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# Interdependent Preferences for Financing and Providing Public Goods—The Case of National Defense

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## ABSTRACT

Governments often choose deficit financing over budget cuts or tax increases to fund public goods, driven by the political unpopularity of the latter options. This study investigates the potential trade-off between maintaining prudent public finances and securing voter support by analyzing the relationship between preferences for the provision and financing of public goods. We use a survey-based discrete choice experiment with 1808 respondents representative of the German population. Focusing on national defense as a case study, our findings reveal a strong interdependence between spending and financing preferences: individuals who highly value defense readiness and are aware of its costs tend to support deficit-neutral budgeting, favoring tax increases to finance budget expansions. Conversely, those less supportive of defense expenditure prefer debt issuance and budget consolidation, avoiding immediate cost-bearing. Additionally, preferences vary by political and sociodemographic characteristics. These results indicate that citizens' preferences are interdependent, influenced by both revenues and expenditures in the public budget. Moreover, they suggest that prudent fiscal policies aligned with public support—such as tax-based financing for defense—may be politically feasible. Policymakers can leverage these insights to design fiscal strategies that reflect voter priorities, thereby reducing the risk of electoral backlash and promoting sustainable public finances.

**JEL Classification:** H41, H60, H56, C90

## 1 | Introduction

Governments often grapple with how to finance public goods, frequently opting for deficit financing over budgetary cuts or tax increases due to the latter's political unpopularity. Such budget decisions not only impact public finances and shape economic trajectories but also must align with voter preferences in democratic systems. Jean-Claude Juncker, former President of the European Commission, captured this dilemma with his remark: “*We all know what to do, but we don't know how to get re-elected once we have done it.*” The method of financing public expenditures can influence public support, not necessarily based on the goods or services themselves

but on the financing approach and its welfare implications. Policymakers benefit from understanding public support as it affects acceptance of the financial costs involved. This dynamic is crucial, especially during crises that require immediate government spending. For instance, the Russian aggression against Ukraine underscores the need for increased defense spending in Europe, and many governments are increasing military expenditures (Stoltenberg 2023). However, as quite a few European countries have underinvested in military capabilities and have reaped the benefits of a “peace dividend” since the end of the Cold War, aiming for the so-called NATO 2% target may not suffice to achieve adequate defense readiness (Dorn 2024). Given surveys indicating that defense

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policy enjoys broad public support at the moment, why do politicians hesitate to take a more ambitious spending approach? Mader et al. (2024) argue that support for such defense initiatives seems to systematically decrease when the associated costs become evident, for example by tax increases. This might explain (among other factors) why the German government responded to the geopolitical shift by allocating €100bn to defense through extraordinary debt issuance (German Government 2022). By deferring budget consolidations or tax hikes to future administrations, the government made the increase almost imperceptible to voters. On the other hand, in the spirit of Ricardian equivalence, there may be voters who are well aware of the future fiscal burden of today's debt and are skeptical about increasing military spending because of the financing method.

These considerations emphasize the necessity for a more comprehensive understanding of the interplay between the provision and financing of public goods. Our paper is the first to explore this relationship by examining political preferences on provision and financing in the context of German national defense as a case study.<sup>1</sup> Specifically, we address two inter-related research questions. First, is there a trade-off between sustaining prudent public finances and achieving voter support? Second, how should a government finance the provision of a public good in light of public support? To answer these research questions, we employ a novel approach by analyzing data from a survey-based discrete choice experiment (DCE) conducted on a representative sample of the German population. We elicit spending preferences concerning the provision of public goods, specifically the spending level on national defense, by utilizing a specific survey question (hereafter referred to as the “spending question”) and a DCE. To elicit financing preferences on defense, we draw on two survey questions: one concerning the balance between taxes and debt (hereafter referred to as “revenue financing question”) and another exploring the option of budget consolidation—specifically, the equivalent reduction of expenditures in other budget areas—as an alternative to expanding the budget to finance additional defense policies (hereafter referred to as “budget financing question”). By examining the interaction between elicited provision (i.e., spending) and financing preferences, we investigate both what individuals are willing to support and how they are willing to contribute to the provision of national defense.

Our analysis reveals that preferences for the provision of public goods and preferences for financing these goods are interdependent. Individuals who highly value defense and are informed about associated costs tend to favor deficit-neutral budgeting with tax hikes financing the budget extension. Conversely, those who do not support a spending policy tend to be unwilling to bear any directly related tax costs. Instead, they prefer debt issuance and budget consolidation. In fact, estimates of average willingness to pay (WTP) for two defense policy programs reveal notable differences. Only a quarter of respondents favor debt financing (23%), and this group demonstrates the lowest approval rates, as indicated by their low WTP of €24 for a national strategy (a 25% increase in national troop size and the implementation of a national air defense system) and €34

for a European approach (the creation of a European army and a European air defense system). In contrast, participants who support a mixed financing approach (54%) exhibit higher WTPs of €241 and €230, whereas those 23% who favor tax financing would accept an additional individual tax burden of €344 and €427, respectively. These results emphasize that preferences for revenue financing policies depend on the underlying expenditures. With respect to budget financing preferences, we find that while respondents on average support increased public defense spending, 86% favor some consolidation of other public expenditures. Almost two-thirds of those oppose any expansion of the federal budget. To gain a deeper understanding of the observed preferences, we examine potential determinants for spending and financing preferences. For example, revenue financing preferences vary with age. Individuals over 50 tend to support debt issuance, whereas younger people prefer taxation, potentially due to differing views on how government debt affects consumption across generations. The 60- to 69-year-olds are 12 percentage points more likely to support debt issuance and nine percentage points less likely to support taxation relative to the 18- to 29-year-olds. Women are generally less supportive of defense spending and associated tax increases, exhibiting a six percentage point lower support for taxation and equivalently higher support for debt issuance compared to men. Political and ideological differences and inflation concerns also influence preferences. For example, individuals worried about inflation show less support for increased government spending and prefer debt issuance rather than tax increases. Additionally, those concerned about job security and unemployment favor higher military spending, aligning with the notion of “guns yielding butter” (Williams 2019) according to which military spending can complement social spending as a job creation policy.

Our insights into the interdependency between preferences for the provision and financing of public goods contribute to the debate on whether citizens favor a fiscally prudent or fiscally excessive policy stance (Hansen 1998). The former favor fiscal conservatism. They support balanced budgets and budget consolidations, advocate for sustainable finances (e.g., Bansak, Bechtel, and Margalit 2021; Alesina, Favero, and Giavazzi 2019; Arias and Stasavage 2019), and internalize projections of the financial impact of different financing policies on their net income (Hennighausen and Heinemann 2015). In contrast, the latter oppose spending cuts as well as tax increases, punish policymakers' attempts at fiscal consolidation, and rather prefer debt issuance to finance government expenditures (e.g., Bremer and Bürgisser 2023b; Fetzer 2019). Our findings reveal that this conventional binary classification of citizens as either fiscally conservative or excessive misses a key nuance in public finance attitudes. This simplistic approach tends to highlight only one aspect of public budgets—typically focusing on individuals' preference for higher or lower spending—while ignoring a vital interdependence: citizens' fiscal preferences are shaped by both their views on spending and their perspectives on revenue generation. Consequently, a citizen's support for fiscal policies often depends on a mix of factors, such as their stance on taxation, debt, budget allocations, and the efficient use of resources. Therefore, understanding fiscal preferences necessitates a more holistic approach that considers both spending and financing.

Our paper challenges the conventional dichotomy, advocating for a more nuanced analysis to fully capture the diverse public attitudes toward fiscal policy.

Beyond its substantive insights, our paper also makes a methodological contribution. Mader et al.'s (2024) observation that defense policy support wanes as costs become clearer mirrors earlier studies that reveal inconsistencies when spending and financing are viewed separately. The “more for less paradox” (Welch 1985) captures a preference for higher spending with lower taxes, whereas the “something for nothing syndrome” (Edlund and Johansson Sevä 2013) highlights the gap between desires and WTP. To address this, recent studies use designs requiring participants to consider both sides, enforcing trade-offs to prioritize preferences (e.g., Bremer and Bürgisser 2023a, 2023b; Barnes, Blumenau, and Lauderdale 2022; Bonica 2015). However, these vary in informational content, often relying on qualitative scales that complicate translating preferences into valuations. Our novel use of a DCE presents an alternative, as respondents are presented with benefits and corresponding individual costs (framed as individual tax burden) of potential defense policy measures, which, if implemented, would alter the level of security and defense readiness. The resulting experimentally varied, multidimensional trade-offs necessitate cost-benefit analysis, as respondents must weigh privately incurred benefits and costs of public spending, considering their private budget constraints and preferences. The preferences revealed are translated into WTP estimates, serving as an informative proxy for voter support of certain policy measures at specific costs.

The remainder of the paper is organized as follows: Section 2 reviews related literature on fiscal policy preferences. Section 3 introduces the dataset and describes the variables of interest and the experimental design. It subsequently presents our empirical analysis, which links spending and financing preferences, and provides our main insights. In this section, we also assess heterogeneity in preferences to examine possible determinants of previously explored patterns in choice behavior. Section 4 tests the validity and robustness of our results. Section 5 concludes with final remarks.

