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# Self-Funding of Political Campaigns

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Received: May 11, 2020 Revised: June 14, 2021; November 17, 2021 Accepted: November 19, 2021 Published Online in Articles in Advance:	<b>Abstract.</b> Candidate self-funding, in particular self-loans, is a significant source of funding of political campaigns. Self-funding clusters among nonincumbent campaigns, republican campaigns, and more expensive campaigns. Self-funded campaigns raise less money from individuals and special interests and also spend less. Self-funders are wealthier on average
April 7, 2022	and run in more competitive elections. The analysis of self-funders' legislative decisions
https://doi.org/10.1287/mnsc.2022.4404	shows that self-funders' votes, especially those of republicans, are significantly more sensi- tive to contributions from special interests that are affected by the votes. The results high-
Copyright: © 2022 INFORMS	light the importance of considering politicians' self-funding choices in analyzing voting behavior and the value of political activism.
	History: Accepted by Gustavo Manso, finance. Supplemental Material: Data and the online appendices are available at https://doi.org/10.1287/mnsc.

Keywords: campaign self-funding • voting behavior • political campaigns • incentives

# 1. Introduction

In January 1999, Grace Napolitano was sworn in as a freshman democratic representative for the California's 34th Congressional District in the U.S. House of Representatives. The newly elected lawmaker's 1998 election campaign and victory is intriguing because the campaign was partially funded with a personal loan of over \$220,000 that remained outstanding until July 2010, in the interim paying out in excess of \$200,000 in interest. The *Los Angeles Times* reports the following:

Napolitano held at least one fundraiser each in 2007 and 2008 to collect money for the loan, according to campaign records. Both were hosted by 21<sup>st</sup> Century Group Inc., a Capitol Hill lobbying firm whose clients include several transportation interests. Napolitano is a member of the House Transportation and Infrastructure Committee and is chairwoman of the Water and Power Subcommittee of the Natural Resources Committee ... (Zajac 2009)

The 1998 election campaign of Grace Napolitano is by no means an exception. Close to half of political candidates running for U.S. congressional seats contribute personal campaign funds, often in excess of millions of dollars per election. Own-source funding of political campaigns is so pervasive that, at almost \$3 billion in total funding during the 1983–2018 period, it constitutes the second largest source of campaign financing preceded only by individual contributions and exceeding separately contributions from corporate, trade, labor, and membership special interest groups. Most recently, 55% of political candidates running in the 2020 congressional elections collectively contributed \$256 million of personal wealth to funding their political ambitions. Every sixth candidate was successful in his or her election bid.

Although much has been said among campaign reform advocates, media commentators, and academics about whether wealthy self-financiers have an unfair advantage in U.S. elections, considerably less attention has been paid to the legislative behavior of self-financiers who win elections.<sup>1</sup> This lack of evidence may be due to the perception that self-financiers are seldomly successful so they must be unimportant for congressional decision making. But self-financiers are not an empty set in Congress, so it is important to analyze whether their legislative behavior differs systematically from the behavior of other politicians. In this paper, we present detailed analysis of self-funding decisions of political candidates and their subsequent voting behavior in Congress.

There are several reasons why self-financiers may act differently if elected compared with other politicians. On the one hand, self-financiers often campaign on slogans that, if elected, they will not be beholden to special interests and make legislative decisions that represent the wishes of the voters. For example, Jon Corzine loaned over \$60 million to his campaign and ran on a slogan "Unbought and Unbossed" in his 2000 successful bid for the Senate. Herb Kohl ran on the slogan "Nobody's Senator but Yours" in the 1988 Senate election when he made \$7 million in self contributions and loans to his election campaign. Linda McMahon spent nearly \$100 million of personal funds on two U.S. Senate bids in 2010 and 2012, with her campaign ads often featuring a promise to represent local constituents rather than special interests: "In the Senate I will owe you, not the special interests who corrupt so many career politicians from Hartford to Washington" (Applebome 2012, p. 16).

On the other hand, unless self-financiers plan to continue self-bankrolling future elections, they may be under considerable pressure to demonstrate their fundraising skills to party leadership, campaign advisors, political consultants, and outside special interests to maximize future reelection chances. Moreover, most self-funding comes in the form of candidate debt, which signals intent to repay self-loans with future campaign contributions. The conventional wisdom among campaign advisors and political consultants is that prompt debt reduction demonstrates a politician's leadership qualities and viability as a candidate, so self-financiers may be under pressure to "sell" their votes to special interest groups in exchange for campaign contributions. This argument derives from the lobby model literature in political economy (see, e.g., Grossman and Helpman 1994, 1995) in which politicians value campaign contributions not only for financing future campaigns but also for retiring previous campaign debt and for demonstrating fundraising skills and thereby establishing their credibility as successful reelection candidates.<sup>2</sup>

A closely related third possibility is that self-financiers may sell access rather than votes. Self-financiers, because of their limited political experience, may feel the need to exchange political contributions from special interests for access to their office, which allows inexperienced self-financiers to learn about issues and the effects of different policy decisions on affected stakeholders. This type of informational lobbying can affect self-financiers' political behavior; however, the effect arises from information asymmetries and the relative expertise between special interests and politicians rather than from a direct exchange of money for votes (e.g., Bombardini and Trebbi 2020). A fourth and more benign explanation for why self-financiers may act differently in Congress is that successful self-financiers may possess certain characteristics, such as education, career experience, competence and perseverance, that have a systematic effect on their political decision making.

Our analysis of candidate self-funding decisions proceeds in two steps. First, we provide a detailed description of self-funding decisions on a comprehensive sample of U.S. political campaigns over the 1983–2018 period. Prior studies focus on either small samples or short time periods, so it is important to systematize our knowledge of self-funding decisions on a comprehensive sample of political campaigns. Our results show that candidate self-funding, in particular candidate self-loans, is an important component of campaign fundraising, particularly so for nonincumbent campaigns (challengers and open race candidates), Republican campaigns, and more expensive campaigns. Consistent with prior studies, we find that self-funded campaigns raise less campaign funds from individuals, special interest political action committees (PACs), and party leadership. Self-funded campaigns also spend less. Political candidates who contribute own funds to their campaigns are wealthier on average and run in more competitive elections. Candidate self-funding distinctly clusters in quarterend months and is higher during the primary and general election seasons. We generally find little evidence that candidates time own contributions and loans within a given election cycle to months when their campaigns face a fundraising shortfall from outside sources nor are candidate contributions and loans timed to months when the opponents' campaigns raise more funds. We do find, however, that nonin*cumbent* politicians tend to self-fund their campaigns in periods when campaign contributions from outside special interests are low, which is consistent with anecdotal evidence that special interests stay away from funding nonincumbent campaigns and instead promise future financial support if those campaigns are successful.

In the second step, we turn to the analysis of legislative decisions of successful self-funding politicians. To our knowledge, ours is the first paper to analyze whether self-financiers behave differently in Congress compared with other politicians. Our results show that voting decisions of self-funding politicians, Republicans in particular are significantly more sensitive to contributions from outside special interests that are affected by the votes but only when politicians' funds come in the form of campaign loans rather than regular self-contributions. The results cannot be explained by time invariant politician characteristics, political ideology, general time trends, or time varying local economic conditions. The results also cannot be explained by politicians' wealth, political inexperience, electoral competition, or the commitment to cater to local constituent preferences. Instead, the results support the view that self-funders, selflenders in particular, vote differently in Congress because they face financial and/or reputational pressure to sell political favors to special interests to demonstrate their fundraising skills and to retire campaign debt accumulated in prior campaigns. We provide further evidence in support of this interpretation of the results by exploiting a regulatory change that imposed strict limits on the repayment of candidate loans with postelection contributions. The Bipartisan

Campaign Reform Act of 2002 (BCRA) prohibited campaigns from repaying candidate loans in excess of \$250,000 with contributions raised in the postelection period. We show that voting decisions of politicians who supply self-loans in excess of the \$250,000 threshold become independent of contributions from special interest groups after the passage of BCRA, which is consistent with the view that self-funders' voting behavior is affected by incentives to retire personal campaign loans.

Our paper makes four contributions to the literature. First, we provide novel large sample evidence on the financing patterns of political campaigns. Contrary to prior evidence, we show that self-funding is a significant source of finance of political campaigns, with close to a quarter of all elected officials entering Congress after successful self-funded campaigns. Second, we show that legislative decisions of elected politicians are systematically correlated with their self-funding choices. These results contribute to the literature on the determinants of legislators' voting behavior. Previous research has analyzed how political connections and networks (e.g., Cohen et al. 2013, Cohen and Malloy 2014); the presence of a daughter in one's family (Washington 2008); and other personal characteristics, such as race, age, and gender, affect the behavior of elected officials (Hibbing and Marsh 1987, Stratmann 2000, Pande 2003, and Chattopadhyay and Duflo 2004). The contribution of our paper is to demonstrate that politicians' self-funding decisions are important in understanding voting behavior.

Third, by showing that voting behavior is related to campaign contributions by special interests, our paper contributes to the lobby model literature in political economy (see, e.g., Grossman and Helpman 1994, 1995; List and Sturm 2006; Helpman 1997; and Grossman and Helpman 2002 for excellent reviews). The lobby literature assumes that politicians make policy decisions by maximizing a weighted sum of total political contributions and social welfare. Political contributions are valuable not only because they are used to finance future reelection campaigns but also because they are needed to retire previous campaign debt, to deter competition from quality challengers, and to demonstrate candidates' abilities in campaign fundraising. The contribution of our paper is to identify a setting where the marginal benefit of campaign contributions is particularly high (namely, among nonincumbent politicians who face strong financial and reputational incentives to exchange votes for contributions) and to show that the resulting voting behavior is significantly influenced by campaign contributions.

Fourth, our paper contributes to the growing literature on the interrelation between politics and finance. Much of this literature focuses on whether political connections (e.g., Fisman 2001, Faccio 2004, Goldman et al. 2009) or campaign contributions (e.g., Cooper et al. 2010, Ovtchinnikov and Pantaleoni 2012, Akey 2015) matter for firm value and on the channels through which political connections affect firm value (e.g., Duchin and Sosyura 2012, Amore and Bennedsen 2013, Correia 2014, Akey 2015).<sup>3</sup> The contribution of our paper is to highlight the importance of considering politicians' self-funding choices in analyzing the value of firm political activism.

## 2. Sample

Our sample consists of all active U.S. House of Representatives and Senate election campaigns for the 1983–2018 period. Even though campaign financing data goes back to 1979, no data on candidate contributions and loans to political campaigns are available prior to 1983. The sample is an intersection of campaign summary and detailed contributions and expenditures files maintained by the Federal Election Commission (FEC). The FEC summary files provide campaign summary information, such as total receipts and expenditures for the entire campaign cycle. The detailed contributions and expenditures files contain itemized contributions and expenditures data for each campaign, including the identity of the contributor/ recipient and the exact date and the amount of the transaction.

For each political campaign, we first obtain data from the FEC Summary Files on total campaign fundraising and expenditures. We use the FEC Post-Election Cycle Summary Files for the period 1983–2006 and the Current All Candidates Summary Files for the period 2007-2018 to obtain data on total campaign receipts, transfers to and from authorized committees, total campaign disbursements, beginning and ending campaign cash, total individual contributions (including candidate contributions), total candidate and other loans and loan repayments, and total debts owed by the campaign at campaign end. We also record candidate name, status (incumbent, challenger, or open race candidate), sought-after public office, state and district for which the candidate is running, the party affiliation, and the election outcome.

We merge the summary data with (i) the sample of detailed political contributions made by Political Action Committees and (ii) the sample of detailed campaign expenditures over our sample period. The detailed PAC contributions data are from the FEC *Contributions from Committees to Candidates Detailed Files* containing 5,300,080 itemized contributions made by all FEC-registered PACs over our sample period. Campaign expenditures data are from the FEC *Operating Expenditure Files* containing 11,600,199 itemized campaign expenditures for the 2003–2018

period. No detailed campaign expenditures data are available from the FEC prior to 2003; so in tests that require detailed campaign expenditures data, our analysis is restricted to the post-2002 period.

