_B$, and $N_C$ the numbers of politicians which represent voters of types $A$, $B$, and $C$, respectively. For different values of $\hat{\theta}_1$ and for different majority structures in parliament, Table 4 describes voting behavior of the different groups and the equilibrium vote result.
Table 4: Voting behavior in parliament and equilibrium outcomes.

<table>
<thead>
<tr>
<th>$\hat{\theta}_1 &gt; \frac{1}{2}$, $N_B + N_C &gt; \frac{N}{2}$</th>
<th>group A</th>
<th>group B</th>
<th>group C</th>
<th>equilibrium vote result</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N_B + N_C &gt; \frac{N}{2}$</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>$p = 1$ (N_A dissenting votes)</td>
</tr>
<tr>
<td>$\theta_1 &gt; \frac{1}{2}$, $N_B + N_C &lt; \frac{N}{2}$</td>
<td>El Farol</td>
<td>1</td>
<td>1</td>
<td>$p = 0$ (one-vote margin) or $\text{prob}(p = 0) = \frac{1}{2\theta_1}$</td>
</tr>
<tr>
<td>$\theta_1 &lt; \frac{1}{2}$, $N_A + N_C &gt; \frac{N}{2}$</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$p = 0$ (unanimous)</td>
</tr>
<tr>
<td>$\theta_1 &lt; \frac{1}{2}$, $N_A + N_C &lt; \frac{N}{2}$</td>
<td>0</td>
<td>coord. game</td>
<td>0</td>
<td>$p = 0$ (unanimous) or $p = 1$ (N_A + N_C diss. votes) or $\text{prob}(p = 0) = \frac{1}{2(1-\theta_1)}$</td>
</tr>
</tbody>
</table>

Pessimistic beliefs. When politicians perceive the threat to be rather real, i.e. $\hat{\theta}_1 > \frac{1}{2}$, it is strictly dominant for politicians in groups B and C to vote in favor of the policy. That is, there are $N_B + N_C$ certain votes in favor of the policy. Group-A politicians, however, disagree with their voters ex-ante and face the winner’s curse, see Table 3A. Voting behavior of this group thus depends on whether the policy choice is already determined by the other groups’ voting behavior. This is the case if $N_B + N_C > \frac{N}{2}$. Then, the public choice is $p = 1$ irrespective of the behavior of group-A politicians. Hence, politicians in group A vote against the policy, loose the parliamentary vote, and are rewarded.

If, by contrast $N_B + N_C < \frac{N}{2}$, the voting behavior of politicians in group A is decisive for the outcome of the vote in parliament. Then, these politicians are in a strategic situation which is called the El Farol bar problem (Arthur 1994): a certain behavior only pays when not too many other players choose the same behavior. Those who vote $p_i = 1$ expect a higher reward if less than $\frac{N-1}{2} - N_B - N_C$ of their group mates also do so and the policy fails in parliament. Similarly, those who vote $p_i = 0$ can expect the highest reward when less than $\frac{N-1}{2}$ also choose this option and the policy passes parliament.

The El Farol problem is known to have a finite number of Nash equilibria in pure strategies and a symmetric equilibrium in mixed strategies (Cheng 1997; Whitehead 2008). In all pure-strategy Nash equilibria, the
“capacity level” is reached. In our context, $\frac{N+1}{2}$ politicians from group $A$ vote $p_i = 0$ such that the vote outcome is $p = 0$ with a one-vote margin. Intuitively, the vote margin can not be two or greater. Then, individual politicians in the winning majority who face the winner’s curse would gain from moving to the loosing fraction. Further, $p = 1$ can not be an equilibrium. If $p = 1$ won with a one-vote margin, a deviator from $p_i = 1$ to $p_i = 0$ would change the vote outcome and still remain a winner of the vote in parliament but her expected reward would increase from 0 to $1 - \hat{\theta}_1$, see Table 3A. The preventive policy is thus impeded in parliament by the majority of politicians from group $A$ voting against it despite perceiving it rather necessary. In the mixed-strategy equilibrium, expected payoffs of the two options equalize. In our set-up, this implies that $\text{prob}(p = 0) = \frac{1}{2^N}$ which exceeds $\text{prob}(p = 1)$ since $\hat{\theta}_1 < 1$. Thus, with pessimistic beliefs and Group-A politicians forming a majority in Parliament, the policy rather fails in parliament despite politicians perceiving it rather necessary.