## 2 | Related Literature

Our paper relates to the literature on fiscal policy preferences, positioned at the intersection of applied public finance and political science, in general, and the literature on demand for defense as a public good in particular. This literature acknowledges that even with a benevolent government, political representatives might make choices that differ from the electorate's desires due to factors like insufficient preference information, irregular elections, and ambiguous electoral signals (Jottier, Ashworth, and Heyndels 2012). Thus, this literature is both descriptive of preferences and normative in discussing policy design in line with public approval, as policy success hinges on popularity. Hereinafter, we highlight the current incongruence in findings regarding citizens' preferred fiscal stance and review some recent developments in research designs.

In the wake of the European debt crisis, which highlighted the need for budgetary reforms (Alesina, Favero, and Giavazzi 2019),

a significant empirical literature has emerged on citizens' fiscal preferences, considering factors like taxation (Hennighausen and Heinemann 2015), public deficits (Stix 2013; Heinemann and Hennighausen 2012), and fiscal austerity and its political effects (Hübscher, Sattler, and Truchlewski 2023; Hayo and Neumeier 2017). Bremer and Bürgisser (2023b) find that fiscal consolidation, through spending cuts or tax hikes, is less popular than expected, especially revenue-based consolidation (see also Hayo and Neumeier 2019). In contrast, Arias and Stasavage (2019) find no political costs associated with fiscal austerity. Bansak, Bechtel, and Margalit (2021) and Alesina, Favero, and Giavazzi (2019) note that fiscal austerity often has public support. Similarly, Buchs and Soguel (2022) show that Swiss finance ministers benefit electorally from balanced budgets and surpluses. The literature remains divided on whether citizens favor fiscal conservatism, supporting balanced budgets and sustainable finances, or whether they oppose spending cuts and tax increases, penalize governments for fiscal consolidation, and prefer stimulus through debt issuance. We contribute to this body of literature by examining the demand for additional provision of a public good and preferences regarding how it should be financed. This enables us to explore variations in financing preferences with respect to spending preferences, offering insights into the potential trade-off between prudent public finances and political support.

The limited revelation of preferences through the electoral process for fiscal policymaking entails the long-standing search for an appropriate research design to directly assess preference structures. This includes a tradition of public opinion and electoral choice studies exploring preferences for particular public goods and how these vary and influence voting decisions based on standard survey questions. For instance, Williams (2015) presents evidence suggesting that preferences for defense spending are linked to voting behavior, coining the term “defense spending vote.” However, given the inconsistencies in respondents' choice behavior mentioned earlier, recent literature now employs research designs that require participants to consider both revenue and expenditure policies. One line of research examines how participants allocate a fixed budget across general categories, prompting responses that account for trade-offs (Bonica 2015). This requires participants to maximize budget benefits while considering the opportunity costs of different allocations. Using this method, Bremer and Bürgisser (2023a) find that recalibrating the welfare state involves complex trade-offs, as different population segments prioritize different social policies. However, concerns exist about the cognitive demands of such tasks on respondents (Barnes, Blumenau, and Lauderdale 2022), which is why we do not consider a full budget allocation task but instead examine preferences for a specific public good and budget category. Subsequent studies challenge respondents to decide not only on budget composition but also on its size (Bremer and Bürgisser 2023b; Hübscher, Sattler, and Truchlewski 2023; Bansak, Bechtel, and Margalit 2021; Hayo and Neumeier 2019). Adjusting the budget size requires balancing resource allocation between private and public use, with public spending's opportunity cost being the private benefits lost. For instance, Barnes, Blumenau, and Lauderdale (2022) conduct a budget experiment, where participants compare current public spending with deficit-neutral bundles of tax

and spending changes. They find that UK respondents favor tax-financed spending increases in various areas. Our study aligns with these findings. Instead of a fixed budget, we present respondents with tax implications for additional public spending, encouraging them to consider their private budget constraints. This method enforces trade-offs between public and private expenditures and allows for a flexible government budget. By highlighting the tax impact of new spending programs, our approach also addresses fiscal illusion concerns, where citizens support spending but underestimate fiscal costs (e.g., Murtinu, Piccirilli, and Sacchi 2022).

However, research designs enforcing trade-offs differ in their revealed informational content. For example, studies by Bremer and Bürgisser (2023a, 2023b) and Hayo and Neumeier (2019) present respondents with fiscal proposals involving qualitative changes in taxes, debt, and spending (e.g., “small” or “large”). These designs provide insights but often rely on arbitrary scales and may not balance budgets arithmetically, as noted by Barnes, Blumenau, and Lauderdale (2022) and Hayo and Neumeier (2019). To address this, Barnes, Blumenau, and Lauderdale (2022) offer a budget allocation task that translates preferred deficit-neutral changes into arithmetic terms. Bremer and Bürgisser (2023b) and Hayo and Neumeier (2019) allow also for debt issuance as a funding option, which better mirrors real policymaking. Experimentally varying financing policies, as Bremer and Bürgisser (2023b) do, enhance understanding of how approval rates for spending react to funding methods. However, these designs do not always require respondents to weigh both benefits and costs, complicating WTP estimation—a crucial metric reflecting priorities and financial commitment to public goods. Moreover, studies generally focus on financial inputs to overall budgets rather than specific policy outcomes. We extend these developments with a different approach: combining a DCE that enforces trade-offs with survey questions about financing preferences. This method allows us to gauge preferences for additional public spending policies and derive WTP estimates for them while also taking financing preferences into account.

By selecting national defense for a public good, we also contribute to the extensive field of defense economics, particularly in understanding the demand for defense. Theoretical approaches offer somewhat limited insights. Since the Samuelson condition (Samuelson 1954), they have relied on cost-benefit analyses (see Kreiner and Verdellin 2012 for an overview), where military budget spending often acts as a proxy for defense costs. In contrast, gauging the benefits of defense expenditures as a public good is challenging, given that armaments and soldiers lack direct productive use. As a result, much of the literature has redirected attention toward evaluating defense spending's influence on overall economic performance. This includes examining the impact on a nation's economic growth due to military spending (Alptekin and Levine 2012), the effects of military occupation (Vishwasrao, Schneider, and Chiang 2019), potential technological spillovers from military to civilian sectors (Sutherland 2014), or the consequences of (reintroducing) obligatory military service (Puhani and Sterrenberg 2022). However, this perspective overlooks the direct impact that enhanced national security and defense readiness can have on the population's welfare by

providing protection against military threats, as well as its significance in contributing to each individual's utility function. Thus, it would be desirable to assess how individuals value this public good through a Hicksian welfare measure. Since national defense is a nonmarket public good, its benefits can be directly evaluated through stated preference methods—a technique utilized by only a few studies in this field. On the one hand, it is a study by Throsby and Withers (2001) who analyze Australian survey data from 1992 to assess how consumer preferences impact military spending. They employed a contingent valuation survey to gauge community preferences across 16 public expenditures, including national defense, discovering that Australian military expenditure exceeded community desires by about 20%. On the other hand, it is a study by Qari et al. (2024). They utilize a DCE explicitly crafted to estimate WTPs for various defense alternatives and find a strong preference for boosting security and defense spending. Respondents show diverse views on various measures, with significant support for air defense systems, a European army, and a 25% increase in national armed forces. Conversely, the (re)introduction of comprehensive conscription is associated with utility losses. Qari et al.'s (2024) approach offers a promising direction for future research on security policy preferences, which is why we base our novel analysis on the interdependence of spending and financing of defense on their data.

### 3 | Empirical Analysis

#### 3.1 | Overview

In this section, we introduce the dataset, outline the key variables of interest, and the experimental design. Subsequently, we present our empirical analysis and findings. The survey was conducted online with 1808 participants in early 2023 and is representative of the German population with respect to age, gender, and geographical distribution. Preferences were elicited using a DCE, complemented by a questionnaire that included three key variables of interest. This includes a question about support for strengthening defense readiness regardless of personal financial costs (the spending question).<sup>2</sup> The spending question allows to disentangle preferences for additional national defense from considerations about one's individual budget constraint. We find that about 23% and 25% tend to or completely oppose strengthening defense readiness, respectively, whereas 28% are divided, and 17% and 7.4% tend to or completely approve additional spending, respectively. To link defense spending preferences, elicited through the spending question and the DCE, with revenue financing and budget financing preferences, the survey includes two separate questions. Firstly, participants were asked whether they favor a debt or a mixed (half-tax and half-debt) financed provision of the public good instead of a purely tax-financed provision (the revenue financing question).<sup>3</sup> Approximately 23% of respondents support debt issuance, 23% tax financing, and 54% an equal mix. Secondly, participants were surveyed about their support for the provision of the public good through budget consolidation, a budget increase, or a mixture of both (the budget financing question).<sup>4</sup> Around 54% of respondents favor consolidation, 14% increasing the budget and 32% a mix.<sup>5</sup>