In the final step, we add detailed candidate contributions and loan data to the data set. Although the FEC states that candidate contributions are contained in the FEC Contributions by Individuals Files and candidate loans are contained in the FEC Contributions from One Committee to Another Files, we find that candidate contributions and loan data are missing from detailed files in 82% of campaigns that report positive amounts of candidate contributions and loans in summary files. To address this problem, we hand collect raw data on 66,537 candidate contributions and 26,895 candidate loans from the FEC contributions reports and merge it with our data set. To ensure data accuracy, we only keep campaign financing data if the sum of candidate contributions and loans from the contributions reports is within a 1% threshold of the total candidate contributions and loans reported in the summary files. The FEC raw candidate contributions and loan data are available only for the 2003-2018 period; so in all tests that require itemized candidate contribution and loan data, our analysis is again restricted to the post-2002 period.

The final campaign financing sample consists of 23,843 House and Senate campaigns with nonmissing data on total campaign fundraising and expenditures. This data set includes 7,910 winning campaigns, 8,359 losing campaigns, and 7,574 unterminated campaigns from previous elections that still have outstanding debt.

## 3. Own-Source Funding of Political Campaigns

#### 3.1. Candidate Self-Contributions and Self-Loans

Figure 1 describes the sources of financing of U.S. political campaigns. We aggregate campaign financing summary data for the entire sample period, 1983–2018, and report the results separately for each financing source. All figures are in December 2018 dollars. Corroborating a well-documented finding in the campaign financing literature (see, e.g., Theilmann and Wilhite 1989, Ansolabehere et al. 2003, Cooper et al. 2010), individual contributions comprise by far the largest source of funding of political campaigns. Individuals collectively contributed \$14.63 billion to political campaigns over our sample period. Interestingly, at \$2.95 billion or 10.6% of total campaign financing, candidate own-source funding represents the second largest source of funds, exceeding independent expenditures against candidates (\$2.42 billion), corporate contributions (\$2.31 billion), trade contributions (\$1.46 billion), independent expenditures in support of candidates (\$1.16 billion), and

labor contributions (\$1.09 billion). The results show that most of candidate own-source funding comes in the form of personal loans (\$2.28 billion), with candidate contributions accounting for a smaller \$675 million of the total.<sup>4</sup> The institutional details pertaining to candidate loans and contributions are described in Online Appendix A.

Table 1 reports the preponderance of own-source funding in political campaigns. The first five columns report the frequencies of own-source funds in different subsamples. The results show that 60.44% of political campaigns in our sample (14,411 out of 23,843) rely on own-source funding. Consistent with prior studies (see, e.g., Jacobson 1980, Milyo and Groseclose 1999, and Steen 2006), the distribution of own-source funding is heavily skewed toward nonincumbent politicians (challengers and open race candidates), with incumbents relying on own-source funds in 14.40% of all campaigns. Column (5) shows that close to a quarter of all elected officials (22.19%) rely on own-source funds, which mitigates a concern that own-source funding is unimportant because it is present only among politicians who never get elected into office.<sup>3</sup>

The results in the next two rows show that Senate candidates rely more frequently on own-source funds than House candidates (64.77% versus 59.93%). Within each chamber, nonincumbents consistently rely more on own-source funds, although the differences between incumbents and nonincumbents are more pronounced in the House. In unreported results, we partition the sample by party and find that Democrats are less likely to rely on own-source funds compared with Republicans (58.26% versus 62.51%).

Panels B and C separate candidate own-source funding into candidate contributions and candidate loans. Over a third of political campaigns rely on candidate contributions (37.62%), whereas almost half of campaigns rely on candidate loans (44.61%). This evidence is consistent with Milyo and Groseclose (1999) that shows that candidate loans are a more common source of own-source financing than candidate contributions during the 1988–1996 period. Candidate contributions and loans are disproportionately concentrated among nonincumbents politicians who face lower election chances, so among elected politicians, one in eight (six) enters office with prior self-contributions (self-loans).

The remaining five columns of Table 1 focus on the subsample of political campaigns that rely on candidate self-funding. The results for 14,411 self-funded campaigns show that candidate self-funding is an important source of campaign financing. Conditional on candidate self-funding, campaigns on average raise one out of every three dollars from own-source funds. The reliance on own-source funds is concentrated among nonincumbents, with incumbents raising only 6.26% of total funds from candidate own-source funds. In contrast, challenger and open race campaigns raise 36.45% and 34.86% in candidate own-source funds, respectively. Moreover, Senate campaigns raise more funds from candidate contributions and loans compared with House campaigns, which is not surprising considering that Senate races on average are more expensive.<sup>6</sup>

A comparison of Panels B and C shows that candidate loans represent a more important source of campaign funds, exceeding candidate contributions by a factor of two. This applies to nonincumbents and incumbents and to both congressional chambers. The evidence demonstrates that own-source financing, particularly candidate loans, is an important component of campaign fundraising, especially for nonincumbent campaigns, Senate campaigns, and Republican campaigns.<sup>7</sup>

## 3.2. Characteristics of Self-Funding Politicians

Table 2 analyzes the characteristics of campaigns and politicians that rely on own-source funding. Panel A shows that campaigns with own-source funding enter the campaign cycle with less cash on hand and raise less funds from individuals and PACs and from authorized transfers than other campaigns. Own-source campaigns also receive less support from independent expenditures. As a result, own-source campaigns raise significantly less in total receipts and spend significantly less in total campaign expenditures compared with campaigns that do not rely on own-source funds. Campaigns in

### Figure 1. Sources of Campaign Financing, 1983–2018



Notes. This figure shows the aggregate amounts of campaign financing by source. The sample consists of all U.S. House of Representatives and Senate election campaigns for the 1983–2018 period. Individual contributions is the total amount of political contributions from individuals over our sample period. Candidate contributions and loans is the sum of the total amount of personal contributions and loans that candidates made to their own campaigns over our sample period. Independent expenditures against is the total amount of independent expenditures made by all PACs opposing the election of politicians. Corporate contributions is the total amount of contributions made by corporate PACs. Trade contributions is the total amount of contributions from PACs affiliated with trade associations. Independent expenditures for is the total amount of independent expenditures made by all PACs supporting the election of politicians. Labor contributions is the total amount of contributions made by PACs affiliated with labor entities. Membership contributions is the total amount of contributions made by membership PACs. Nonconnected organizations' contributions is the total amount of contributions made by PACs that are not either (i) party committees, (ii) authorized candidates' committees, or (iii) separate segregated finds established by a corporation or a labor organization. Authorized transfers is the total amount of funds transferred between authorized committees of the same candidate. Communication cost expenditures is the total amount of funds that corporations and labor organizations spend to communicate to individuals in support of politicians. Party contributions is the total amount of contributions made by major political parties. Corporations w/o stock contributions is the total amount of contributions made by corporations without capital stock. Cooperatives contributions is the total amount of contributions made by cooperatives. Outside loans is the total amount of outside loans that campaigns received over our sample period. Communication cost against expenditures is the total amount of funds that corporations and labor organizations spend to communicate to individuals in opposition of politicians. All figures are in millions of December 2018 dollars.

	Percentage	of all campaigns	receiving candidate	e own-source cor	ıtributions	percentag	Within campaig ge of campaign fi	ns receiving candid ands from candidat	ate contributions e own-source cor	, ntributions
Congressional chamber	All	Incumbents	Challengers	Open race	Elected	All	Incumbents	Challengers	Open race	Elected
	Pa	nel A: Campaigns	that receive candic	late own-source	funds, that is,	campaign co	ntributions or ca	ndidate loans		
Both chambers	60.44	14.40	81.98	81.26	522.19	33.71	6.26	36.45	34.86	9.51
	[23,843]	[7,543]	[11,032]	[5,268]	[7,910]					
House	59.93	14.44	82.29	82.47	522.21	32.83	5.91	35.59	34.24	9.08
	[21,325]	[7,041]	[9,731]	[4,553]	[7,354]					
Senate	64.77	13.75	79.63	73.57	21.94	40.54	11.42	43.09	39.34	15.29
	[2,518]	[502]	[1,301]	[715]	[556]					
			Panel B: Campaign	is that receive cai	ndidate campa	aign contribu	tions only			
Both chambers	37.62	7.53	52.31	49.94	12.12	15.94	3.04	17.72	14.81	3.24
House	37.35	7.37	52.83	50.60	12.02	15.46	2.63	17.34	14.16	2.85
Senate	39.95	9.76	48.42	45.73	13.49	19.71	7.41	20.84	19.37	7.78
			Panel C: (	Campaigns that r	eceive candida	ate loans only	A .			
Both chambers	44.61	8.59	60.27	63.40	15.37	32.24	7.84	34.22	33.04	11.19
House	44.10	8.72	60.06	64.73	15.46	31.54	7.57	33.54	32.58	10.83
Senate	48.93	6.77	61.88	54.97	14.21	37.59	12.82	39.15	36.54	16.35
Notes. This table shows de 1983–2018 period. Panel A candidate self-contribution politicians.	scriptive statis presents des ns. Panel C pr	stics for candidate s criptive statistics fo esents descriptive :	self-funding used in or candidate self-fur statistics for candid	political campaig ıdıng, defined as ate self-loans. Th	ns. The sample the sum of ca e numbers in s	consists of al ndidate self-c square bracke	l U.S. House of Re ontributions and s its in Panel A are	presentatives and S self-loans. Panel B p the total number o	enate election cam resents descriptiv f observations in	paigns for the e statistics for each group of

 Table 1. Candidate Self-Funding Descriptive Statistics, 1983–2018

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	Self	-funding politicia	ns				
	Contributions or loans	Contributions	Loans only	All other	t-statistics	for difference	in means
Variable	1	2	3	4	1–4	2–4	3–4
	Ι	Panel A: Campaig	n fundraising c	haracteristics			
Beginning cash (\$)	19,332	41,406	15,136	300,409	-45.87	-22.10	-29.58
Individual contributions (\$)	399,701	431,134	392,340	940,143	-22.71	-12.08	-15.63
PAC contributions (\$)	105,548	123,937	116,236	498,240	-72.30	-38.51	-47.14
Party contributions (\$)	4,241	3,112	4,877	5,797	-7.05	-7.59	-2.90
Authorized transfers (\$)	1,918	1,404	2,931	17,433	-7.43	-3.97	-4.28
Independent expenditures (\$)	114,075	140,680	98,109	204,981	-5.52	-2.36	-4.57
Communication costs (\$)	4,949	4,909	6,049	8,583	-5.06	-4.38	-2.32
Candidate contributions (\$)	46,838	58,279	0	-7			
Candidate loans (\$)	157,839	-257	173,130	-2			
Outside loans (\$)	3,991	3,990	4,196	2,370	1.51	-0.91	-2.56
Total receipts (\$)	747,240	653,870	720,972	1,552,992	-23.33	-16.64	-18.71
Total disbursements (\$)	738,663	634,326	716,637	1,502,864	-21.85	-15.86	-17.36
Number of campaigns	14,411	3,774	5,441	9,432			
		Panel B: Car	ndidate charact	eristics			
Republican	0.530	0.492	0.551	0.486	6.71	0.67	7.71
CF score	0.127	-0.001	0.206	0.047	5.46	-2.34	9.34
Senate	0.113	0.106	0.115	0.094	4.70	2.05	4.05
Nonincumbent	0.925	0.884	0.905	0.315	128.80	68.89	84.35
Candidate age	51	53	51	56	-15.00	-6.44	-11.05
Female candidate	0.162	0.188	0.140	0.148	2.88	5.58	-1.35
N primary opponents	4.331	4.111	4.302	2.761	36.74	22.91	29.67
N lifetime donors	937	1,124	996	3,789	-39.62	-20.61	-25.83
Democratic share	0.502	0.503	0.505	0.515	-7.72	-4.52	-4.13
Elected	0.122	0.143	0.146	0.653	-102.01	-59.63	-68.32
Primary election margin	0.306	0.360	0.310	0.757	-53.24	-33.05	-44.97
General election margin	-0.105	-0.076	-0.076	0.283	-62.93	-34.45	-42.60
Personal assets (\$)	13,055,719	14,033,105	9,374,848	5,004,024	5.69	4.16	2.22
Personal liabilities (\$)	2,441,577	3,106,657	1,167,547	1,253,173	3.06	3.11	-0.18

Table 2. Characteristics of Self-Funding Politicians, 1983–2018

*Notes.* This table reports campaign and individual characteristics of self-funding politicians. Panel A presents the campaign summary data for self-funding and other politicians. All figures are in December 2018 dollars. The bottom row shows the number of self-funded and other campaigns. Panel B presents individual characteristics for self-funding and other politicians. The campaign summary data in Panel A is from the FEC *Post-Election Cycle Summary Files* for the 1983–2006 period and the *Current All Candidates Summary Files* for the 2007–2018 period. The individual characteristics data are from the FEC *Candidate Master Files*, Adam Bonica's *DIME Scores for Congressional Candidates for 1980-2018 Election Cycles* database (the campaign finance (CF) scores, the number of primary opponents, and the number of lifetime donors), and from the Center of Responsive Politics' Net Worth database (for the personal assets and liabilities data). All data are for the 1983–2018 period, except for the candidate net worth data that are available only for the 2004–2014 period.

which politicians make self-contributions raise the least campaign funds, followed by campaigns in which politicians make self-loans.<sup>8</sup>

Panel B shows that politicians who contribute own-source funds are more likely to be Republican, conservative (except for candidates that make selfcontributions), and to run in Senate races.<sup>9</sup> They are also younger on average, and a higher percentage of them are women. Campaigns with own-source funds face a greater number of opponents and attract the support of fewer outside donors. It is perhaps not surprising then that politicians who contribute ownsource funds face lower election margins in primary and general elections and are less likely to be elected into office. The results also show that politicians with own-source funds are wealthier, on average, so they are more likely to afford to self-fund their campaigns. We also estimate probit models that predict candidate self-funding using demographic characteristics. The results, available in Table C.3 of the online appendix, broadly confirm the descriptive statistics in Table 2.