Optimistic beliefs. When politicians believe the threat to be rather not real, i.e. $\hat{\theta}_1 < \frac{1}{2}$, politicians in groups $A$ and $C$ have the strictly dominant strategy to oppose the policy. Politicians in group $B$ now seek to win the vote parliament, see Table 3B. If the outcome of the vote certainly is $p = 0$ (i.e., when $N_A + N_C > \frac{N}{2}$), politicians in group $B$ all vote against the policy, win the vote in parliament, and are rewarded. The vote then results in an unanimous fail of the policy, $p = 0$.

If, however, group $B$ is decisive for the outcome of the vote (i.e., when $N_A + N_C < \frac{N}{2}$), politicians in this group face a coordination problem: a certain behavior pays when sufficiently many others choose the same behavior. Opposing the policy is expected to pay when at least $\frac{N-1}{2} - N_A - N_C$ other politicians in group $B$ do so and the policy fails while supporting the policy pays if at least $\frac{N-1}{2}$ others do so and the policy passes. This coordination problem has two symmetric equilibria in pure strategies. Either all politicians in group $B$ vote against the policy or all vote in favor of it. In the former equilibrium, the vote in parliament ends in an unanimous fail of the policy. In the latter equilibrium, the vote result is $p = 1$ but there are $N_A + N_C$ dissenting votes. There

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9It is plausible to argue that politicians are in a long-term strategic interaction. However, Whitehead (2008) shows that, in a repeated El Farol problem, long-run behavior converges to a Nash equilibrium of the one-shot El Farol problem.
is also a mixed-strategy equilibrium with $prob(p = 0) = \frac{1}{2(1 - \theta_1)}$. Here, the equilibrium that leads to $p = 1$ is Pareto dominant to both other equilibria for group-$B$ members. In this equilibrium, group-$B$ politicians rather follow attitudes of their voters than their own beliefs. They ensure the policy passes despite perceiving it rather unnecessary.

Considering the summary of the results in Table 4, it is apparent that the preventive policy cannot pass parliament unanimously as long as some voters oppose it ex ante (group $A$ exists). When the public choice is $p = 1$, there will always be dissenting votes. Our model thus gives a rationale for the considerable number of votes against the EESA.

5 Extensions

Repeated voting. Following our aim to explain voting behavior on the EESA, we extend our model to repeated voting. The House of Representatives voted twice on the EESA. In the first vote, the bill failed while it was finally enacted into law in the second vote. To capture this, we assume the following structure. If the bill passes parliament in a first vote, it is enacted into law. By contrast, if the bill fails in the first vote, a second and final vote takes place. Concerning voters, we assume that they reward politicians based only on the final and decisive vote in parliament. That is, if a second vote takes place, voters ignore politicians’ behavior in the first vote.

What are the incentives for politicians in this set-up of potentially repeated voting? In a second vote, if it takes place, the game is exactly as in our baseline model. In the first vote, voting behavior is only relevant for re-election if no second vote takes place. Thus, politicians at this stage only consider their best response to $p = 1$ as given in Table 3. For politicians facing voters of type $A$, it is best to vote against the policy, while politicians facing voters of type $B$ are best off voting in favor of the policy. Finally, politicians who face voters of type $C$ vote against the policy if $\hat{\theta}_1^{1st} < \frac{1}{2}$ and in its favor otherwise. Table 5 summarizes voting behavior and outcomes in the first parliamentary vote. Voting behavior in the second vote is described by Table 4 as in the baseline model.