**TABLE 1** | Descriptive statistics.

Variable	N= 1808 <sup>a</sup>		
Defense spending		CDU/CSU	362 (20%)
Completely oppose	446 (25%)	Leftists	108 (6.0%)
Rather oppose	417 (23%)	FDP	133 (7.4%)
Partly/partly	504 (28%)	SPD	270 (15%)
Rather support	307 (17%)	Other	157 (8.7%)
Completely support	134 (7.4%)		
Revenue financing		Inflation	
Debt	412 (23%)	Not threatened at all	20 (1.1%)
Mix	982 (54%)	Rather not threatened	99 (5.5%)
Tax	414 (23%)	Partly/partly	362 (20%)
Budget financing		Rather threatened	621 (34%)
Consolidation	971 (54%)	Highly threatened	706 (39%)
Mix	582 (32%)		
Extension	255 (14%)	Job security	
Sex		Not threatened at all	464 (26%)
Male	902 (50%)	Rather not threatened	510 (28%)
Female	906 (50%)	Partly/partly	414 (23%)
Ability-to-pay		Rather threatened	281 (16%)
Completely unable	447 (25%)	Highly threatened	139 (7.7%)
Rather unable	371 (21%)		
Partly/partly	543 (30%)	East	
Somewhat able	307 (17%)	West	1502 (83%)
Completely able	140 (7.7%)	East	306 (17%)
Household income (€) 2995 2800 (1606)			
Pol. orientation		Household size	
1 Completely left	29 (1.6%)	1	483 (27%)
2	166 (9.2%)	2	653 (36%)
3	392 (22%)	3	341 (19%)
4	829 (46%)	4	239 (13%)
5	302 (17%)	> 4	92 (5.1%)
6	51 (2.8%)		
7 Completely right	39 (2.2%)	Employment status	
Partisanship		Not employed	537 (30%)
None	262 (14%)	Employed	1271 (70%)
AfD	197 (11%)		
Greens	319 (18%)	Relationship status	
		Single	737 (41%)
		With partner	1071 (59%)
		Education	
		No university degree	1258 (70%)
		University degree	550 (30%)
		Age	
		45.38 45.00 (15.12)	

*Note:* The table presents descriptive statistics of the sample. “Defense spending” relates to the defense spending question. “Revenue financing” and “Budget financing” relate to revenue financing and budget financing preferences, respectively. Affiliation to political parties includes the Christian Democratic Union (CDU, center right), the Social Democratic Party (SPD, center left), the Free Democratic Party (FDP, liberals), the Greens (Grüne), and the Leftist Party (Linke). The reference category for partisanship used throughout the paper consists of individuals who are not affiliated with a political party.

<sup>a</sup>Categorical variables: *n* (%); continuous variables: mean median (SD).

Table 1 summarizes these and additional descriptive statistics to contextualize the subsequent analysis. For instance, 46% of respondents indicate that they would have difficulties financially contributing to additional public spending. To put this in perspective, the mean monthly household after-tax income in the sample stands at around €3000, with 30% of participants not actively employed.

To address our central research questions—whether a trade-off exists between maintaining prudent public finances and securing voter support, and how a government ought to finance a public good in light of public support—we establish an analytical link between elicited spending, financing, and budgeting preferences. To this end, we analyze the determinants of the spending question using a linear regression model in Section 3.2. This model tests the hypothesis of dependence between support for provision (i.e., spending) and financing policies using the collected survey questions and additionally analyzes socioeconomic and political heterogeneity of defense spending preferences. Section 3.3 delves deeper into our research questions by employing the DCE framework utilizing mixed logit models (MXLs) in WTP space. Section 3.3.1 introduces the DCE in detail, and Section 3.3.2 presents our econometric approach and findings. The DCE focuses specifically on the underlying preferences for public good provision, acknowledging that various configurations of such goods may lead to increases in public expenditure. Moreover, it elicits constrained economic preferences by making the budget constraint explicit. Our final estimates provide evidence on valuations and approval rates for two defense policy packages across different financing and budgeting preferences. By examining these configured packages, instead of general changes to the defense budget, it becomes possible to analyze how voter support for distinct public good provision and financing policies are interdependent, providing deeper insights into the determinants of the fiscal stance. Finally, Section 3.4 explores heterogeneity in financing preferences using an ordered logit model (OLM), thereby exploring potential mechanisms determining decision-making. This serves as a foundation for understanding the previously explored choice patterns.

### 3.2 | Linking Spending and Financing Preferences for National Defense

To interact preferences, we regress our spending question as a dependent variable (coded as a continuous variable on a five-point scale) in a multiple linear regression on the two financing policy dimensions, that is, *taxation* and *tax-debt mix* (both coded as dummy variables) and debt (the reference category) and *budget increase* versus consolidation (coded as a continuous variable on a five-point scale). Furthermore, we control for income, employment status, marital status, education, age, household size, and place of residence in East or West Germany. We present four different model specifications, successively expanding specification I—our base model that incorporates the above-mentioned right-hand-side variables. Specification II modifies the model by accounting for gender differences (*female*), given that previous studies identify gender as a significant predictor for defense spending support (e.g., Eichenberg 2019) and that women's political empowerment is

associated with reduced military spending (Keneck-Massil, Nkariépoun-Njoya, and Nomo-Beyala 2024). We also add self-reported *ability-to-pay* (ABT), arguing that an important moderator for the willingness and ability to contribute to fiscal policies is the net financial situation of an individual, that is, income after relevant expenditures.<sup>6</sup> Specification III extends the political and ideological dimensions of the model by incorporating *political orientation* from left (1) to right (7), measured on a seven-point scale, as well as respondents' political party vote choice, or *partisanship*. Finally, to capture respondents' macroeconomic considerations, specification IV incorporates a variable that measures concerns about *inflation* on a five-point scale. This variable is of interest due to the role of inflation perceptions and expectations in economic theory and their relation to fiscal policy.<sup>7</sup> Additionally, given Williams (2019) findings that people's views on defense spending vary as either conflicting with or complementary to social expenditure, depending on whether it is seen as a job creation policy, this specification also includes worries about *job security* and unemployment.

Table 2 presents the estimation results. We identify significant heterogeneity across preferences, revealing interdependence between the provision and financing preferences of public goods. Specifically, after controlling for relevant covariates, the analysis reveals that individuals endorsing greater defense readiness are more inclined to support (partial) taxation as a financing mechanism. Moreover, those preferring increased spending also support extensions in federal budgets instead of consolidations. These findings offer evidence that preferences for the provision and methods of financing public goods are interdependent.

In line with previous studies (Keneck-Massil, Nkariépoun-Njoya, and Nomo-Beyala 2024; Eichenberg 2019), female participants are less supportive of increases in defense provision. The estimates confirm that ABT is a significant positive predictor of support for additional government spending. We observe that the left-right gradient in support for defense spending is relevant, as politically right-leaning respondents tend to support more defense spending compared to left-leaning individuals. Thus, although right-leaning individuals generally tend to favor a smaller government, in the case of security provision, our findings suggest that this relationship is reversed (Bansak, Bechtel, and Margalit 2021). In terms of partisan alignment, respondents intending to vote for one of the major centrist parties (CDU/CSU, FDP, Greens, and SPD), as well as for the Leftist party, exhibit a greater propensity to support heightened defense readiness compared to nonvoters (e.g., Lohse et al. 2023). We find that inflation worries are a relevant predictor of support for national defense provision. In particular, increased concerns about inflation are associated with decreased support for additional defense spending. Finally, in line with Williams' (2019) findings, respondents worried about job security and unemployment tend to prefer more public spending on defense.

### 3.3 | Experimental Evidence of Voter Approval for Defense Spending

Next, we turn in this subsection to the DCE. First, we explain the experimental setup, and second, we discuss the link between

**TABLE 2** | Support for strengthening of Germany's defense readiness.

Defense spending preferences	I	III	IV	V
Constant	1.36 (0.16)***	1.57 (0.17)***	1.07 (0.22)***	0.92 (0.27)***
Tax–debt mix	0.75 (0.07)***	0.62 (0.07)***	0.56 (0.07)***	0.56 (0.07)***
Taxation	0.99 (0.09)***	0.83 (0.09)***	0.78 (0.09)***	0.75 (0.09)***
Budget increase	0.13 (0.03)***	0.08 (0.03)***	0.08 (0.03)***	0.07 (0.03)**
Female		−0.26 (0.06)***	−0.23 (0.06)***	−0.22 (0.05)***
Ability-to-pay				
Rather unable		0.32 (0.09)***	0.32 (0.09)***	0.32 (0.09)***
Partly/partly		0.43 (0.08)***	0.41 (0.08)***	0.40 (0.08)***
Somewhat able		0.53 (0.10)***	0.51 (0.10)***	0.55 (0.10)***
Completely able		0.44 (0.14)***	0.42 (0.14)***	0.46 (0.14)***
Pol. orientation			0.11 (0.03)***	0.11 (0.03)***
Partisanship				
AFD			−0.01 (0.11)	−0.02 (0.11)
CDU/CSU			0.52 (0.09)***	0.53 (0.09)***
FDP			0.18 (0.12)	0.20 (0.12)*
Greens			0.29 (0.09)***	0.29 (0.09)***
Leftists			0.29 (0.14)**	0.28 (0.13)**
SPD			0.45 (0.10)***	0.44 (0.10)***
Other			−0.04 (0.11)	−0.04 (0.11)
Inflation				−0.07 (0.03)**
Job security				0.15 (0.02)***
Controls	Yes	Yes	Yes	Yes
N	1808	1808	1808	1808

Note: \* $p < 0.1$ , \*\* $p < 0.05$ , and \*\*\* $p < 0.01$ . Multiple linear regression results. Dependent variable measured on a five-point scale: “To what extent do you agree or disagree with the following statement? I would support any strengthening of Germany's defense readiness, no matter the costs?” (5 = completely agree to 1 = completely disagree). Controls include income, employment status, marital status, education, age, household size, and place of residence in East or West Germany. The reference category ability-to-pay consists of “completely unable.” Affiliation to political parties included are the Christian Democratic Union (CDU, center right), the Social Democratic Party (SPD, center left), the Free Democratic Party (FDP, liberals), the Greens (Grüne), and the Leftist Party (Linke). The reference category for partisanship consists of individuals who are not affiliated with a political party. Robust standard errors are in parentheses.

financing preferences and WTP.<sup>8</sup> As noted above, we leverage the dataset by Qari et al. (2024).