Table 3 expands on the descriptive analysis in Table 2 by analyzing candidate own-source funding decisions in fixed effects regressions that control for unobserved candidate and state/election cycle characteristics and for cross-correlations in the explanatory variables. Because own-source funding decisions are quite distinct for incumbent and nonincumbent politicians, we regress own-source funding on campaign fundraising and candidate characteristics and on the interaction of fundraising variables with a nonincumbent indicator variable:

		Self-cont	ributions			Self-I	loans	
Variable	х	X×Nonincumbent	x X	X×Nonincumbent	t X	X×Nonincumbent	Х	X×Nonincumbent
Ln(1+Total receipts)	0.2463***	• 0.0741	0.2002***	* 0.0058	1.1225**	* -0.0364	0.6057***	* 0.4961***
	(0.0775)	(0.1015)	(0.0625)	(0.0655)	(0.1064)	(0.1356)	(0.0745)	(0.0778)
Beginning cash / receipts	0.0018	-0.0018	-0.0014	-0.1254**	-0.0028	0.0705***	-0.0203**	-0.1197*
	(0.0059)	(0.0246)	(0.0043)	(0.0528)	(0.0112)	(0.0260)	(0.0090)	(0.0631)
Individual contributions / receipts	-0.2303	-2.2191***	-0.5401	-2.3776***	-2.8942**	* -4.4707***	-2.7869***	-4.8335***
	(0.4182)	(0.5569)	(0.4943)	(0.5085)	(0.7520)	(0.8593)	(0.8354)	(0.8446)
PAC contributions / receipts	-0.5153*	-3.2650***	-1.0816**	$-4.0975^{***}$	-2.2598**	* -3.9686***	-2.6900***	-4.4786***
	(0.2740)	(0.7231)	(0.4846)	(0.5768)	(0.7158)	(1.1515)	(0.8368)	(0.9572)
Party contributions / receipts	11.0026***	-10.9252**	4.0406	-6.1150	0.8738	-2.8208	10.9536**	$-15.7186^{***}$
	(4.2143)	(4.3700)	(3.9803)	(4.0109)	(6.7412)	(6.8623)	(5.3261)	(5.3487)
Authorized transfers / receipts	0.0919	-1.0137	0.0609	-1.8555*	0.3371	-1.2140	0.3626	-2.4722***
	(0.0879)	(0.7345)	(0.1779)	(1.0754)	(0.2319)	(0.8901)	(0.3308)	(0.9159)
Communication costs / receipts	0.9355	-6.0068*	12.1833**	-13.8174***	1.3051	-3.8141	6.8674	-8.3269
	(2.6528)	(3.2328)	(4.8108)	(4.8604)	(4.3885)	(5.5063)	(7.2504)	(7.3005)
Independent expenditures / receipts	0.1291*	-0.2773	0.0741	-0.1151	0.2111**	-0.1116	0.1249	-0.4993***
	(0.0667)	(0.1771)	(0.0971)	(0.1219)	(0.1032)	(0.2515)	(0.1436)	(0.1894)
Campaign disbursements / receipts	0.0084	-0.0039	0.0049	0.0790	0.0910**	-0.5086***	0.0612**	-0.1189
, ,	(0.0276)	(0.0857)	(0.0165)	(0.0884)	(0.0376)	(0.1292)	(0.0276)	(0.1117)
Nonincumbent	3.3121**		5.4912***	4	9.2309**	*	3.3755***	+
	(1.4305)		(0.9622)		(1.9203)		(1.2229)	
Republican	0.0921		-0.3154***	<del>(</del>	1.7528**		0.1645**	
	(0.4561)		(0.0608)		(0.7703)		(0.0662)	
N primary opponents	0.0730***	ŀ	0.0016		0.1430**	*	0.0627***	÷
	(0.0192)		(0.0112)		(0.0226)		(0.0120)	
Democratic share	-0.0045		-1.5744***	4	1.2362		0.1754	
	(0.9005)		(0.2647)		(1.0478)		(0.2968)	
Senate dummy			-0.4036***	÷			-1.1877***	÷
5			(0.1128)				(0.1248)	
Politician fixed effects		Yes	,	No		Yes		No
State × Cycle fixed effects		Yes		Yes		Yes		Yes
Adjusted $R^2$		0.534		0.217		0.621		0.439
• •		11,340		22,826		11,334		22,821

Table 3.	Determinants	of Self-	-Funding	Decisions,	1983-	-2018
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Notes. This table shows coefficient estimates of the model

 $Ln(1 + OSF_{jcs}) = \alpha_j + \alpha_s \times \alpha_c + \alpha X_{jc} + \beta Non - incumbent_{jc} + \gamma X_{jc} \times Non - incumbent_{jc} + \varepsilon_{jcs}$ 

where  $OSF_{jcs}$  is candidate *j*'s own-source funding (self-contributions or self-loans) in election cycle *c* and state *s*,  $X_{jc}$  is a vector of campaign and candidate characteristics, *Non* – *incumbent*<sub>*jc*</sub> is an indicator variable set to one for challengers and open race candidates and zero for incumbents, and  $\alpha_j$  and  $\alpha_j \times \alpha_c$  are politician and candidate *j*'s state × election cycle fixed effects, respectively. The sample period is from 1983–2018. SEs (reported in parentheses) are adjusted for heteroskedasticity and clustered by politician.

\*\*\*, \*\*, \* designate significance at 1%, 5%, and 10% levels, respectively.

$$Ln(1 + OSF_{jcs}) = \alpha_j + \alpha_s \times \alpha_c + \alpha X_{jc} + \beta Non - incumbent_{jc} + \gamma X_{jc} \times Non - incumbent_{jc} + \varepsilon_{jcs},$$

(1)

where  $OSF_{jcs}$  is candidate *j*'s own-source funding (self-contributions or loans) in election cycle *c* and state *s*,  $X_{jc}$  is a vector of campaign and candidate characteristics from Table 2,  $Non - incumbent_{jc}$  is an indicator variable set to one for challengers and open race candidates and zero for incumbents, and  $\alpha_j$  and  $\alpha_s \times \alpha_c$ are politician and state × election cycle fixed effects, respectively.<sup>10</sup> We measure candidate own-source funding in logs because self-funding is highly skewed. We cluster standard errors at the politician level to account for the possibility that fundraising choices are correlated over time.

Columns (1)–(4) present the results for candidate selfcontributions (with and without candidate fixed effects). Columns (1) and (3) track incumbents; columns (2) and (4) report incremental effects for nonincumbent politicians. The partial correlations for incumbents in columns (1) and (3) show that self-contributions are negatively correlated with PAC contributions and positively correlated with party contributions and independent expenditures in within-politician regressions and with communications costs in regressions that do not control for the politician fixed effects. The results for nonincumbents are stronger and show that self-contributions of nonincumbents are negatively correlated with individual and PAC contributions and, to a lesser extent, to communication costs. The point estimates on the interaction terms in column (2) imply that a 1% decrease in

individual (PAC) contributions is associated with a 2.45% (3.78%) increase in self-contributions of nonincumbent politicians or \$750 (\$1,156) in raw selfcontributions from the \$30,584 average nonincumbent self-contribution in our sample.

Columns (5)–(8) replace candidate self-contributions with self-loans as the dependent variable in Equation (1). In columns (5) and (7), incumbent self-loans are negatively related to individual and PAC contributions and positively related to campaign disbursements. As with self-contributions, the self-loan results are stronger for nonincumbent politicians. In columns (6) and (8), nonincumbent self-loans are significantly negatively related to individual and PAC contributions. In terms of economic significance, a 1% decrease in individual (PAC) contributions in column (6) is associated with a 7.36% (6.23%) increase in self-loans of nonincumbent politicians or \$7,340 (\$6,208) in raw self-loans from the \$99,668 average nonincumbent self-loan in our sample.

The bottom five rows show that nonincumbent politicians contribute more self-funds to their campaigns. Corroborating the results in Table 2, Republicans and politicians who face more primary opponents supply higher amounts of self-loans. The results also show that Senate candidates are less likely to supply selffunding to their campaigns once we control for the size of the campaign, which indicates that our congressional chamber results in Tables 1 and 2 reflect the size of the campaign rather than the chamber effect. We also estimated Equation (1) on a subsample of candidates with available wealth data. The results, available upon request, show that wealthier candidates contribute more self-funds to their campaigns, which corroborates our univariate results in Table 2.

We perform a number of robustness tests and report the results in the online appendix. In Table C.4 in the online appendix, we estimate Equation (1) using the candidate total self-funding as the dependent variable. In Table C.5 in the online appendix, we estimate linear probability models by replacing the dependent variable in Equation (1) from the log-amount of candidate selffunding to an indicator variable set to one for selffunding politicians and zero otherwise. In Table C.6 in the online appendix, we further decompose the nonincumbent indicator variable into an indicator variable (true newcomer) set to one for politicians who run for Congress for the first time and zero otherwise and another indicator variable (2nd timer) set to one for nonincumbent politicians who ran for Congress previously (and lost) and are running again as challengers or open race candidates and zero otherwise. Our results remain largely unchanged.

In a separate set of tests, we also analyze the timing of candidate self-funding within each election cycle as a function of the campaign's success in raising outside funds and the success of opponents' campaign fundraising.

Because this analysis requires itemized candidate contribution and loan data with specific transaction dates, we perform this analysis on the 2003–2018 time period. The results are reported in Table C.7 in the online appendix. Overall, the results show that candidates do not really time self-contributions or loans to periods when campaign outside fundraising is low. Most coefficients are statistically insignificant and/or economically quite small. The results do show that *nonincumbent* politicians are more likely to self-fund their campaigns when contributions from outside PACs are low, although the substitution of self-funding for PAC contributions is less than dollar-for-dollar.<sup>11</sup> We also find little evidence that opponent fundraising explains the timing of self-contributions and loans, which is inconsistent with a conjecture that own-source campaigns may resort to self-financing to stay competitive with their opponents.<sup>12</sup>

Instead, candidate own-source funding, in particular self-loans, are concentrated in quarter-end months and during the primary and general election seasons. Figure 2 reports the results. Panel (a) shows that monthly self-contribution and loan totals distinctly peak in March, June, September, and December of each year, with the pattern especially pronounced for candidate self-loans. The seven quarter-end months together account for 38% of all candidate selfcontributions and 53.5% of all candidate self-loans made during the entire two-year election cycle. One possible explanation for this result is that candidates strategically choose to launch their campaigns at a quarter-end and contribute own-source funds as initial seed money at that time (Biersack et al. 1993).<sup>13</sup> In panel (b), we exclude all candidate self-contributions and loans that are made during the quarter when candidates file their Statements of Candidacy; however, this has a negligible impact on the results. The timing of self-contributions and loans likely relates to the quarterly reporting deadline of the campaign fundraising and spending reports with the FEC when campaigns must take stock of their financial results and set budgetary goals for the upcoming quarter.