Party lines. Although this is not much discussed in context of the EESA, one can think about how party lines would affect our analysis. Zudenkova (2011) proposes to model party discipline by politicians who maximize a weighted sum of their own utility and the utilities of other
politicians from the same party. In our model, such party lines would not impact strongly on the results. A politician can affect the rewards of other politicians only when she is pivotal. This only applies in the second line of Table 4 where the equilibrium can change to $p = 1$ (one-vote margin) when sufficiently many group-A politicians belong to the same party and party discipline is strong enough. In all situations where the equilibrium displays a margin greater than one, results would be unchanged if the model was extended by party lines.

**Alternative rescue measures.** Further, one may argue that politicians vote against the policy even when they believe the threat to be real because they support an alternative preventive policy. Apparently, this was not the case in context of the EESA. According to the Treasury Secretary Paulson (2010, p. 280), "whenever anyone on the Hill asked the Treasury team if they had any other plans, the response was: 'This is the plan.'

### 6 An empirical application

We now analyze whether the model can explain the outcome of the votes on the EESA in the House of Representatives. We use information from Pew Research Center to quantify the relevant model parameters. The Pew survey "for the people and the press" conducted at the end of September 2008, days before the Congress votes on the EESA, included the question: "As you may know, the government is potentially investing billions to try to keep financial institutions and markets secure. Do

<table>
<thead>
<tr>
<th>$\theta_1^{1st}$</th>
<th>group $A$</th>
<th>group $B$</th>
<th>group $C$</th>
<th>equilibrium vote result</th>
</tr>
</thead>
</table>
| $\theta_1^{1st} > \frac{1}{2},$  
$N_B + N_C > \frac{N}{2}$ | 0         | 1         | 1         | $p^{1st} = 1$  
(N$_A$ dissenting votes) |
| $\theta_1^{1st} > \frac{1}{2},$  
$N_B + N_C < \frac{N}{2}$ | 0         | 1         | 1         | $p^{1st} = 0$  
(N$_B$ + N$_C$ dissenting votes) |
| $\theta_1^{1st} < \frac{1}{2},$  
$N_A + N_C > \frac{N}{2}$ | 0         | 1         | 0         | $p^{1st} = 0$  
(N$_B$ dissenting votes) |
| $\theta_1^{1st} < \frac{1}{2},$  
$N_A + N_C < \frac{N}{2}$ | 0         | 1         | 0         | $p^{1st} = 1$  
(N$_A$ + N$_C$ dissenting votes) |

Table 5: Voting behavior and outcomes in the first vote.
you think this is the right thing to do...?” 57% of the respondents supported the bailout. The survey conducted at the beginning of December 2008, shortly after the presidential and congressional election, included the retrospective counterpart to the question above and, then, 47% of respondents supported the bailout.

We take these support rates to determine voters’ prior and posterior beliefs \( \tilde{\theta}_1 \) and \( \tilde{\theta}_2 \). When we assume that cost-to-damage ratios \( c_i/d_i \) are distributed uniformly on their valid support \((0,1)\), an ex-ante rate of 57% in favor of the bailout implies that the ex-ante indifferent voter has a cost-to-damage ratio of \( c/d = 0.57 \). Since a voter is ex-ante indifferent exactly when \( c_i = \tilde{\theta}_1 \cdot d_i \), this gives a prior belief of \( \tilde{\theta}_1 = 0.57 \). Similarly, we can deduce from the posterior support rate of 47% that voters’ posterior belief was \( \tilde{\theta}_2 = 0.47 \). Using the two beliefs \( \tilde{\theta}_1 = 0.57 \) and \( \tilde{\theta}_2 = 0.47 \), we can determine the precision of the signal \( \sigma \). As \( \tilde{\theta}_2 < \tilde{\theta}_1 \), voters must have received \( \sigma = 0 \) and beliefs were updated according to \( \tilde{\theta}_2 = \tilde{\theta}_2^\text{low} = \tilde{\theta}_1 \cdot (1 - \pi) / (\tilde{\theta}_1 \cdot (1 - \pi) + (1 - \tilde{\theta}_1) \cdot \pi) \), see equation (2). This gives the signal precision as \( \pi = 0.6 \). Using \( \tilde{\theta}_1 \) and \( \pi \), we can calculate the threshold values for \( c_i/d_i \) which define the three types of voters. With \( \tilde{\theta}_1 = 0.57 \) and \( \pi = 0.6 \), we obtain \( \tilde{\theta}_2^\text{high} = 0.66 \) and \( \tilde{\theta}_2^\text{low} = 0.47 \). Accordingly, 34% of politicians are predicted to have faced voters of type A, 47% to belong to group B and group C is predicted to contain the remaining 19% of the politicians.