### 3.3.1 | Experimental Setup

The DCE elicits the respondents' preferences concerning different types of public goods, in this case, defense policy, by experimentally composing policy packages and asking the respondents to select the preferred policy package. The creation of policy packages requires the identification of specific policy measures that affect national defense. Measures suitable to be employed in the DCE should be publicly discussed by experts and politicians and therefore well known by the population. Implications for domestic policy and the resulting individual costs and benefits increase the probability that respondents are concerned about the topic. Thus, rather than focusing solely on financial inputs allocated to a general defense budget,

measures should emphasize tangible outputs—namely, military capabilities and defense readiness—thereby also avoiding debates about resource use and cost efficiency of provision (Liff 2016). An experimental design that explicitly defines policy outcomes communicates potential strategies more clearly, thereby eliciting more accurate and nuanced policy preferences from respondents. Finally, the measures should be on an aggregate level such that a single policy measure captures a certain policy strategy rather than a microlevel decision such as the number of tanks. These criteria make it more feasible for respondents to meaningfully compare and evaluate policy alternatives.

By applying these criteria, four widely debated policy measures were identified and used as choice attributes in the experiment (see Table S1).<sup>9</sup> The first attribute is the troop size of the German armed forces which is an obvious relevant input for national defense. Possible levels of this attribute are to keep

the status quo (“no change”), increasing the size of armed forces by a quarter or an increase of 50%. A binary variable indicating whether or not a common European army should be established represents the second attribute. Proposals for establishing a European pillar for defense in addition to NATO have been discussed for several years and this could be achieved by reorganizing parts of the existing national armies into a joint European army. The third widely discussed attribute is the reintroduction of military service, potentially as part of compulsory general social service. In Germany, compulsory military service (and social service) was suspended in 2011 and since then de facto repealed. A main implication of military service that applies to large parts of the population is the creation of a reserve force that is able to complement the regular forces in the event of war. The fourth attribute comprises the installation of an air defense system that is able to protect against rocket and missile attacks. Again, this attribute was widely discussed, and it is certainly a relevant potential factor to increase national defense, since the focus of the traditional existing air defense has been on incoming aircraft and not on incoming missiles. Possible levels of this attribute are the status quo (no additional air defense), a system that primarily targets the German airspace, and finally, a system to cover the European airspace. The fifth attribute pertains to the cost borne by each household, represented as an increase in the overall taxation level. It is expressed in a range of absolute values to ensure that this method of payment is perceived as both plausible and binding (Johnston et al. 2017). Thus, any increase in public provision would be offset by taxes, imposing a visible opportunity cost. By presenting all participants with a choice among policy proposals that carry a tax burden, our experiment conditions individuals on the understanding that others must also contribute to the public good.

The described choice attributes were used to generate hypothetical policy packages (different hypothetical variants of the public good “national defense”). The choice task for each respondent is to choose between three alternatives: two alternatives drawn from the pool of hypothetical policy packages and another representing the status quo (*no change—no additional cost*). Each respondent encountered a series of eight randomly selected choice tasks (see Figure S1 for an example choice task). The experimental variation of the policy packages including a cost parameter allows to econometrically estimate the WTP for different policy scenarios versus the status quo, for example, the amount of additional charges per household that respondents are willing to spend if Germany would, for instance, increase the armed forces by 25% and would install an air defense system covering Germany.

### 3.3.2 | Econometric Approach and Results

In order to analyze the interaction between the WTP for different defense policies and financing preferences, we first create six subsamples according to the above-mentioned preferred forms of financing (three subsamples along the revenue financing preferences and three additional subsamples with respect to budget financing preferences).<sup>10</sup> Hence, each respondent is positioned in two subsamples. Second, we estimate for each subsample an MXL in WTP space (Train and Weeks 2005). MXLs extend the

multinomial logit model (Revelt and Train 1998), which assumes that respondent  $i$  derives the following utility from choosing alternative  $j$  in choice situation  $t$ , modeled as follows:

$$U(x_{ijt}) = x_{ijt}\beta + \epsilon_{ijt}$$

where  $x_{ijt}$  denotes the row vector describing the attribute levels of this alternative and  $\beta$  is a column vector of parameters to be estimated. Assuming that the choices of respondent  $i$  reflect utility maximization and further that the error term  $\epsilon$  follows an iid Type I Extreme Value distribution, the joint likelihood of the  $T$  choices for a given respondent  $i$  is

$$L_i(\beta) = \prod_{t=1}^T \prod_{j=1}^J \left( \frac{\exp(x_{ijt}\beta)}{\sum_{h=1}^J \exp(x_{ith}\beta)} \right)^{y_{ijt}}$$

where  $y_{ijt}$  denotes a binary indicator that is equal to one if respondent  $i$  in choice situation  $t$  chooses alternative  $j$ , and 0, otherwise. In the multinomial logit model, the same vector of coefficients applies to all respondents. The MXL model incorporates preference heterogeneity by integrating the joint likelihood over a continuous mixing distribution  $f(\beta)$ ,

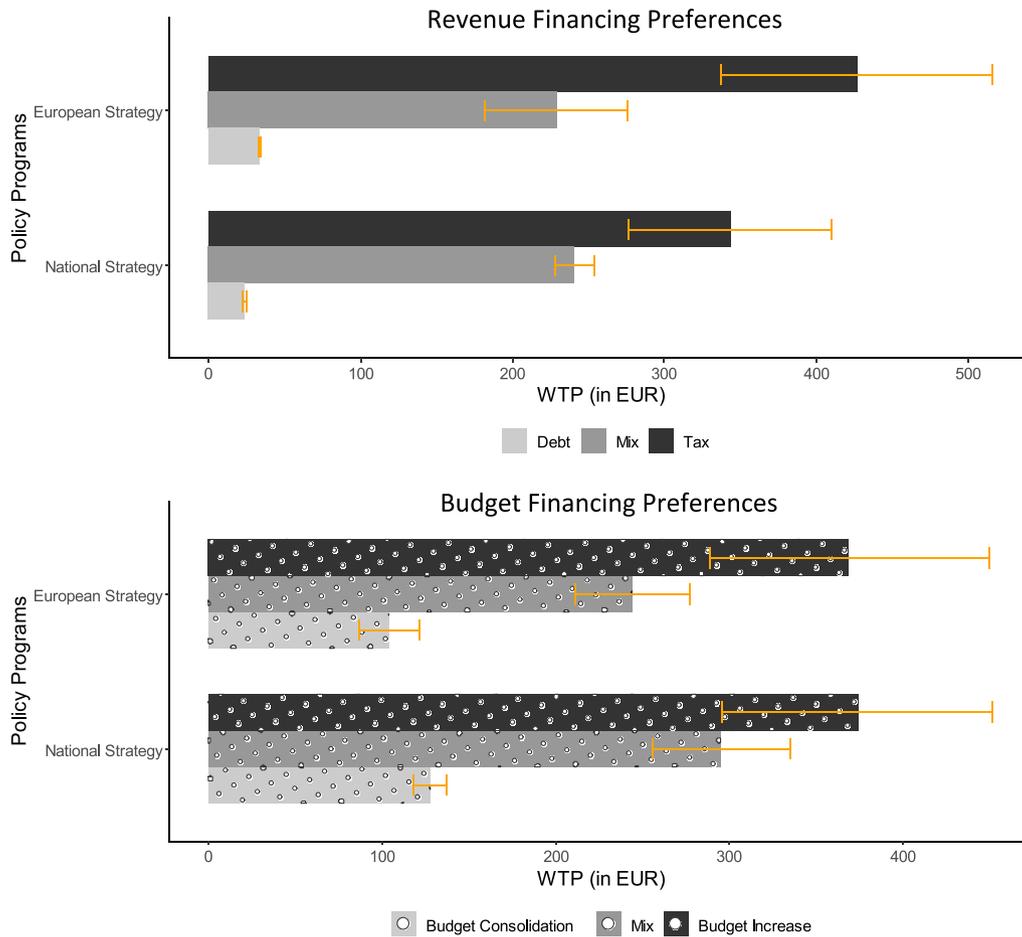
$$P_i = \int L_i(\beta)f(\beta)d\beta.$$

We assume normally distributed coefficients for the defense measures and negative log-normal cost coefficients. Finally, we interact with financing and provision preferences by taking the estimated WTP for individual attributes from the MXL models to construct policy programs and comparing the estimated average WTP for these programs between subsamples (detailed estimation tables are shown in Tables S2 and S3).<sup>11</sup> We present the average individual WTP for two much discussed alternative policy packages:

- National strategy: a 25% increase in the number of troops and their equipment and the implementation of a German air defense system.
- European strategy: the introduction of a European Army and the implementation of a European air defense system.<sup>12</sup>

Figure 1 has the results from the MXL models for the programs by revenue financing and budget financing preferences. We make several observations. Both programs enjoy public support. WTP estimates are considerably higher for respondents preferring taxation or that mixed with debt compared to those preferring pure debt financing. WTP estimates are also considerably higher for respondents preferring extension of the federal budget over consolidation.