The results in Figure 2 also show that own-source funding is concentrated during primary and general election months. The primary election months (April–June when 45% of all primaries in our sample take place) account for 23% (24%) of all candidate self-contributions (self-loans), whereas the general election months (August–November) account for another 34% (21%) of all candidate self-contributions (self-loans). Consistent with prior research, the self-funding totals during the election months are disproportionally concentrated among extreme self-financiers, defined as politicians who contribute at least \$250,000 to their campaigns. In nonelection months, extreme self-financiers contribute 61% of all self-contributions and











*Notes.* This figure shows the aggregate amounts of candidate self-contributions and self-loans by election month. The sample consists of 66,537 candidate self-contributions and 26,895 candidate self-loans from the FEC contributions reports for the 2003–2018 period. Panel (a) presents the total amount of candidate self-contributions (gray bars) and candidate self-loans (black bars) in each election month starting in year *t*-1 relative to the election year *t*. Panel (b) presents self-contribution and self-loan totals excluding new campaigns, defined as campaigns that file their Statement of Candidacy in the same quarter as the quarter when self-contributions and self-loans are made.

63% of all self-loans reported in Figure 2. In contrast, extreme self-financiers contribute 87% of all self-contributions and 73% of all self-loans in primary election months and 94% of all self-contributions and 75% of all self-loans in general election months.

## 3.3. Repayment of Candidate Self-Loans

This section turns to the analysis of debt repayment decisions for candidates that lend money to their own campaigns. If politicians make no effort to retire self-loans after the election, the contrast between self-contributions and self-loans that we drew in the previous section is a distinction without a difference. But if politicians work actively to retire campaign debt, the normative implications of their self-funding choices are not the same. If selfloans are made with explicit or implicit incentives to retire them in the future, it is possible that a politician's choice to lend money to his or her campaign results in different future decision making compared with a choice to make a self-contribution without the possibility of repayment. Data limitations (debt repayment data are available only for 26,895 loans made to 2,383 campaigns during the 2003–2018 period) force us to perform the analysis on a narrow set of data. Our results establish three stylized facts. First, most candidate loans are not fully repaid at the end of the political campaign in which the loans are made. During the 2003–2018 period, 83.19% of all campaigns with candidate self-loans still have candidate debt outstanding at the campaign end. So, candidate loans are typically not short-term bridge loans that are issued within a campaign cycle to meet temporary fundraising needs. In fact, candidate loans remain outstanding for an average of 18.23 months in our sample.<sup>14</sup>

Second, the likelihood that a candidate loan is fully repaid in the future significantly depends on the outcome of the election. The data show that 49.53% of all winning campaigns (107 out of 216) fully retire candidate loans in the future, whereas only 15.64% of losing campaigns (339 out of 2,167) retire candidate debt. The figures for the winning campaigns understate the true percentage of campaigns that successfully retire candidate debt because 121 out of 216 campaigns are still active at the end of our sample period, so they are able to retire debt in subsequent election cycles. Consistent with this, when we confine the analysis to only those campaigns that terminate before the end of our sample period, we find that 65.26% of those campaigns (62 out of 95) fully retire candidate loans during their lifetime. The remaining 33 campaigns retire on average 22.72% of the original candidate loan amount. These results are in line with the conventional wisdom among campaign advisors and political consultants that politicians must make every effort to retire existing campaign debt quickly:

Campaign debt should be eliminated as quickly as possible after Election Day. Prompt debt reduction not only demonstrates viability on your part as a candidate, but it also speaks to your leadership ability. The very first step is the courage to ask for a check. Without grasping the necessity of asking for contributions, you will never win another election (in "Winning Elections: Political Campaign Management, Strategy & Tactics," Faucheux 2003, p. 305).

The quote suggests that there is a high reputational cost to indebted politicians not to retire debt quickly, so campaign contributions may be valuable because they signal candidate quality in addition to fulfilling future reelection needs (Grossman and Helpman 1994).

Third, losing campaigns have little chance to repay candidate loans after the election. In the entire sample of 339 losing campaigns that successfully retire candidate loans, 292 retirements take place before the election. We investigate the remaining 47 loan retirements and find that in 68% of the cases, losing campaigns retire candidate loans by selling their voter lists to other campaigns.<sup>15</sup>

## 4. Legislative Decisions of Self-Funding Politicians

The results in the previous section show that a considerable percentage of politicians contribute own funds to their campaigns. A sizable percentage of these politicians succeed in their election bids and, in cases of self-loans, works actively to repay them in subsequent election cycles. These results raise a question of whether self-funding politicians behave differently in Congress compared with politicians who do not rely on own-source funding. We analyze this question in two steps. First, we compare legislative decisions of self-funding politicians to those of other politicians. Because self-funding decisions are clearly not random, this analysis is not causal. Our goal is more modest. We want to assess whether the legislative behavior of self-financiers differs systematically from the legislative behavior of others. Second, we discuss possible interpretations of the uncovered differences and present a test that provides plausibly more directional evidence on the importance of self-funding choices for legislative behavior.

#### 4.1. Voting Decisions of Self-Funding Politicians

We follow a standard methodology in the literature (see, e.g., Ansolabehere et al. 2003) and examine the relation between political contributions and roll call votes cast by self-funding and other politicians. Our laboratory is legislator voting on labor-related legislation. We pick labor voting because (i) the winners of the votes and their policy positions are clearly defined, (ii) labor unions are active contributors to political campaigns with over \$700 million in campaign contributions during our sample period, and (iii) a considerable majority of self-funding and other politicians in office (70%) receive financial support from labor PACs. Moreover, because labor legislation affects relatively small groups of the electorate in many jurisdictions, it is likely to have limited impact on electoral incentives of many politicians, which increases those politicians' incentives to cater to special interests in exchange for campaign contributions unencumbered by competition from political rivals.<sup>16</sup>

The dependent variable in our tests is the roll call voting score computed by the American Federation of Labor–Congress of Industrial Organizations (AFL-CIO) for the period 1999–2018. Similar to many interest groups, the AFL-CIO identifies 15–30 bills in each Congressional session that it considers especially important to its interests and computes the percentage of times that each lawmaker votes with the group. The labor voting score (LVS), ranging from 0%–100%, is computed for each lawmaker-calendar year and tracks a politician's alignment with the views of the Federation of Labor.

We estimate fixed effects regressions that relate the labor voting score of each politician to the political contributions received from labor PACs in the previous year, the amount of self-funding from the prior campaign, as well as the interaction of these two variables:

$$LVS_{jt} = \alpha_j + \alpha_t + \alpha C_{jt-1}^{Labor} + \beta SF_{jc-1}^i + \gamma C_{jt-1}^{Labor} \times SF_{jc-1}^i + \delta X_{jt-1} + \varepsilon_{jt},$$
(2)

where  $LVS_{jt}$  is the labor voting score for politician *j* in year t,  $C_{it-1}^{Labor}$  is the proportion of politician j's total campaign financing raised from Labor PACs in year t-1,  $SF_{ic-1}^{i}$  is (i) the sum of politician j's campaign debt outstanding and personal contributions in the prior campaign *c*-1 divided by the total receipts in that campaign (SF<sup>Proportion</sup>), (ii) an indicator variable set to one if politician *j* has contributed self-funds in the prior campaign and zero otherwise ( $SF^{Indicator} = 1_{SF_{ic-1}>0}$ ), or (iii) the natural logarithm of one plus the total amount of self-funding by politician *j* ( $SF^{Amount} = ln(1 + SF_{ic-1})$ ). The vector  $X_{it-1}$  contains control variables that include (i) the newcomer indicator set to one if politician *j* was a newly elected member of Congress in congressional session *c*-1 and zero otherwise, (ii) the Nokken-Poole ideology score of politician j, (iii) the logarithm of politician j's current rank in the Congressional chamber (Congress rank), (iv) the logarithm of politician *j*'s age (Age), (v) the logarithm of total non-self-funding receipts from the prior campaign c-1 (Outside receipts), (vi) the logarithm of the total receipts from the prior campaign *c*-1 (Total receipts), and (vii) indicator variables for each congressional committee that politician *j* sits on. Politician and year fixed effects are denoted by  $\alpha_i$  and  $\alpha_i$ . The politician fixed effect  $\alpha_i$ absorbs observed and unobserved time-invariant politician characteristics that may be correlated with the politician's propensity to self-fund the campaign and the labor voting score; so our tests compare politicians' labor voting decisions in years following campaigns with positive self-funding with other years when the same politicians did not self-fund their campaigns. The year fixed effect  $\alpha_t$  controls for common time shocks to all politicians. In some specifications, we replace the year fixed effects with state  $\times$  year fixed effects. These fixed effects control for economic conditions in a given state and year that could be correlated with both the politicians' self-funding decisions and the labor voting scores. We cluster standard errors at the politician level to account for the possibility that the labor voting scores are correlated over time. In addition to estimating Equation (3) with politicians'

self-funding totals, we also use politicians' selfcontribution ( $SC_{jc-1}^{i}$ ) and campaign loan ( $D_{jc-1}^{i}$ ) totals from the prior campaign as explanatory variables.

Table 4 presents descriptive statistics for the data used in our labor voting tests, and Table 5 presents the results of estimating Equation (2). The first column in Table 5 shows a specification with politician and year fixed effects only and no control variables. The results show that for non-self-funders, there is an insignificant relation between political contributions from labor unions and labor voting scores. The coefficient on  $C_{it-1}^{Labor}$ is positive but insignificant. This evidence is consistent with Ansolabehere et al. (2003) that also shows no relation between voting scores and contributions from affected special interests once politician fixed effects are included in the regression. The results are different for self-funding politicians. Although the proportion of self-funding in the prior campaign is only weakly negatively related to labor votes (the  $\beta$  coefficient is significant at 10%), the coefficient on the interaction of self-funding and labor contributions ( $\hat{\gamma}$ ) is positive and highly statistically significant. This evidence shows that self-funding politicians are not necessarily more or less likely to vote prolabor unconditionally; however, their voting decisions are significantly more sensitive to contributions received from labor PACs.

For an economic interpretation of the results, we compute changes in politicians' voting scores for a one standard deviation change in labor contributions (holding self-funding as a proportion of total receipts at the mean value of 0.039). The resulting increase in the voting score is 0.22% ( $0.0224 \times 0.098$ ) for non-self-funding politicians and 0.35% for self-funding politicians (0.0224 imes $0.098 - 0.0122 \times 0.039 + 0.4646 \times 0.098 \times 0.039$ ), a 59% increase. Consistent with prior evidence, contributions from special interests are not the first-order determinant of voting behavior. Instead, voting decisions depend primarily on politicians' own beliefs and the preferences of their voters and their party (Ansolabehere et al. 2003). However, our results show that, relative to politicians who do not self-fund their campaigns, self-funders' voting decisions are significantly more correlated with contributions from special interest groups.

In columns (2)–(5) of Table 5, we add various controls to the base model in column (1). In column (2), we add a nonincumbent indicator to control for the possibility that our results for self-funding politicians simply reflect their nonincumbent status. We also control for the politicians' ideology with the Nokken-Poole ideology score, the logarithm of the current politician rank in the Congressional chamber, and the logarithm of the candidate's age. The coefficient estimate on the interaction term is higher than that in column (1). In column (3), we further include two additional control variables: the logarithm of the total receipts and the logarithm of the total outside receipts from the prior campaign

Table 4.	Descriptive	Statistics	for	Labor	Vote	Tests,	1999-	-2018
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Variable	Ν	Mean	St. dev.	Median	P1	P25	P75	P99
Labor voting score	8,857	0.538	0.409	0.520	0.000	0.130	0.970	1.000
Self-funding proportion (SF <sup>Proportion</sup> )	8,857	0.039	0.169	0.000	0.000	0.000	0.013	0.624
Ln(1+Self-funding amount) (SF <sup>Amount</sup> )	8,857	4.220	5.269	0.000	0.000	0.000	9.834	14.330
Self-funding indicator (SF <sup>Indicator</sup> )	8,857	0.411	0.492	0.000	0.000	0.000	1.000	1.000
Self-contribution proportion (SC <sup>Proportion</sup> )	8,857	0.004	0.042	0.000	0.000	0.000	0.000	0.054
Ln(1+Self-contribution amount) ( <i>SC</i> <sup>Amount</sup> )	8,857	0.986	2.807	0.000	0.000	0.000	0.000	11.675
Self-contribution indicator (SC <sup>Indicator</sup> )	8,857	0.122	0.327	0.000	0.000	0.000	0.000	1.000
Self-loan proportion (D <sup>Proportion</sup> )	8,857	0.035	0.162	0.000	0.000	0.000	0.012	0.504
Ln(1+Self-loan amount) (D <sup>Amount</sup> )	8,857	3.866	5.240	0.000	0.000	0.000	9.665	14.036
Self-loan indicator (D <sup>Indicator</sup> )	8,857	0.168	0.374	0.000	0.000	0.000	0.000	1.000
Labor proportion	8,857	0.060	0.098	0.018	0.000	0.000	0.092	0.357
Newcomer indicator	8,853	0.166	0.372	0.000	0.000	0.000	0.000	1.000
Nokken-Poole ideology score	8,207	0.044	0.439	0.134	-0.561	-0.376	0.447	0.846
Ln(Congress rank)	8,785	1.447	0.912	1.386	0.000	0.693	2.079	3.497
Ln(Age)	8,857	4.057	0.185	4.078	3.555	3.951	4.190	4.419
Ln(Outside receipts)	8,857	14.126	0.879	13.998	12.324	13.543	14.570	16.537
Ln(Total receipts)	8,857	14.156	0.884	14.025	12.408	13.558	14.612	16.571