We infer information on the prior of politicians, \( \tilde{\theta}_1 \), from voting behavior in parliament. In the first House vote, the EESA failed. To generate this, politicians in group C need to vote against the policy which they only do for \( \tilde{\theta}_1^\text{1st} < \frac{1}{2} \), see Table 5. By contrast, the EESA bill passed parliament in the second house vote. To generate this result in our model, politicians in group C need to vote in favor of the policy which they only do for \( \tilde{\theta}_1^\text{2nd} > \frac{1}{2} \), see Table 4. As elaborated in the Introduction, the enormous financial market reaction to the first vote is likely to have served as a signal of the bank bailout’s necessity to politicians.

For the first vote, our model predicts the following. As \( \tilde{\theta}_1^\text{1st} < \frac{1}{2} \) and \( N_A + N_C > N/2 \), the third line of Table 5 applies. Hence, groups A (34%) and C (19%) vote against the policy. By contrast, the 47% of politicians in group B are predicted to vote in the policy’s favor. Thus, the model predicts the EESA to fail 53%-47% in the first House vote.
Comparison to microeconometric evidence. Dorsch (2013) analyzes the impact of politicians’ behavior in the second EESA vote on their re-election chances. He finds that voting in favor of the EESA was electorally costly to Representatives with relatively low financial-sector employment in their home districts while it increased the re-election probability for Representatives from districts characterized by relatively high financial-sector employment shares. This finding is in line with our model’s prediction when we interpret the employment share in the financial sector as an inverse proxy for the cost-to-damage ratio $c_i/d_i$. In our quantitative model evaluation, groups $B$ and $C$ ultimately vote in favor of the EESA. In line with Dorsch (2013), politicians in group $B$
– i.e., those with the lower cost-to-damage ratios – are predicted to be rewarded by voters for this behavior. Meanwhile their counterparts in group C – i.e., those with the higher cost-to-damage ratios – are predicted to be punished by voters (see Table 2 with $\bar{\theta}_2^2 = \bar{\theta}_2^{low}$), although, at the time of the vote in parliament, they expect rather to be rewarded by voters. The latter implication of our model is also in line with the findings of Dorsch (2013, p. 213) who observes ”a divide between how congressmen viewed the electoral constraints on their voting behavior ex-ante and how their constituents retrospectively imposed them.”

Mian et al. (2010) analyze the determinants of a change in voting behavior between the two EESA votes in the House. They find that, among those Representatives who voted against the EESA in the first House vote, politicians from districts with above-average financial-sector employment shares are more likely to support the EESA in the second House vote. Sticking to the above interpretation of the employment share in the financial sector as an inverse proxy for the cost-to-damage ratio $c_i/d_i$, the finding of Mian et al. (2010) is also in line with the implications of our model. In our quantitative model evaluation, groups A and C vote against the EESA in the first vote. Then, in the second House vote, politicians in group C – i.e., those with the lower cost-to-damage ratios – switch their voting behavior.

7 Conclusion

In 2008, the Emergency Economic Stabilization Act (EESA), the so called Wall Street bailout bill, passed the US congress - but with many dissenting votes and only after a first fail. This paper has presented a model of imperfect information which rationalizes this observation. The preventive nature of a bailout induces a winner’s curse for politicians who perceive the policy to be rather needed but whose voters oppose the policy ex ante. When the policy is not conducted, the voter changes her mind and rewards her politician for supporting the policy and loosing the vote in parliament. If, however, the policy is conducted, the voter does not change her mind and rewards the politician for opposing the policy, again loosing the vote. This winner’s curse leads to narrow vote results as comfortable vote margins induce incentives to deviate. An empirical application reveals that the model can explain the narrow outcomes of both House votes on the Wall Street bailout.
References