These findings have several implications. Firstly, when offering respondents different policy outcomes and their respective costs, we recover the same relationship between spending, revenue financing, and budget financing preferences as in the previous section. Regarding the debate on fiscal conservatism and citizens' preferred fiscal stance, our findings reveal a relevant dimension of heterogeneity: those people who highly value additional government spending and know the associated costs



**FIGURE 1** | WTP for policy packages categorized by financing preferences. *Note:* WTP estimates for the national and European strategies from the MXL models for each group of financing preferences with 95% CI. The results show, for example, that the WTP for both the national and European strategies of those supporting taxation is higher than that of those favoring debt financing. See Tables S2 and S3 for detailed estimation tables. The sample consists of 1808 respondents, each with eight choice tasks (total number of observations: 14464); 23% of respondents support debt issuance; 23%, tax financing; and 54%, an equal mix; 54% of respondents favor consolidation; 14%, increasing the budget; and 32%, a mix. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

support deficit-neutral budgeting as well as extensions of government budgets. In contrast, those who do not endorse these provision policies are unwilling to bear any directly associated taxes, preferring debt issuance and consolidation of other budget positions.<sup>13</sup> Thus, these findings indicate that a binary perspective overlooks the interdependency between preferences for how public resources are sourced and used. Moreover, this finding underscores that the trade-off between prudent public finances and public support may not be existent, at least for popular policies. This also highlights the necessity to jointly consider spending and financing preferences when assessing public support.

Secondly, the average individual WTP of those preferring taxation is about €344 and €427 for the national and European strategy, respectively. This is higher than the €241 and €230 of those supporting mixed financing and the €24 and €34 of those preferring pure debt issuance to finance defense spending. Moreover, respondents who favor extending public budgets exhibit higher WTP, with amounts of €374 and €369, compared to the €295 and €244 of those favoring a mixed budget policy and the €127 and €104 of those supporting budget

consolidations. Considering individual WTP and population shares, the average German values the national strategy at about €215 and the European strategy at €230, corresponding to an aggregate tax potential of €8.8bn and €9.4bn, respectively. The high WTP indicates strong approval of the policy measures, showcasing that voters are not only supportive of these initiatives but are also willing to contribute financially. This approval stems from the belief that these measures will lead to a tangible increase in overall welfare, enhancing national security and societal well-being and directly contributing to their individual utility.

To provide context, Germany's defense expenditures in 2023 would have needed to reach €83.7bn to meet NATO's 2% guideline established at the Wales Summit in 2014.<sup>14</sup> In comparison, Germany's actual defense spending amounted to €58.5bn. This expenditure was financed through €50.1bn from the regular state budget and an additional €8.4bn from the previously mentioned €100bn in extraordinary debt issuance. A back-of-the-envelope calculation suggests that our estimated aggregated WTP of €8.8bn for the national strategy in additional taxation

could have covered 35% of the gap between actual and target expenditures in 2023.<sup>15</sup>

However, even though on average respondents support additional public outlays and are willing to bear their tax costs, once given alternative financing options, only 77% indicate a preference for bearing at least some taxes. Furthermore, 86% of respondents express a preference for some degree of consolidation in other public expenditures, comprising 54% who oppose any federal budget extensions and 32% who have mixed preferences. Thus, together these findings suggest that although the public is willing to bear a financial burden for enhanced defense readiness, consolidation of existing spending programs should remain a priority (Dorn, Potrafke, and Schlepper 2024).

Finally, the period immediately preceding the war in Ukraine was marked by minimal public support for defense expenditures and correspondingly low budget allocations to defense (Hübscher, Sattler, and Truchlewski 2023; Hayo and Neumeier 2019). Thus, in comparison to that period, our findings indicate a shift in preferences towards a significantly positive average willingness to contribute to defense readiness subsequent to the beginning of the conflict. Evidently, events that affect the perception of threats, as exemplified by the war in Ukraine, influence preferences. Whether this is a permanent shift remains to be seen.

### 3.4 | Heterogeneity in Financing Preferences

To examine heterogeneity in financing preferences and potential mechanisms underlying decision-making processes, we use an OLM to relate respondents' choices of preferred financing methods (tax vs. debt) to a set of explanatory variables. Explanatory variables are incorporated in the analysis based on previous studies' findings and economic intuition. We include *age*, as an indicator of self-interested decision-making, anticipating intergenerational differences in preferences. Specifically, support for debt issuance to finance defense spending is expected to increase with age, whereas support for taxation is likely to decrease with age (e.g., Aspide et al. 2023).<sup>16</sup> We include the perceived threat posed by *inflation* as an explanatory variable. Because additional tax hikes reduce real income by either lowering after-tax income or raising prices, thus causing inflation, we expect that individuals anticipate the reduction in purchasing power and that those who indicate higher concerns about inflation will be less likely to support taxation. Following a similar rationale as in Section 3.2, we include *ABT* to account for individuals' financial situations. Furthermore, our model includes the place of residence (*East* or *West* Germany) to account for previous studies documenting the influence of socialization under different political and societal regimes on preferences for fiscal policy and redistribution (e.g., Alesina and Fuchs-Schündeln 2007). Previous research identified gender as a significant predictor of fiscal policy preferences. Specifically, studies highlight that female respondents are more resistant to fiscal consolidation and debt reduction (e.g., Heinemann and Hennighausen 2012) as well as more supportive of redistributive policies (e.g., Hayo and Neumeier 2019; Hennighausen and Heinemann 2015). Thus, we include *female* as a dummy variable. To capture political and ideological differences we incorporate *political orientation* and

*partisanship*.<sup>17</sup> Finally, to further assess citizens' fiscal stance, we include respondents' preferences toward a *budget increase* as an explanatory variable on a five-point scale. Our previous findings suggest that respondents prefer taxation and those preferring budget extensions tend to support increased defense spending. We would classify respondents who support budget extensions by taxation as proponents of sustainable public finances. Conversely, those who favor financing through debt issuance are considered fiscally excessive. Control variables encompass household income, education, employment status, relationship status, and household size. Table 3 presents the average partial effects (APEs) from the model for each outcome level.<sup>18</sup>

Estimates indicate a propensity toward sustainable public finances, evidenced by the preference for tax financing of the public good among those endorsing a budget increase. In particular, those preferring an extension of the federal budget are 11 percentage points more likely to support taxation than those preferring a budget consolidation. A higher ABT for defense spending is associated with an increased probability of supporting taxation instead of debt issuance.

As expected, respondents who felt more threatened by inflation displayed a lower inclination towards taxation and preferred debt issuance instead. Moreover, East Germans exhibit a lower propensity to opt for taxation and display a preference for debt issuance compared to their Western counterparts, suggesting potentially stronger preferences for intertemporal burden shifting, that is, intergenerational redistribution. We observe that female respondents tend to exhibit a larger preference for debt financing and an aversion toward taxation, which aligns with previous research indicating gender disparities in fiscal preferences.

In analogy to studies investigating preferences for debt reduction (Aspide et al. 2023), our results suggest a correlation between higher age and a preference for debt financing, coupled with a reduced likelihood of selecting tax financing. Notably, as depicted in Figure 2, this relation exhibits nonlinearity, with the threshold at approximately 50 years. Taken as a cohort, the 60- to 69-year-olds are 12 percentage points more likely to support debt issuance and nine percentage points less likely to support taxation relative to the 18- to 29-year-olds. Finally, although an individual's position on the left-right ideological spectrum lacks explanatory power, partisanship does. Specifically, individuals intending to vote for one of the major centrist parties (CDU/CSU, FDP, SPD, and Greens) are more likely to favor taxation over debt issuance compared to nonvoters. These findings suggest that centrist parties have at least some voter support for pursuing taxation-based financing strategies.