*Notes.* This table shows debt and campaign related descriptive statistics for members of Congress for the period 1999 to 2018. The labor voting score, ranging from 0%–100%, is computed by the American Federation of Labor for each politician-congressional session and tracks a politician's alignment with the views of the Federation of Labor. Self-funding (self-contributions, self-loans) proportion is total amount of candidate self-funding (self-contributions, self-loans) scaled by total receipts. Self-funding (self-contribution, self-loan) amount is the total amount of candidate self-funding (self-contributions, self-loans). Self-funding (self-contribution, self-loan) amount is the total amount of candidate self-funding (self-contributions, self-loans). Self-funding (self-contribution, self-loan) amount is the total amount of candidate self-funding (self-contributions, self-loans). Self-funding (self-contribution, self-loan) indicator is an indicator variable set to one if a politician contributes self-funds (self-contributions, self-loans) to the campaign and zero otherwise. Labor proportion is the proportion of total campaign financing raised from Labor PACs. Newcomer indicator is an indicator set to one if a politician ran as a challenger or an open race candidate in the most recent election and zero otherwise. Nokken-Poole ideology score is the politician. Outside receipts is the total funds raised by the campaign excluding candidate self-contributions and self-loans. Total receipts is the total campaign receipts. St. dev., standard deviation.

(outside receipts comprise the total amount of funds raised by campaigns that do not come from candidate self-contributions and self-loans). These two variables control for the possibility that self-funding decisions simply proxy for the size and complexity of prior and future campaigns, so self-funding politicians are naturally more sensitive to contributors' wishes. The coefficient on the interaction of contributions from labor PACs with the proportion of self-funding barely moves (0.5193) and is statistically significant at the 1% level. In column (4), we add state  $\times$  year fixed effects. These fixed effects control for economic conditions in a given state and year that could be correlated with both the politicians' indebtedness and their subsequent voting decisions. Finally, in column (5), we add a vector of indicator variables for each congressional committee that a politician sits on. In both columns (4) and (5), the coefficient on the interaction of labor contributions with self-funding is higher than that in column (1) and statistically significant at the 1% level.

In the last two columns of Table 5, we decompose politicians' self-funding into self-contributions (column (6)) and self-loans (column (7)) to analyze whether the selffunding results in columns (1)–(5) reflect politicians' decisions to supply self-contributions or self-loans to their campaigns. The results are economically similar for self-contributions and self-loans, although only the results for self-loans are statistically significant. The point estimates in columns (6) and (7) imply that a one-standard-deviation increase in labor contributions increases the labor voting score by 0.49% for self-contributing politicians (holding self-contributions as a percentage of total receipts at the mean of 0.004), which is quite similar to the 0.47% increase in the labor voting score by politicians who do not supply self-funds to their campaigns. In comparison, the same change in labor contributions increases the labor voting score by 0.56% for politicians who supply self-loans to their campaigns.<sup>17</sup> In the analysis below, we perform additional tests to understand whether the effects of self-loans and self-contributions on labor voting are any different.

## 4.2. Voting Decisions of Self-Funding Politicians: Robustness Tests

In Table 6, we conduct a series of specification checks to verify the robustness of our baseline findings. Because of the differences in the statistical significance of the results for self-contributions and self-loans, we report the results separately for self-contributions (Panel A) and self-loans (Panel B). Each model is estimated using a full set of control variables and fixed effects as in columns (5), (6), and (7) of Table 5. In the interest of space, we only report the coefficient estimates on labor contributions ( $C_{jt-1}^{Labor}$ ), the self-funding variables (either  $SC_{jc-1}^{i}$  or  $D_{jc-1}^{i}$ ), and the interaction terms (either  $C_{jt-1}^{Labor} \times SC_{jc-1}^{i}$  or  $C_{jt-1}^{Labor} \times D_{jc-1}^{i}$ ).

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
C <sup>Labor</sup> <sub>it-1</sub>	0.0224	0.0350**	0.0343**	0.0302*	0.0397**	0.0483***	0.0404**
$SF_{jc-1}^{Proportion}$	(0.0177) $-0.0122^{*}$	(0.0151) -0.0159	(0.0152) -0.0177*	(0.0167) -0.0098	(0.0180) -0.0090	(0.0187)	(0.0180)
$C_{jt-1}^{Labor} \times SF_{jc-1}^{Proportion}$	(0.0773) $0.4646^{***}$ (0.1413)	(0.0099) 0.5179*** (0.1543)	(0.0107) 0.5193*** (0.1547)	(0.0101) 0.5965*** (0.1353)	(0.0095) 0.5638*** (0.1487)		
$SC_{jc-1}^{Proportion}$	(0.1110)	(0.1010)	(0.1017)	(0.1000)	(0.1107)	-0.0139	
$C_{jt-1}^{Labor} \times SC_{jc-1}^{Proportion}$						(0.0410) 0.5445 (0.8227)	
$D_{jc-1}^{Proportion}$						(0.0227)	-0.0086
$C_{jt-1}^{Labor} \times D_{jc-1}^{Proportion}$							0.5694***
Nonincumbent		-0.0068	-0.0079	$-0.0097^{*}$	-0.0090	-0.0080	-0.0090
Nokken-Poole ideology		$-0.2204^{***}$	$-0.2213^{***}$	$-0.2155^{***}$	$-0.2149^{***}$	-0.2130***	$-0.2148^{***}$
Ln(Congress rank)		0.0154***	0.0152***	0.0171***	0.0189***	0.0190***	0.0189***
Ln(Age)		$-0.1757^{**}$	$-0.1741^{*}$	-0.1893*	-0.2453**	-0.2344**	$-0.2455^{**}$
Ln(Outside receipts)		(0.0094)	-0.0116	-0.0087	-0.0136	-0.0152	(0.0987) -0.0140 (0.0110)
Ln(Total receipts)			0.0106	0.0109	0.0162	0.0179	0.0110)
Committee controls	No	No	(0.0105) No	(0.0100) No	Yes	(0.0120) Yes	(0.0110) Yes
Politician fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	No	No	No	No
State × Year fixed effects	No	No	No	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.956	0.958	0.958	0.960	0.961	0.960	0.961
<u>N</u>	8,800	8,095	8,095	8,054	8,054	8,054	8,054

Table 5. Self-Funding Politicians and Labor Voting, 1999–2018

Notes. This table shows coefficient estimates of the model

$$LVS_{jt} = \alpha_j + \alpha_t + \alpha C_{jt-1}^{Labor} + \beta SF_{jc-1}^{Proportion} + \gamma C_{jt-1}^{Labor} \times SF_{jc-1}^{Proportion} + \delta X_{jt-1} + \varepsilon_{jt},$$

where  $LVS_{jt}$  is the labor voting score for politician *j* in congressional session *t*;  $\alpha_j$  and  $\alpha_t$  are politician and year fixed effects, respectively;  $C_{jt-1}^{Lubor}$  is the proportion of politician *j*'s total campaign financing raised from Labor PACs in year *t*-1;  $SF_{jc-1}^{Proportion}$  is the sum of politician *j*'s campaign debt outstanding and personal contributions in the prior campaign *c*-1 divided by the total receipts in that campaign; and  $X_{jt-1}$  is a vector of control variables. Columns (6) and (7) replace  $SF_{jc-1}^{Proportion}$  with candidate self-contributions ( $SC_{jc-1}^{Proportion}$ ) and candidate self-loans ( $D_{jc-1}^{Proportion}$ ), respectively. The sample period is from 1999–2018. Standard errors (reported in parentheses) are adjusted for heteroskedasticity and clustered by politician. \*\*\*\*\*\* designate significance at 1%, 5%, and 10% levels, respectively.

First, we repeat the analysis with alternative definitions of self-contributions and self-loans. In row 1 of each panel, we replace the proportion of selfcontributions and self-loans with indicator variables that take a value of one for politicians who supply self-contributions (Panel A) or self-loans (Panel B) to their campaigns and zero otherwise. Because our aim is to pin down the role of self-financing choices that are independent of one another, we estimate regressions in row 1 on subsamples that exclude politicians who supply self-contributions and self-loans in the same election cycle, respectively. The extensive margin tests show that politicians with significant self-contributions vote no differently from other politicians (Panel A), whereas politicians making significant self-loans are more sensitive in their labor voting

decisions to labor contributions compared with other politicians (Panel B). We also replace the proportions of candidate self-contributions and self-loans with the natural logarithm of self-contributions and self-loans. The results in row 2 show that politicians with higher amounts of self-contributions and self-loans vote more prolabor if they receive more labor contributions relative to other politicians.

Second, one concern might be that because Equation (2) uses labor contributions from the previous year to explain labor voting in the current year, our results may be affected by conditions in the previous election cycle when politicians decide to self-fund their campaigns. We address this possibility in two ways. We first repeat our analysis by replacing labor contributions in the previous year in Equation (2)

			Pa	arameter estimate	S	
	Specification	C <sup>Labor</sup>	$SC_{jt-1}$	$C^{Labor} \times SC_{jt-1}$	Adjusted R <sup>2</sup>	Ν
(1)	$SC_{ic-1} = 1_{SC_{ic-1} > 0}$	0.0301	-0.0049	0.0995	0.962	6,642
		(0.0191)	(0.0076)	(0.0668)		
(2)	$SC_{jc-1} = ln(1 + SC_{jc-1})$	0.0355*	-0.0016**	0.0201**	0.961	8,054
		(0.0182)	(0.0007)	(0.0079)		
(3)	$C^{Labor} = C^{Labor}_{it}$	0.0055	-0.0249	0.5337	0.961	8,054
	J*	(0.0267)	(0.0426)	(0.6970)		
(4)	$C^{Labor} = C^{Labor}_{it-1}$ , election years	0.0758***	$-0.0912^{*}$	1.9511	0.952	3,888
	j	(0.0263)	(0.0529)	(2.2416)		
(5)	Control for candidate wealth	0.0485**	-0.0081	-2.0965	0.965	4,372
		(0.0211)	(0.0388)	(1.7714)		
(6)	Control for candidate wealth and its interaction with $C_{it-1}^{Labor}$	0.3967**	-0.0717	-1.9028	0.965	4,372
	)	(0.1682)	(0.0523)	(1.7217)		
(7)	Control for $C_{it-1}^{Labor} \times Non - incumbent_{ic-1}$	0.0334*	-0.0125	0.3307	0.961	8,054
	).	(0.0182)	(0.0403)	(0.8330)		
(8)	Control for $C_{it-1}^{Labor} \times X_{jt-1}$	1.5035**	-0.0365	0.3386	0.961	8,054
	<u>, - , , , , , , , , , , , , , , , , , ,</u>	(0.6083)	(0.0407)	(0.8366)		
	Panel B: Cand	idate self-loar	IS			

			Pa	rameter estimate	s	
	Specification	$C^{Labor}$	D <sub>jt-1</sub>	$C^{Labor} \times D_{jt-1}$	Adjusted R <sup>2</sup>	Ν
(1)	$D_{jc-1} = 1_{D_{jc-1}>0}$	0.0310	-0.0160**	0.1186**	0.962	7,028
		(0.0188)	(0.0072)	(0.0574)		
(2)	$D_{jc-1} = ln(1+D_{jc-1})$	0.0184	-0.0003	0.0082**	0.961	8,054
		(0.0199)	(0.0005)	(0.0033)		
(3)	$C^{Labor} = C^{Labor}_{it}$	0.0014	-0.0118	0.5302***	0.961	8,054
	).	(0.0264)	(0.0110)	(0.1854)		
(4)	$C^{Labor} = C^{Labor}_{it-1}$ , election years	0.0744***	-0.0173	1.0137***	0.952	3,888
· /	<i>ji</i> =1 , <i>j</i>	(0.0253)	(0.0150)	(0.2761)		,
(5)	Control for candidate wealth	0.0392*	-0.0113	0.5417**	0.965	4,372
· /		(0.0196)	(0.0129)	(0.2708)		,
(6)	Control for candidate wealth and its interaction with $C_{\mu}^{Labor}$	0.3127**	-0.0105	0.5246*	0.965	4.372
(-)		(0.1411)	(0.0129)	(0.2738)		,-
(7)	Control for $C_{i,j}^{Labor} \times Non - incumbent_{ic-1}$	0.0309*	-0.0051	0.4409***	0.961	8.054
(- )		(0.0179)	(0.0097)	(0.1652)	0.7.0-	0,000
(8)	Control for $C_{ii}^{Labor} \times X_{ii}$	1 5359**	-0.0001	0.3530**	0.961	8 054
(0)	control for c <sub>jt-1</sub> , r <sub>jt-1</sub>	(0.6041)	(0.0093)	(0.1610)	0.901	0,001

*Notes*. This table shows the robustness results of models 6 and 7 described in Table 5. For brevity, only parameter estimates on labor contributions, self-funding variables and the interactions of labor contributions with self-funding variables are reported. Each robustness test is described in the paper. Panel A presents the results for candidate self-contributions. Panel B presents the results for candidate self-loans. The sample period is from 1999–2018. Standard errors (reported in parentheses) are adjusted for heteroskedasticity and clustered by politician.