## 4 | Validity and Robustness

In this section, we address the validity and robustness of our findings. We follow the outline by Haghani et al. (2021a, 2021b), who present a comprehensive overview of hypothetical bias and its relation to the broader concept of validity in choice experiments.<sup>19</sup>

We first address internal validity. Haghani et al. (2021a) identify two main requirements for a study to be internally valid: (i) the

**TABLE 3** | Average partial effects for forms of revenue financing.

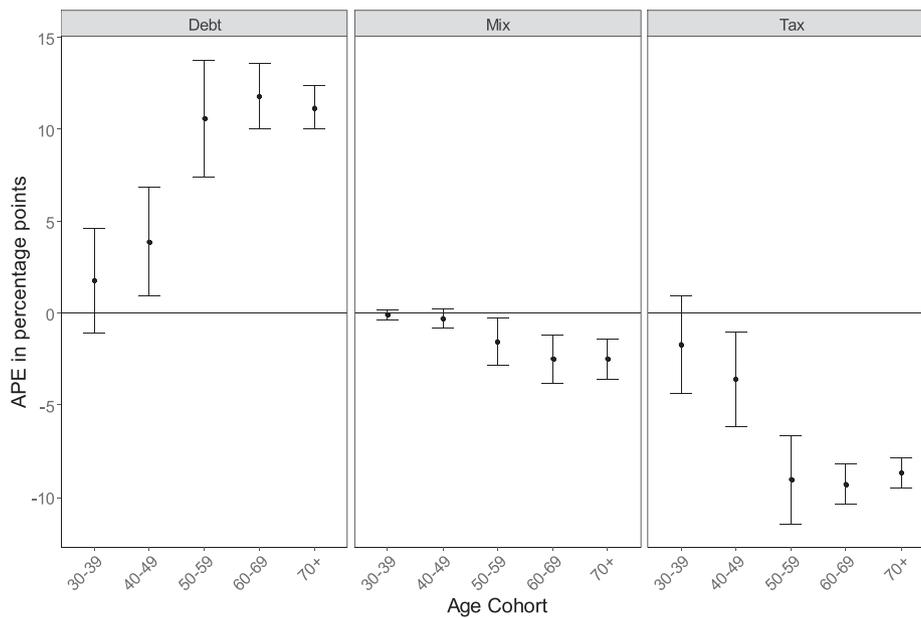
Revenue financing	Tax	Mix	Debt
Budget increase	0.028 (0.007)***	0.000 (0.001)	-0.029 (0.007)***
Ability-to-pay	0.045 (0.007)***	0.000 (0.002)	-0.045 (0.008)***
Threat: Inflation	-0.025 (0.006)***	0.000 (0.001)	0.025 (0.006)***
East	-0.043 (0.017)**	-0.005 (0.004)	0.048 (0.021)**
Female	-0.061 (0.015)***	-0.001 (0.003)	0.062 (0.015)***
Age			
30–39	-0.017 (0.014)	-0.001 (0.001)	0.018 (0.014)
40–49	-0.036 (0.013)***	-0.003 (0.003)	0.039 (0.015)***
50–59	-0.090 (0.012)***	-0.015 (0.007)**	0.106 (0.016)***
60–69	-0.093 (0.006)***	-0.025 (0.007)***	0.118 (0.009)***
70+	-0.087 (0.004)***	-0.025 (0.006)***	0.112 (0.006)***
Pol. orientation	0.001 (0.006)	0.000 (0.000)	-0.001 (0.006)
Partisanship			
AFD	-0.019 (0.005)***	-0.001 (0.001)	0.020 (0.005)***
CDU/CSU	0.070 (0.017)***	-0.006 (0.005)	-0.064 (0.014)***
FDP	0.049 (0.003)***	-0.005 (0.002)*	-0.045 (0.002)***
Greens	0.112 (0.017)***	-0.018 (0.008)**	-0.093 (0.012)***
Leftists	0.006 (0.002)***	0.000 (0.000)	-0.006 (0.002)***
SPD	0.057 (0.016)***	-0.005 (0.004)	-0.052 (0.013)***
Other	0.022 (0.002)***	-0.001 (0.001)	-0.021 (0.001)***
Controls: Yes			
N: 1808			

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The table provides the average partial effects (APEs) from the OLM, explaining the preferred form of revenue financing (0 = tax financing, 1 = mix of tax and debt financing, and 2 = debt financing). The results show, for example, that the probability of having a preference for financing the public good entirely by taxes is on average about 4.3 percentage points lower for respondents living in East Germany compared to respondents in West Germany, ceteris paribus. Control variables include household income, education, employment status, relationship status, and household size. The reference age cohort is the 18- to 29-year-olds. The reference category for partisanship consists of individuals who are not affiliated with a political party.

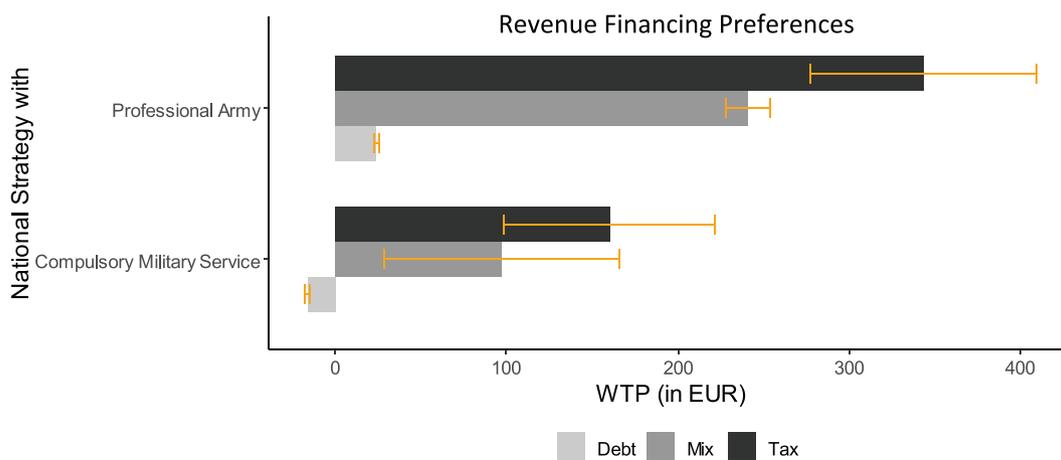
research design should adhere to the best design recommendations and (ii) the choice behavior of study participants should be in line with the theoretical assumptions of demand theory. With respect to the first point, our study implements the current state-of-the-art DCE methodology (Johnston et al. 2017). With respect to the second point, we circumvent typical problems related to the use of unidimensional questionnaires (Welch 1985; Edlund and Johansson Sevä 2013) and, thus, ensure consistent choice behavior in a narrow sense, that is, by using a DCE additional spending is necessarily associated with a tax implication. Moreover, our estimates indicate cost sensitivity, that is, the average choice probability is a decreasing function in the policies' costs, aligning with predictions from microeconomic demand theory. To demonstrate, we estimate the share of public support for the national strategy package (a 25% increased troop size and the implementation of a German air defense program) at different cost thresholds. Utilizing our MXL models, we predict the average choice probabilities for the policy package, interpreted as the percentage of public support. Public support as a function of the costs is decreasing, that is, demand is cost-sensitive (see

Figure S3). Hence, policymakers need to mind the sensitivity of approval rates to the size of tax hikes.

The most relevant aspect of external validity is hypothetical bias.<sup>20</sup> Specifically, our research design relies on the assumption that respondents engage in a cost-benefit analysis, reflecting their concern for the associated benefits and costs of provision and financing policies. If respondents are not concerned, then the identifying assumption fails, resulting in hypothetical bias. Due to the nature of the public good defense, it is not possible to directly compare the stated preferences from our experiment to revealed preferences. However, it is possible to make comparisons to other surveys. Qualitatively our results resemble elicited preferences in other recently conducted studies, such as the Eurobarometer, which finds broad support for a European Army, or the yearly survey on security and defense policy opinions conducted by researchers from the Center for Military History and Social Sciences of the Federal Armed Forces, that shows increased support for military expenditures subsequent to the Russian attack in



**FIGURE 2** | Average partial effects for forms of revenue financing by age cohort. *Note:* APE estimates of different age cohorts for forms of financing from the OLM (Table 3) with 95% CI. The results show, for example, that the 60- to 69-year-olds are 12 percentage points more likely to support debt issuance and nine percentage points less likely to support taxation relative to the 18- to 29-year-olds.



**FIGURE 3** | Disapproval of compulsory military service. *Note:* WTP estimates for the national with a professional army versus compulsory military service from the MXL models for each group of financing preferences with 95% CI. The results show that compulsory military service is less popular among the general public. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Ukraine as well as a dislike for compulsory military service (Graf 2024). To show the latter point, we compare support for two different implementations of the national strategy: one with a professional army, that is, a 25% increase in troop size, and one with compulsory military service.<sup>21</sup> Figure 3 shows that WTP drastically declines for the policy package involving compulsory military service compared to the one with a professional army. This is in line with Graf (2024) and may be due to a feared loss of human capital and a delay in young people entering the workforce (Adema et al. 2024).

In an effort to address hypothetical bias and improve incentive compatibility, we incorporated a budget reminder, a consequentiality statement, and repeated opt-out reminders in the experiment.<sup>22</sup> Moreover, we argue that in the case of national defense and the mandatory nature of its financing, consequentiality and

strategic behavior related to free-riding should be less problematic. For this, we also highlight the previous discussions about the timing of the experiment, related to the war in Ukraine, its relevance for German domestic politics, particularly regarding the potential reintroduction of compulsory military service, as well as the choice of attributes, in particular their level of aggregation reflecting the relevant level of political and public debate. Moreover, we surveyed *policy* and *payment* consequentiality with two separate questions.<sup>23</sup> Participants who perceive their decisions as at least not potentially consequential for future policy should have a higher probability of hypothetical bias (Vossler, Doyon, and Rondeau 2012). After omitting respondents indicating a lack of consequentiality in at least one dimension, we re-estimate our models. Notably, results remain comparable and robust. Finally, comparing voting intentions in our sample to a representative survey at the time, we find that

the distribution of voting preferences for political parties in our sample is comparable to polling from around the time of the experiment (see Table S8).

## 5 | Conclusion

Policymakers often resort to deficit financing to meet public expenditure needs, as budgetary adjustments or tax increases are typically seen as less politically favorable and lacking voter approval. To assess whether there is a trade-off between maintaining prudent public finances and securing voter support, particularly in light of the Russian war against Ukraine, this study elicits political preferences concerning the provision and financing of the public good defense. By utilizing survey questions and a discrete choice experiment, we elicit attitudes and WTP as proxies for political preferences and voter approval. Our results indicate a strong interdependence between preferences for public good provision and the financing of these goods. Individuals who highly value national defense and understand the associated costs tend to support deficit-neutral budgets funded through tax increases. Conversely, those who oppose specific spending policies are typically reluctant to bear direct tax costs, preferring financial solutions like debt issuance and budget consolidation.

Our findings have several policy implications. Contrary to popular belief that prudent fiscal policy is inherently at odds with voter preferences, our results might encourage politicians to call for tax hikes as long as the proposed expenditures align with public desires and, thus, receive voter support. Considering the public good of defense amidst the current geopolitical tensions in Europe, countries favoring enhanced national defense readiness should finance this through tax increases. Resistance to taxation for such a well-recognized purpose is likely to be relatively low. Germany's recent approach of boosting military spending primarily through debt was not strictly necessary, especially from the perspective of prudent voters. This insight holds particular importance given national and European fiscal rules and debt limitation regimes. Countries already burdened with high national debt have limited room for further debt-financed spending. Thus, strengthening the defense budget need not rely solely on budget consolidation but can be effectively supported through tax financing without risking voter backlash.

By enhancing the understanding of public preferences, policymakers can craft policies that more accurately reflect voter priorities, thus reducing the risk of electoral backlash and helping to prevent potentially unnecessary increases in public deficits. Our study's method of investigating citizens' preferred fiscal stance and examining the relationship between preferences for spending and financing public goods through a survey-based DCE offers numerous opportunities for future research. It might be advisable to conduct repeated preference analyses over time to capture the effects of evolving conditions. Additionally, international comparisons would be valuable for identifying similarities and differences in preferences, and in the context of defense, for considering varying threat perceptions, for instance. Lastly, a closer examination of macroeconomic variables such as the current tax rate, debt ratio, or budget composition could provide further valuable insights.

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## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Endnotes

- <sup>1</sup> Germany spent between 2% and 3% of its GDP on the armed forces during the 1980s. In contrast, after the end of the Cold War the country maintained relatively modest expenditure levels of less than half that share, benefiting from a peace dividend of more than €480bn (Dorn, Potrafke, and Schlepper 2024).
- <sup>2</sup> The English translation of the originally German spending question is as follows: "To what extent do you agree or disagree with the following statement? I would support any strengthening of Germany's defense readiness, no matter the costs." The options given to respondents were as follows: (i) completely support, (ii) rather support, (iii) partly/partly, (iv) rather oppose, and (v) completely oppose.
- <sup>3</sup> The translated question reads as follows: "The measures for a changed security policy will further increase the current expenditure for the Federal Armed Forces. In addition to additional taxes for all households, it is also possible to finance this through more national debt. This would mean that the current tax and contribution burden would remain the same, and only later would the debt have to be repaid through higher taxes and levies. Which form of financing would you prefer?" The options given to respondents were as follows: (i) mainly through taxes, (ii) the expenditure should be divided in half between taxes and government debt, and (iii) mainly through government debt.
- <sup>4</sup> The question, when translated, is as follows: "To what extent do you agree or disagree with the following statement? The government should only use money from the current federal budget for these additional measures." The options given to respondents were as follows: (i) completely agree, (ii) tend to agree, (iii) partly/partly, (iv) tend to disagree, and (v) completely disagree.
- <sup>5</sup> We have aggregated budget financing preferences from five to three categories. Whenever we use budget financing preference as an explanatory variable, it is coded on a five-point scale.
- <sup>6</sup> We asked respondents the following question: "To what extent do you agree or disagree with the following statement? I cannot afford to contribute financially to these measures." The options given to respondents were as follows: (i) completely agree, (ii) tend to agree, (iii) partly/partly, (iv) tend to disagree, and (v) completely disagree. Moreover, self-reported income often contains significant measurement errors, partly because respondents may be reluctant to disclose accurate information due to the sensitive nature of the topic. Therefore, we use this additional variable, referred to as ABT, which may provide a more robust measure of respondents' financial situations. This variable potentially incorporates additional information, particularly income available after necessary expenditures.
- <sup>7</sup> In fact, a growing field of empirical research examines whether household inflation perceptions and expectations are sensitive to fiscal considerations. For instance, Coibion, Gorodnichenko, and Weber (2021) find in a US sample that information about rising public debt leads respondents to anticipate rising public spending, higher inflation, and higher rates of interest on government debt.
- <sup>8</sup> A DCE offers several advantages for assessing public approval of public policies compared to traditional survey questions. By directly

including a tax cost implication for additional expenditures, DCEs enforce trade-offs, more realistically reflect the actual circumstances of policy decisions and thereby address “inconsistencies” in respondents’ choice behavior. Moreover, they naturally convey more information to respondents about possible policy alternatives as well as their related costs, thereby addressing concerns about fiscal illusion. Consequently, the elicited preferences also incorporate more information: They resemble approval rates for the public policies considering their associated tax costs and can easily be translated into WTP estimates. Thus, the DCE serves as a form of extension to and robustness test for our results from the previous section.

<sup>9</sup> The selection of attributes was discussed with experts at the Center for Military History and Social Sciences of the Federal Armed Forces in Potsdam, Germany.

<sup>10</sup> For this analysis, we aggregate the budget structure variable into three categories: budget consolidation, budget increase, and a mixture of them both.

<sup>11</sup> Multiple sets of starting values were tested for obtaining the global maximum. When fitting MXL models, 1000 Sobol draws were used to simulate the log-likelihood. MXL were estimated with the *Apollo* package (Hess and Palma 2023) in R.

<sup>12</sup> For some time, proposals advocating for a European army, particularly from the French side, have emphasized the necessity to strengthen combined European military capabilities alongside NATO (e.g., Macron 2017). Following the beginning of the war in Ukraine, Germany initiated the European Sky Shield Initiative to enhance defense capabilities against airborne threats. Germany’s sea change provided initial funds to invest in additional military equipment (German Government 2022). However, various policymakers from different political parties have advocated to further bolster defense readiness by increasing the number of German troops and their equipment.

<sup>13</sup> In Section 3.4, we show that there is a positive correlation between preferences for budget expansion and taxation, which supports the notion that citizens’ demanding a policy prefer sustainable public finances.

<sup>14</sup> Germany’s GDP in 2023 amounted to €4185.6bn in 2023 prices.

<sup>15</sup> What cannot be learned from these valuations expressed as WTP is whether they are enough to cover the actual cost of provision.

<sup>16</sup> We include age cohorts as dummies (reference group: 18–29). For a continuous specification, see Table S4.

<sup>17</sup> Individuals indicating no party affiliation are used as the reference group.

<sup>18</sup> APEs are the mean of the unit-specific partial effects of the OLM equation with respect to each variable. That is, APEs reflect the average contribution of each regressor on the outcome scale.

<sup>19</sup> To avoid redundancy, this section discusses solely findings related to the tax-debt financing variable. The results also extend to budget financing preferences.

<sup>20</sup> Hypothetical bias is “the deviation in a predefined aggregate or disaggregate measure due to choice data being collected in a hypothetical setting instead of a more realistic (but not necessarily naturalistic) setting” (Haghani et al. 2021a).

<sup>21</sup> Following the beginning of the war in Ukraine, various policymakers and political parties have advocated for the reinstatement of conscription that was originally suspended in 2011.

<sup>22</sup> The purpose of the budget reminder was to draw respondents’ attention to their limited private budgets, highlighting that funds allocated to a policy would not be available for other expenses. The consequentiality statement underscored that the experiment’s outcomes would be disseminated, potentially influencing future policy decisions. The opt-out reminder, reiterated in each choice scenario, emphasized that if the costs of additional policies exceeded the individual’s WTP, selecting the status-quo alternative was appropriate. Opt-out

reminders have been shown to mitigate hypothetical bias and alleviate the reliance of estimates on the selection of the cost vector (Börger et al. 2024).

<sup>23</sup> We asked respondents in the questionnaire after the DCE the following questions: “To what extent do you agree to the following statements? My answers to this questionnaire affect the implementation of the mentioned policy measures.” (policy consequentiality) and “To what extent do you agree to the following statements? If these measures are implemented, I believe that I must pay higher taxes.” (payment consequentiality). Respondents were given five-point scales for their answers: from 1 = completely agree, that is, consequential, to 5 = completely disagree, that is, inconsequential. After omitting respondents that indicated inconsequentiality in at least one question (= 5), the remaining sample holds 1542 respondents, which we then use to re-estimate the previous models. For more detailed estimation results, refer to Section 3 of the [Supporting Information](#).