\*\*\*, \*\*, and \* designate significance at 1%, 5%, and 10% levels, respectively.

with the current year's labor contributions. The results are reported in row 3 of each panel. We also repeat the analysis by keeping the lagged structure of the variables but estimating Equation (2) only in election years. In this test, labor votes and labor contributions are measured in the same election cycle (for example, labor votes in 2018 are regressed on labor contributions in 2017) but the self-funding variables continue to be measured in the prior election cycle (2016 in the previous example). The results are reported in row 4 of each panel. In Panel A, there is no robust relation between self-contributions and voting decisions. In contrast, the results in Panel B show that politicians who supply self-loans to their campaigns make voting decisions that are significantly more sensitive to labor contributions compared with other politicians.

Third, we address the possibility that our selffunding variables simply pick up the effects of politicians' wealth on voting behavior. We use data on politicians' personal assets and liabilities from the *Center for Responsive Politics* for the 2004–2014 period to calculate personal wealth (defined as median personal assets minus median personal liabilities) and include this variable as well as its interaction with labor contributions in our baseline specification. The results, reported in rows 5 and 6, show that only those politicians who supply self-loans to their campaigns are more likely to vote prolabor if they receive labor contributions compared with other politicians.

Fourth, we consider the possibility that politician characteristics affect not only labor voting directly but also the sensitivity of labor voting to labor contributions and that our self-funding variables are picking up that sensitivity in the cross section. This concern is especially valid for nonincumbent politicians who are more likely to selffund their campaigns and may be particularly sensitive to labor contributions because their policy positions are still undeveloped. In row 7, we interact the nonincumbent indicator with labor contributions and include this interaction as an additional control in Equation (2). In row 8, we go further and include interactions of all control variables with labor contributions in Equation (2). The inclusion of the additional interaction terms does not overturn our baseline results. Politicians who supply self-loans are more sensitive in their labor voting decisions to labor contributions; politicians who supply selfcontributions vote no differently than other politicians.

### 4.3. Voting Decisions of Self-Funding Politicians: Subsample Analysis

In Table 7, we turn to the subsample analyses of selffunders' voting decisions. Each model is estimated using the full set of control variables and fixed effects using self-contributions or self-loans as the main explanatory variables. In the interest of space, we only present the coefficient estimates on labor contributions, the self-funding variables, and interactions of self-funding with labor contributions. The first two rows of Panel A present subsample results by the politicians' party affiliation. The results in Section 3 showed that Republicans rely more heavily on selffunding, especially self-loans; the results in Table 7 show that Republicans with self-loans are more likely to vote prolabor if they receive more labor contributions compared with non-self-funding Republicans.<sup>18</sup> Notably, there is no relation between Republican selfcontributions and voting decisions. There is also no relation between self-contributions and self-loans for Democrats' voting decisions. This evidence supports the view that Democrats vote prolabor regardless of their self-funding choices, so labor contributions and self-funding decisions are uncorrelated with voting.

Rows 3 and 4 of Panel A focus separately on politicians who represent landslide and competitive congressional districts (CDs). We measure district competitiveness by the percentage of the presidential democratic vote and define landslide districts as those with more than 60% or less than 40% of the presidential democratic vote. Competitive districts are those with votes within the 40% and 60% bounds. The results show that politicians who supply self-loans are significantly more likely to vote prolabor if they receive labor contributions, and the association is stronger in competitive districts where constituents are more likely to be evenly divided on labor issues. The self-contribution results are insignificant.

Rows 5–8 focus on politicians' experience. Even though we control for the politician's nonincumbent status in baseline regressions in Table 5, and we allow the nonincumbent status to affect the sensitivity of labor votes to labor contributions in Table 6, it still may be the case that political experience jointly determines self-funding choices and voting behavior. Therefore, in row 5, we exclude all freshmen politicians from the sample and analyze the voting decisions of incumbent politicians only. The average tenure of incumbent politicians is 5 years in the House and 18 years in the Senate at the time of the vote, so incumbent politicians in our sample have considerable political experience and an established voting track record at the time when we measure their voting decisions. The results for incumbent politicians are quite similar to the results for the whole sample, which helps alleviate a concern that our results are driven by the politicians' inexperience. We also partition all politicians into terciles based on their congressional tenure and report the results separately for junior politicians (row 6), experienced politicians (row 7), and senior politicians (row 8). The significant relation between self-loans and voting behavior is present in all groups. In contrast, we do not find robust results for self-contributions.

The bottom row of Panel A analyzes the intensive margin of self-funding decisions. We limit the analysis to the subsample of self-funding politicians only and ask whether politicians who provide more selfcontributions or self-loans to their campaigns make voting decisions differently than politicians with less self-contributions or self-loans. The results show that within the subsample of self-funders, politicians who supply more self-loans to their campaigns are significantly more likely to vote prolabor if they receive more labor contributions. However, there is no relation between self-contributions and voting decisions within the subsample of self-contributing politicians.

Panel B of Table 7 presents subsample results for politicians who represent congressional districts with various degrees of labor unionization. On the one hand, it is possible that self-funding politicians disproportionally represent congressional districts with a high presence of organized labor, so their labor voting decisions are determined by constituent preferences rather than by self-funding choices. For example, the positive coefficient on the interaction of labor PAC contributions with self-funding could simply reflect the increased supply of labor contributions to self-

		Candi	date self-c	ontributions reg	gressions		Candidat	e self-loan regi	ressions	
			Param	eter estimates			Para	ameter estimat	es	
	Subsample	$C_{jt-1}^{Labor}$	$SC_{jt-1}^{Prop}$	$C_{jt-1}^{Labor} \times SC_{jt-1}^{Prop}$	Adjusted R <sup>2</sup>	$C_{jt-1}^{Labor}$	$D_{jt-1}^{Prop}$	$C_{jt-1}^{Labor} \times D_{jt-1}^{Prop}$	Adjusted R <sup>2</sup>	Ν
	Panel A: L	abor voting	results by	v party affiliatio	n, election cor	npetitivenes	ss, and poli	tical experience	e	
(1)	Democrats	0.0104	-0.0511	-0.1888	0.559	0.0093	0.0319	0.1198	0.559	3,818
. ,		(0.0129)	(0.0483)	(0.8720)		(0.0129)	(0.0477)	(0.2020)		
(2)	Republicans	-0.0338	-0.0065	-15.8527	0.695	-0.0408	-0.0108	0.8382**	0.696	3,931
. ,	1	(0.0409)	(0.0633)	(14.6510)		(0.0409)	(0.0113)	(0.4182)		
(3)	Landslide districts	0.0131	-0.1036	-3.1610	0.979	0.0047	0.0051	0.3310**	0.979	3,367
. ,		(0.0184)	(0.1014)	(2.4969)		(0.0172)	(0.0065)	(0.1325)		
(4)	Competitive districts	0.0557	-0.0281	1.5486	0.951	0.0368	-0.0166	1.7388***	0.952	3,870
, ,	1	(0.0388)	(0.0630)	(0.9829)		(0.0355)	(0.0198)	(0.6173)		
(5)	Incumbents only	0.0358**	0.0208	0.1470	0.962	0.0313*	-0.0075	0.4663**	0.962	6,647
, ,	ý	(0.0181)	(0.1470)	(0.8004)		(0.0177)	(0.0102)	(0.1863)		
(6)	Junior politicians	0.0449	0.0287	0.2706	0.963	0.0063	-0.0565**	0.9211**	0.963	3,106
, ,	· 1	(0.0500)	(0.0615)	(0.8693)		(0.0488)	(0.0257)	(0.4338)		
(7)	Experienced politicians	0.0341	-0.2816	8.1147***	0.961	0.0186	-0.0854*	0.8555**	0.961	1,918
. /	1 1	(0.0574)	(1.6854)	(0.8536)		(0.0583)	(0.0476)	(0.4171)		,
(8)	Senior politicians	0.0174	0.0823	4.9298*	0.964	0.0118	-0.1084	1.0162*	0.964	2,302
, ,	1	(0.0180)	(0.1031)	(2.8377)		(0.0184)	(0.0935)	(0.5507)		
(9)	Politicians w/ positive	-0.0009	0.1127	-2.2380	0.941	0.0454	-0.0311**	0.7136***	0.963	2,722
, ,	contributions or loans									
		(0.0687)	(0.1341)	(3.9400)		(0.0345)	(0.0126)	(0.2217)		
			Pane	l B: Labor votin	g and labor u	nionization				
(1)	Politicians from low	0.3221***	0.0318	6.9931	0.957	0.2711***	-0.0806*	1.9508**	0.957	1,876
	unionization CDs									
		(0.0986)	(0.1157)	(7.9776)		(0.0986)	(0.0466)	(0.8474)		
(2)	Politicians from average unionization CDs	0.0914**	0.0103	-0.7062	0.963	0.0935**	0.0889	1.0334	0.963	1,708
		(0.0385)	(0.1656)	(1.2729)		(0.0382)	(0.0696)	(0.9328)		
(3)	Politicians from high unionization CDs	0.0103*	0.0481	6.5476**	0.965	0.0051	-0.0648	0.7318	0.965	1,571
		(0.0210)	(0.2089)	(3.2814)		(0.0217)	(0.0716)	(0.5203)		

 Table 7. Self-Funding Politicians and Labor Voting: Subsample Analysis, 1999–2018

*Notes*. This table shows the subsample results of estimating models 6 and 7 described in Table 6. For brevity, only parameter estimates on labor contributions, self-funding variables, and the interactions of labor contributions with self-funding variables are reported. Each subsample is described in the paper. Panel A presents the subsample results separated by party affiliation, election competitiveness, and political experience. Panel B presents the subsample results separated by congressional district labor unionization intensity. The sample period is from 1999–2018. Standard erorrs (reported in parentheses) are adjusted for heteroskedasticity and clustered by politician.

\*\*\*,\*\*, and\* designate significance at 1%, 5%, and 10% levels, respectively.

funded politicians and their alignment with local constituents in their voting decisions. On the other hand, the lobby literature argues that politicians' incentives to cater to special interests are higher when local voters are indifferent about the lobbying issue, which in our setting implies that self-funding politicians who represent congressional districts with a small presence of organized labor should exhibit a higher sensitivity of labor voting to labor contributions. The self-loan results are consistent with the lobbying prediction. We partition all CDs into labor unionization terciles and find that politicians who supply self-loans are significantly more sensitive to labor contributions only in low labor unionization CDs. In the middle and high unionization CDs where local voters are likely to care more about labor issues, the relation is significantly weaker and statistically insignificant, which implies

that politicians in those districts vote prolabor regardless of labor contributions. We find no consistent relation between the presence of organized labor and labor voting decisions for politicians who supply selfcontributions to their campaigns.

In sum, the labor voting tests in Tables 5–7 show that labor voting decisions of self-funding politicians differ systematically from those of other politicians. Self-funders, specifically politicians who supply self-loans to their campaigns, are significantly more sensitive in their labor voting decisions to political contributions from labor PACs compared with politicians who do not rely on own-source funding. The self-loan result is present among newcomers and experienced incumbent politicians and is stronger for Republicans (especially those who are more likely to vote prolabor), for politicians who represents districts with smaller presence of organized labor, and for politicians who run in more competitive districts.

## 4.4. Possible Interpretations of Self-Funders' Voting Behavior

As discussed above, there are at least four different possibilities for why self-funders' voting behavior might be different from that of other politicians. One possibility is that self-funding choices are correlated with politician characteristics, which in turn affect voting decisions. Our battery of tests shows that the results cannot be explained by time invariant politician characteristics nor can they be explained by political ideology, the complexity of the upcoming campaign, general time trends, or time varying local economic conditions. The results in Tables 6 and 7 also show that voting decisions of self-funding politicians cannot be fully explained by wealth, political inexperience, or electoral competition. So, even though we cannot completely rule out the missing variable explanation, the results above show that the more likely politician characteristics do not explain our results.

The results also do not line up with the view that self-funders vote differently because they are less beholden to special interests. This interpretation implies that self-funders' voting decisions should be independent of contributions from special interests (and instead be related to constituent characteristics). However, our results show that self-funders' voting decisions exhibit statistically equal sensitivity to contributions from special interests when politicians supply self-contributions and a significantly higher sensitivity to special interest contributions when politicians supply self-loans to their campaigns. Moreover, the labor unionization tests in Table 7 show no consistent pattern in self-funders' voting behavior across congressional districts with high and low presence of organized labor. Self-contributing politicians are more likely to vote prolabor if they receive labor contributions in high labor unionizations CDs, which could be interpreted as consistent with the view that self-funders cater to local constituents by voting prolabor and labor special interests in turn "reward" self-funders with higher contributions. However, this pattern does not hold for politicians who supply selfloans to their campaigns. These politicians are more sensitive in their labor voting decisions to labor contributions but only in *low* labor unionization CDs, which are presumably areas where local voters are indifferent about the lobbying issue.

Instead, the results lend support to the lobby view that self-funders vote differently from other politicians because they face financial and/or reputational pressure to "sell" political favors to special interests in order to demonstrate their fundraising skills and to retire campaign debt accumulated in prior campaigns. Consistent with this view, self-funders, specifically those who supply self-loans, are more likely to vote prolabor if they receive contributions from labor special interests. The relation is stronger in competitive races where the fundraising pressure is presumably greater. Whether self-funders sell votes or access is difficult to discern from our results, although the fact that we find similar results for nonincumbent politicians who are likely to be uninformed and for seasoned incumbent politicians who are likely to be informed suggests that self-funders as a group are less likely to sell access. However, it may well be the case that different self-funding politicians sell different political favors to special interests.

Although it is beyond the scope of this paper to fully sort out the precise mechanism that generates the associations documented above, this section presents an additional test that provides further support for the view that self-funders, self-lenders in particular, exchange political favors for campaign contributions from special interests. The test centers on the regulatory changes concerning the repayment of campaign debt that went into effect with the passage of the Bipartisan Campaign Reform Act of 2002. Prior to BCRA, political campaigns could repay candidate loans for the entire loan amount with outside contributions received any time before or after the election date provided that contributions were clearly made for the purpose of loan repayment. However, the passage of BCRA introduced a strict limit on the repayment of candidate loans. Specifically, the passage of the law limited the repayment of a candidate's personal loan to only \$250,000 from contributions made to the candidate or any authorized committee of the candidate after the election. That is, candidate loans of \$250,000 or less may be repaid from contributions to the candidate or the candidate's authorized committee before, on, or after the election date if contributions are clearly made for the purpose of loan repayment. For candidate loans in excess of \$250,000, however, the candidate's authorized committee may repay the entire loan amount by contributions made to the candidate or the candidate's authorized committee only before or on the election date. Following the election, the authorized committee may repay up to \$250,000 by contributions received after the election date. For the remaining balance, the authorized campaign may use the cash on hand at the election date to pay off the candidate loan. The payment must be made within 20 days of the election, during which time the difference between the personal loan in excess of \$250,000 and the cash on hand used to pay off the personal loan must be reported as a contribution by the candidate. Any balance remaining after all payments are made is foregone by the candidate.

The BCRA passage presents a convenient setting for testing whether self-financing decisions affect legislative behavior. Because the law applies only to large personal loans (i.e., loans in excess of \$250,000), the incentive of self-funding politicians with large personal loans outstanding to exchange political favors in return for postelection campaign contributions is predictably lower after the BCRA passage. Importantly, this affects only self-funders who supply large self-loans after 2002.<sup>19</sup> Self-funders with small personal loans, self-funders with large personal loans made before 2002, and self-funders who supply self-contributions to their campaigns are unaffected by BCRA. We therefore analyze whether the relation between labor contributions and voting is weaker for politicians that made large personal loans after 2002.

We proceed in two steps. First, Figure 3 analyzes whether BCRA had any material impact on the politicians' propensity to supply large self-loans to their campaigns. We focus on the distribution of self-loans between \$100,000 and \$1 million and report the results in the pre- and post-BCRA periods in panel (a). Two pertinent results stand out. First, the implementation of BCRA had a material impact on the propensity of politicians to make large self-loans. Although the distribution of self-loans in the \$100,000-\$1 million range shows no discernible anomalies prior to the passage of BCRA, there is a clear bunching of self-loans in the post-BCRA period at round amounts (such as \$200,000, \$300,000, and \$500,000) and an especially strong bunching at the \$250,000 threshold. The loans at the \$250,000 threshold account for 6.34% of all loans in the \$100,000-\$1 million range post-BCRA exceeding the frequency of any other loan during the same period. The self-loans right at the \$250,000 threshold are also much more common during the post-BCRA period compared with the pre-BCRA period where they account for only 2.18% of all loans.<sup>20</sup> Second, BCRA did not eliminate large self-loans. Forty-four percent of all candidate self-loans post-BCRA exceed the \$250,000 threshold, which suggests that many politicians are unaffected by BCRA and choose to make large self-loans to their campaigns.

In unreported results, we also study the propensity of politicians to supply self-contributions post-BCRA. Given the imposed \$250,000 limit on self-loan repayments, candidates who need to supply significant selffunds to their campaigns are expected to substitute self-loans in excess of \$250,000 for self-contributions. Consistent with this prediction, we find that the likelihood that a politician makes self-contributions increases post-BCRA, especially among politicians who are lending at the \$250,000 threshold. In fact, in contrast to the distribution of self-loans that shows a clear bunching at \$250,000 post-BCRA, the distribution of candidate total self-funding in panel (b) of Figure 3 shows no bunching at the \$250,000 threshold in the pre- and post-BCRA periods. These results imply that BCRA did not reduce the total demand for self-funds;

rather the law affected the allocation of self-funds between self-loans and self-contributions for politicians who supply large amounts to their campaigns.

In the second step, we analyze the impact of BCRA on the voting behavior of self-funding politicians who supply large self-loans to their campaigns. Table 8 presents the results from the following regression model:

$$\begin{split} LVS_{jt} &= \alpha_j + \alpha_t + \alpha C_{jt-1}^{Labor} + \beta_1 D_{jc-1}^{>0} + \beta_2 D_{jc-1}^{>250K} + \gamma_1 C_{jt-1}^{Labor} \\ &\times D_{jc-1}^{>0} + \gamma_2 C_{jt-1}^{Labor} \times D_{jc-1}^{>250K} + \delta X_{jt-1} + \varepsilon_{jt}, \end{split}$$
(3)

where  $D_{ic-1}^{>0}$  is an indicator variable set to one if politician j supplies a positive amount of self-loans to his or her campaign and zero otherwise,  $D_{ic-1}^{>250K}$  is an indicator variable set to one if politician j supplies more than \$250,000 in self-loans to his or her campaign and zero otherwise, and the rest of the variables are as defined in Equation 2. In this specification, the coefficient  $\gamma_1$  measures the incremental sensitivity of labor voting decisions to labor contributions for politicians who supply self-loans to their campaigns compared with politicians with no self-loans. In turn, the coefficient  $\gamma_2$  measures whether that sensitivity is different for politicians who supply large self-loans to their campaigns. If BCRA had an effect on the incentives of self-funding politicians to exchange political favors in return for campaign contributions, we expect the  $\gamma_2$ coefficient to be negative in the post-BCRA period.

The results in Table 8 are consistent with this prediction. As a benchmark, column (1) focuses on the relation between labor voting and labor contributions in the pre-BCRA period. The results show a positive and significant  $\gamma_1$  coefficient and an insignificant  $\gamma_2$  coefficient, which implies that politicians who supply self-loans to their campaigns before BCRA are more sensitive in their labor voting decisions to labor contributions irrespective of the size of self-loans. The economic significance of the results for self-funding politicians is similar in the pre-BCRA period compared with the whole sample period analyzed in Table 5. Importantly, the results in column (2) that focus on the post-BCRA period show a positive and significant  $\gamma_1$  coefficient and a negative and significant  $\gamma_2$  coefficient of almost identical magnitude. These results imply that politicians with small self-loans vote similarly in the pre- and post-BCRA periods; however, voting decisions of politicians with large self-loans become significantly less correlated, in fact, completely independent of labor contributions in the post-BCRA period (as the sum of  $\alpha$ ,  $\gamma_1$  and  $\gamma_2$  is indistinguishable from zero). In addition, the difference of the  $\gamma_2$  coefficient between the pre-BCRA and post-BCRA period is statistically significant with a p-value of 0.037.<sup>21</sup>

In the last column of Table 8, we perform a placebo test by replacing politicians' self-loans with self-contributions.



Figure 3. (Color online) Distribution of Candidates' Personal Loans and Total Self-Funds to Campaigns, 1983–2018

*Notes.* This figure shows the distribution of candidates' personal loans and total self-funding to their political campaigns during the 1983–2018 period. Panel (a) presents the distribution of personal loans between \$100,000 and \$1 million for the period prior to the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (right). Panel (b) presents the distribution of candidates' total self-funding between \$100,000 and \$1 million for the period prior to the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (left) and for the period after the passage of the Bipartisan Campaign Reform Act of 2002 (right). The highlighted bar in the right graph in panel (a) shows the frequency of personal loans in the amounts between \$240,000 and \$250,000.

We are forced to estimate Equation (3) in the post-BCRA period only because there is only one politician in the pre-BCRA period with self-contributions over \$250,000. The results show no relation between the size of self-contributions and labor voting decisions, which helps alleviate a concern that there may exist a natural breakpoint at \$250,000 in the relation between politicians' self-funding and voting behavior even in the absence of BCRA.

The regressions in Table 8 are estimated using labor voting data in election years only. We do so because we want to make sure that labor contributions that we track take place only after the election cycle when selffunders decide to supply self-loans to their campaigns. Given our lagged structure of the explanatory variables, if we were to model labor votes in off election years (2005, for example), that would require us to use as explanatory variables labor contributions received in the prior election year (2004 in our example). Because BCRA states that contributions made during an election year can be used to retire campaign loans for up to 20 days after the election, estimating Equation (3) in off election years would distort the effect of BCRA on the relation between labor contributions and labor votes in the postelection period. To address a concern that the results in Table 8 may be affected by elections, we perform the following robustness test. We replace lagged labor contributions,  $C_{it-1}^{Labor}$ , in Equation (3) with contemporaneous labor contributions,  $C_{it}^{Labor}$ , and estimate the regressions using all years. The results, shown in Table C.8 in Online Appendix C, are similar to those reported in Table 8. Politicians who supply large self-loans to their campaigns are significantly more sensitive in their labor voting decisions to labor contributions in the pre-BCRA period but vote no differently from non-selffunding politicians in the post-BCRA period.<sup>22</sup>

## 5. Conclusion

In this paper, we study self-funding decisions in U.S. congressional political campaigns. We show that candidate

#### Table 8. BCRA 2002

	Candidate self-	-loan regressions	Candidate self-contributions regressions
Variable	Pre-BCRA	Post-BCRA	Post-BCRA
C <sup>Labor</sup> <sub>jt-1</sub>	0.1997**	0.0199	0.0169
$D_{jc-1}^{>0}$	(0.0976) -0.0247 (0.0256)	(0.0256) -0.0192** (0.0006)	(0.0236)
$D_{jc-1}^{>250K}$	(0.0256) $-0.1464^{*}$ (0.0850)	0.0402***	
$C^{Labor}_{jt-1} \times D^{>0}_{jc-1}$	(0.0859) 0.3582* (0.1840)	(0.0135) 0.2506** (0.0076)	
$C^{Labor}_{jt-1} \times D^{>250K}_{jc-1}$	0.3226	(0.0976) $-0.2562^{**}$ (0.1232)	
$SC^{>0}_{jc-1}$	(0.3014)	(0.1232)	-0.0261*
SC <sub>jc-1</sub> >250K			-0.0208
$C_{jt-1}^{Labor} \times SC_{jc-1}^{>0}$			(0.0256) 0.2101
$C^{Labor}_{jt-1} \times SC^{>250K}_{jc-1}$			(0.1836) 1.1362 (1.2526)
Other controls	Yes	Yes	(1.326) Yes
Politician fixed effects	Yes	Yes	Yes
State $\times$ Year fixed effects	Yes	Yes	Yes
P-value for test: $\gamma_2^{Pre} = \gamma_2^{Post}$	0.037		
Adjusted R <sup>2</sup>	0.958	0.953	0.953
N	887	2,875	2,875

Notes. This table shows coefficient estimates of the model

 $LVS_{jt} = \alpha_j + \alpha_t + \alpha C_{jt-1}^{Labor} + \beta_1 D_{jc-1}^{>0} + \beta_2 D_{jc-1}^{>250K} + \gamma_1 C_{jt-1}^{Labor} \times D_{jc-1}^{>0} + \gamma_2 C_{jt-1}^{Labor} \times D_{jc-1}^{>250K} + \delta X_{jt-1} + \varepsilon_{jt} + \delta X_{jt-1} + \delta X_{jt-1} + \varepsilon_{jt} + \delta X_{jt-1} + \delta$ 

where  $LVS_{jt}$  is the labor voting score for politician *j* in congressional session *t*;  $a_j$  and  $a_{ts}$  are politician and state × year fixed effects, respectively;  $D_{jc-1}^{>0}$  is an indicator variable set to one if politician *j* supplies a positive amount of self-loans to his or her campaign and zero otherwise;  $D_{jc-1}^{>250K}$  is an indicator variable set to one if politician *j* supplies more than \$250,000 in self-loans to his or her campaign and zero otherwise; and the rest of the variables are as defined in Equation (3). The pre-BCRA column reports the regression results for the 1999–2002 period. The post-BCRA column reports the regression results for the 1999–2002 period. The post-BCRA column reports the regression are estimated in election years only. All regressions include the full set of control variables and fixed effects. Standard errors are adjusted for heteroskedasticity and clustered by politician.

\*\*\*,\*\*, and\* designate significance at 1%, 5%, and 10% levels, respectively.

self-funding is an important source of financing of political campaigns. We also show that voting decisions of self-funding politicians differ systematically from voting decisions of other politicians. Self-funders' voting is significantly more sensitive to contributions from outside special interests that are affected by the votes but only when politicians' funds come in the form of campaign loans rather than regular self-contributions. The results are concentrated among Republican politicians and cannot be explained by time invariant politician characteristics, general time trends, or time varying local economic conditions. The results also cannot be explained by politicians' wealth, political inexperience, total future fundraising, electoral competition, or the commitment to cater to local constituent preferences. Instead, the results lend support to the lobby literature view that self-funders, self-lenders in particular, vote differently in Congress because they face financial and/or reputational pressure to sell political favors to special interests to demonstrate their fundraising skills and to retire campaign debt accumulated in prior

campaigns. We view the results in this paper as the first step in understanding whether politicians' self-funding decisions impact subsequent voting behavior. Additional work utilizing other settings is needed to fully pin down a causal link between campaign financing choices and legislative behavior. Our paper is also currently silent on the types of political favors that selffunding politicians may be exchanging with special interests. In our view, this is an important area for future research.

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### Endnotes

<sup>1</sup> See, for example, Milyo and Groseclose (1999) and Steen (2006) for an overview of the debate about the importance of self-financiers for U.S. election outcomes.

<sup>2</sup> Roberts (1982) reports that campaigns routinely hold special fundraisers, referred to as debt retirement parties, subsequent to successful elections. As one common Washington DC adage goes: "When you wake up a loser [in a political campaign], you have a deficit. When you wake up a winner, you have a deficit retirement party." In the same article, Roberts reports that close to half of all political action committees reserve some campaign funds for debt retirement, with almost all funds going to political campaign winners.

<sup>3</sup> Fowler et al. (2020) find no evidence that corporate political contributions buy political favors, contradicting the results in Akey (2015).

<sup>4</sup> The FEC allows candidates to report a description of personal contributions on Schedule A of the Itemized Receipts section of the Congressional Candidate Financial Reports. We find a nonmissing description of personal contributions for 32,897 out of 66,537 records in our reduced 2003-2018 sample period. We further restrict the analysis to only those contributions that add up to the total candidate contributions in the summary files. The total of those candidate contributions is \$221 million, of which \$47.8 million have a nonmissing description associated with it. We closely examine the descriptions of personal contributions and find that \$3.4 million of these contributions (7.12%) are restatements of candidate loans into regular contributions when candidates forgive loans to their campaigns. If we assume that this percentage applies to other personal contributions with a missing contribution description and that the results in the reduced 2003-2018 sample are representative of the whole sample period, this implies that candidate contributions are \$48 million smaller in Figure 1.

<sup>5</sup> To address a concern that the results in Table 1 are driven by small campaigns in which candidates self-fund the entire campaign, Table C.1 in the online appendix reports own-source funding frequencies for campaigns that raise at least \$50,000 in total campaign funds. The results show that over half of those campaigns rely on own-source funding and, conditional on self-funding, campaigns raise over a quarter of total funds from candidate own-source funding.

<sup>6</sup> Figure B.1 in Online Appendix B presents the time-series distribution of candidate loans and contributions. Panel A shows a slight intertemporal decline in the proportion of candidates who contribute personal loans to their campaigns from 49% to 42%. In contrast, the proportion of candidates who make self-contributions remains steady at around 40%%. Panel B shows the proportion of total campaign funds raised from candidate loans has increased over time from 25% to 37% over our sample period. The proportion of selfcontributions hovers steadily between 14% and 18%.

<sup>7</sup> Jacobson (1980) shows that newcomer campaigns rely more often on own-source funding and that this is especially pronounced in competitive congressional districts. In Table C.2 in Online Appendix C, we split our campaign sample by the percentage of the presidential democratic vote received in the prior election in each congressional district and report the frequencies and the percentages of own-source funding in close and landslide districts. The results do not corroborate the finding in Jacobson (1980). There is some evidence that all campaigns rely more on own-source funding in close contests (specifically, in districts where the previous presidential democratic vote share is in the 55%–60% range); however, this is not true for challenger and open-race campaigns.

<sup>8</sup> Table 2 shows negative average self-contributions and self-loans for campaigns with no candidate self-contributions and self-loans. The negative figures reflect the fact that nine (three) campaigns report candidate self-loan and self-contribution refunds in the early days of the campaign for candidate self-loans and self-contributions made in the last few days of the prior campaign.

<sup>9</sup> We measure politicians' ideologies using the common-space campaign finance scores (CF scores) approach described in Bonica (2014). Negative (positive) CF values correspond to liberal (conservative) candidate positions. We employ CF scores to measure candidate ideology because, unlike the Poole and Rosenthal (1985, 1991) NOMINATE scores, which can be computed for successful candidates only, the CF scores can be computed for successful and unsuccessful congressional candidates.

<sup>10</sup> Note that this specification suffers from a potential look-ahead bias in the sense that, when candidates are making decisions about self-funding, they may not know whether their peers will self-fund or not. We thank the referee for pointing out this issue.

<sup>11</sup> One explanation for this result is that PACs strategically withhold financial support for nonincumbent politicians, instead creating incentives for nonincumbents to lend money to their campaigns by promising future support in case of a win. Roberts (1982) provides a useful account of such practice.

<sup>12</sup> There is a growing political science literature showing that the ability of a candidate to outraise and outspend his or her opponents, especially late in the campaign cycle, helps explain election outcomes, such as vote shares and voter turnout (see, e.g., Shaw (1999) and Johnson et al. (2004) for the analysis of presidential contexts; see Sides et al. (2021) for a recent analysis of down-ballot context; see Jacobson (2015) for a literature review).

<sup>13</sup> Consistent with prior literature (see, e.g., Steen 2006), we find that politicians front-load self-funding. Self-financiers contribute 23% (20%) of all self-contributions (self-loans) in the first quarter of their campaigns compared with incurring only 10% of all campaign expenditures during the same period. By contrast, self-financiers outspend self-funding totals in the last quarter of the campaign by an almost identical margin.

<sup>14</sup> Figure B.2 in the online appendix presents the distribution of candidate loan repayments by election month in subsequent election cycles. The figure also presents the distribution of PAC contributions by election month. The results show that candidate loan repayments are higher in the election year, especially during the spring and early summer months. The timing of candidate loan repayments coincides with a significant increase in average PAC donations during the same months. These results suggest that campaigns use early PAC contributions to repay candidate loans.

<sup>15</sup> For example, the Gary Johnson 2012 campaign successfully retired \$750,000 in candidate loans by selling five copies of its voter lists to other campaigns for \$150,000 each.

<sup>16</sup> There is anecdotal evidence that politicians use labor contributions to retire existing campaign debt. For example, Alfred Lawson Jr. (D) entered Congress with \$76,000 in personal loans from the 2016 campaign. During the next election cycle, Representative Lawson's campaign repaid \$72,000 in candidate loans while receiving \$70,000 in labor contributions. Similarly, Grace Meng (D) started her career in Congress in 2013 with \$95,000 in personal loans from the 2012 campaign. During the next election cycle, Representative Meng's campaign repaid the entire \$95,000 in candidate loans while receiving \$96,100 in labor contributions.

<sup>17</sup> We also performed external validity checks by analyzing the relation between U.S. Chamber of Commerce votes and contributions from corporate, labor, and trade special interests. The results show that self-funding politicians, in particular those who supply self-loans to their campaigns, are more sensitive to labor and trade contributions in their Chamber of Commerce voting decisions compared with other politicians. Consistent with prior evidence, we find little relation between corporate contributions and votes tracked by the Chamber of Commerce.

<sup>18</sup> In unreported results, we find that the results for Republicans are concentrated among Republicans with high labor voting scores who are presumably more likely to switch their votes in response to pressure from labor special interests. These Republicans also receive the bulk of the labor contributions in our sample.

<sup>19</sup> BCRA stated, and the January 30, 2009 FEC advisory opinion 2008-22 further reaffirmed, that candidate loans in excess of \$250,000 made *prior* to BCRA are not subject to the provisions of the law, so self-funding politicians who made large loans prior to 2002 may continue to raise postelection contributions from special interest groups to retire old personal campaign debt.

<sup>20</sup> To determine the statistical significance for the post-BCRA results, we employ a methodology similar to the bunching methodology developed by Kleven and Waseem (2013), summarized in Kleven (2016), and used in Babenko et al. (2019). Specifically, we use the empirical distribution of self-loans in the pre-BCRA period as the counterfactual distribution to randomly draw 1,000 distributions of self-loans for the post-BCRA period and record the frequency of self-loans at the \$250,000 threshold. We then compute the number of times the frequency of self-loans at the \$250,000 threshold exceeds the frequency observed in the actual post-BCRA data. The corresponding p-value is zero, that is, there are no simulations that produce a higher frequency observed in the actual post-BCRA data.

<sup>21</sup> The post-BCRA voting results for politicians with large self-loans may reflect the fact that the \$250,000 loan repayment threshold imposed by BCRA represents only a very small portion of these politicians' wealth (\$24.5 million on average). The relatively small financial or reputational benefits of repaying \$250,000 in personal loans may be considerably less than the cost of losing voter support if wealthy politicians take antilabor positions, so wealthy politicians may side with labor regardless of labor contributions. Consistent with this, we find that politicians with large self-loans in the post-BCRA period have higher unconditional labor voting scores (43.7%) compared with politicians with large self-loans in the pre-BCRA period (37.5%).

<sup>22</sup> Our BCRA results raise a potential concern that it is no longer relevant to consider self-funding choices for legislative behavior because BCRA eliminated the incentive of self-lending politicians to sell political favors to special interests. However, we show above that the law had no impact on candidate self-loans less than \$250,000 (which comprise the majority of self-loans). Moreover, the BCRA's provision that allows campaigns to use existing cash on hand to retire large candidate loans shortly after election created an incentive for self-lending politicians to exchange *promises* of future votes for pre-election contributions from special interests.

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