## References

- Adema, J., P. Poutvaara, M. Schlepper, T. Taghiyev, and T. Wochner. 2024. *Volkswirtschaftliche Kosten einer Wiedereinführung der Wehrpflicht oder eines sozialen Pflichtjahres*, Vol. 144. München: Ifo Forschungsberichte, ifo Institut.
- Alesina, A., and N. Fuchs-Schündeln. 2007. “Good-Bye Lenin (or Not?): The Effect of Communism on People’s Preferences.” *American Economic Review* 97, no. 4: 1507–1528.
- Alesina, A., C. Favero, and F. Giavazzi. 2019. *Austerity: When It Works and When It Doesn’t*. Princeton, NJ: Princeton University Press.
- Alptekin, A., and P. Levine. 2012. “Military Expenditure and Economic Growth: A Metaanalysis.” *European Journal of Political Economy* 28: 636–650.
- Arias, E., and D. Stasavage. 2019. “How Large Are the Political Costs of Fiscal Austerity?” *Journal of Politics* 81, no. 4: 1517–1522.
- Aspide, A., K. J. Brown, M. Digiuseppe, and A. Slaski. 2023. “Age and Support for Public Debt Reduction.” *European Journal of Political Research* 62: 1191–1211.
- Bansak, K., M. Bechtel, and Y. Margalit. 2021. “Why Austerity? The Mass Politics of a Contested Policy.” *American Political Science Review* 115, no. 2: 486–505.
- Barnes, L., J. Blumenau, and B. E. Lauderdale. 2022. “Measuring Attitudes Toward Public Spending Using a Multivariate Tax Summary Experiment.” *American Journal of Political Science* 66: 205–221.
- Bonica, A. 2015. “Measuring Public Spending Preferences Using an Interactive Budgeting Questionnaire.” *Research & Politics* 2, no. 2: 1–9.
- Börger, T., K. Glenk, J. Meyerhoff, and K. Rehdanz. 2024. “Mitigating Cost Vector Effects in Stated Choice Experiments Using Cheap Talk and Opt-Out Reminders.” *Journal of the Association of Environmental and Resource Economists* forthcoming. <https://doi.org/10.1086/731886>.
- Bremer, B., and R. Bürgisser. 2023a. “Public Opinion on Welfare State Recalibration in Times of Austerity: Evidence From Survey Experiments.” *Political Science Research and Methods* 11, no. 1: 34–52.
- Bremer, B., and R. Bürgisser. 2023b. “Do Citizens Care About Government Debt? Evidence From Survey Experiments on Budgetary Priorities.” *European Journal of Political Research* 62: 239–263.
- Buchs, A., and N. Soguel. 2022. “Fiscal Performance and the Re-Election of Finance Ministers—Evidence From the Swiss Cantons.” *Public Choice* 191: 31–49.
- Coibion O., Y. Gorodnichenko, and M. Weber. 2021. “Fiscal Policy and Households’ Inflation Expectations: Evidence From a Randomized Control Trial.” NBER Working Paper no. 28485.

- Dorn, F. 2024. "Defence Spending for Europe's Security—How Much Is Enough?" *Intereconomics—Review of European Economic Policy* 59, no. 4: 204–209.
- Dorn, F., N. Potrafke, and M. Schlepper. 2024. "European Defence Spending in 2024 and Beyond: How to Provide Security in an Economically Challenging Environment." *EconPol Policy Report* 45.
- Edlund, J., and I. Johansson Sevä. 2013. "Exploring the 'Something for Nothing' Syndrome: Confused Citizens or Free Riders? Evidence From Sweden." *Scandinavian Political Studies* 36, no. 4: 293–319.
- Eichenberg, R. C. 2019. *Gender, War, and World Order: A Study of Public Opinion*. Ithaca, NY: Cornell University Press.
- Fetzer, T. 2019. "Did Austerity Cause Brexit?" *American Economic Review* 109, no. 11: 3849–3886.
- German Government. 2022. "Government Statement by Federal Chancellor Olaf Scholz on February 27, 2022 [in German]." <https://www.bundesregierung.de/breg-de/suche/regierungserklaerung-von-bundeskanzler-olaf-scholz-am-27-februar-2022-2008356>.
- Graf, T. 2024. "What Remains of the Sea Change in People's Minds? Security and Defense Policy Opinion in the Federal Republic of Germany [in German]." *ZMSBw Forschungsbericht* 136.
- Haghani, M., M. C. Bliemer, J. M. Rose, H. Oppewal, and E. Lancsar. 2021a. "Hypothetical Bias in Stated Choice Experiments: Part I. Integrative Synthesis of Empirical Evidence and Conceptualisation of External Validity." *Journal of Choice Modelling* 41: 100322.
- Haghani, M., M. C. Bliemer, J. M. Rose, H. Oppewal, and E. Lancsar. 2021b. "Hypothetical Bias in Stated Choice Experiments: Part II. Conceptualisation of External Validity, Sources and Explanations of Bias and Effectiveness of Mitigation Methods." *Journal of Choice Modelling* 41: 100322.
- Hansen, J. M. 1998. "Individuals, Institutions, and Public Preferences Over Public Finance." *American Political Science Review* 92, no. 3: 513–531.
- Hayo, B., and F. Neumeier. 2017. "Public Attitudes Toward Fiscal Consolidation: Evidence From a Representative German Population Survey." *Kyklos* 70: 42–69.
- Hayo, B., and F. Neumeier. 2019. "Public Preferences for Government Spending Priorities: Survey Evidence From Germany." *German Economic Review* 20, no. 4: e1–e37.
- Heinemann, F., and T. Hennighausen. 2012. "Understanding Public Debt Preferences." *FinanzArchiv/Public Finance Analysis* 68, no. 4: 406–430.
- Hennighausen, T., and F. Heinemann. 2015. "Don't Tax Me? Determinants of Individual Attitudes Toward Progressive Taxation." *German Economic Review* 16, no. 3: 255–289.
- Hess S., and D. Palma. 2023. "Apollo: A Flexible, Powerful and Customizable Freeware Package for Choice Model Estimation and Application." R Package Version 0.2.9. <http://www.ApolloChoiceModelling.com>.
- Hübscher, E., T. Sattler, and Z. Truchlewski. 2023. "Three Worlds of Austerity: Voter Congruence Over Fiscal Trade-Offs in Germany, Spain and the UK." *Socio-Economic Review* 21, no. 2: 959–983.
- Johnston, R., K. Boyle, W. Adamowicz, et al. 2017. "Contemporary Guidance for Stated Preference Studies." *Journal of the Association of Environmental and Resource Economists* 4, no. 2: 319–405.
- Jottier, D., J. Ashworth, and B. Heyndels. 2012. "Understanding Voters' Preferences: How the Electorate's Complexity Affects Prediction Accuracy and Wishful Thinking Among Politicians With Respect to Election Outcomes." *Kyklos* 65: 340–370.
- Keneck-Massil, J., I. Nkariempoun-Njoya, and B. C. Nomo-Beyala. 2024. "Does Women's Political Empowerment Matter in Military Spending?" *Kyklos* 77, no. 2: 316–350.
- Kreiner, C. T., and N. Verdellin. 2012. "Optimal Provision of Public Goods: A Synthesis." *Scandinavian Journal of Economics* 114: 384–408.
- Liff, A. P. 2016. "Whither the Balancers? The Case for a Methodological Reset." *Security Studies* 25, no. 3: 420–459.
- Lohse, L., T. Börger, J. Meyerhoff, and S. Qari. 2023. "Der Wert von Sicherheit und nationaler Verteidigung." *Wirtschaftsdienst* 6: 394–399.
- Macron E. 2017. "Speech on New Initiative for Europe." <https://www.elysee.fr/en/emmanuel-macron/2017/09/26/president-macron-gives-speech-on-new-initiative-for-europe>.
- Mader, M., M. Neubert, F. Münchow, S. C. Hofmann, H. Schoen, and K. Gavras. 2024. "Crumbling in the Face of Cost? How Cost Considerations Affect Public Support for European Security and Defence Cooperation." *European Union Politics* 25, no. 3: 483–503.
- Murtinu, S., G. Piccirilli, and A. Sacchi. 2022. "Rational Inattention and Politics: How Parties Use Fiscal Policies to Manipulate Voters." *Public Choice* 190: 365–386.
- Puhani, P. A., and M. K. Sterrenberg. 2022. "Effects of Mandatory Military and Alternative Community Service on Wages and Other Socioeconomic Outcomes." *Kyklos* 75, no. 3: 488–507.
- Qari, S., T. Börger, T. Lohse, and J. Meyerhoff. 2024. "The Value of National Defense: Assessing Public Preferences for Defense Policy Options." *European Journal of Political Economy* 85: 102595.
- Revelt, D., and K. Train. 1998. "Mixed Logit With Repeated Choices: Households' Choices of Appliance Efficiency Level." *Review of Economics and Statistics* 80: 647–657.
- Samuelson, P. A. 1954. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics* 36: 387–389.
- Stix, H. 2013. "Does the Broad Public Want to Consolidate Public Debt?" *Kyklos (Basel)* 66: 102–129.
- Stoltenberg J. 2023. "Pre-Summit Press Conference by Secretary General Jens Stoltenberg Ahead of the NATO Summit in Vilnius." [https://www.nato.int/cps/en/natohq/opinions\\_216939.htm](https://www.nato.int/cps/en/natohq/opinions_216939.htm).
- Sutherland, B., ed. 2014. *Modern Warfare, Intelligence and Deterrence: The Technologies That Are Transforming Them*. London: Economist.
- Throsby, D., and G. A. Withers. 2001. "Individual Preferences and the Demand for Military Expenditure." *Defence and Peace Economics* 12: 87–102.
- Train, K., and M. Weeks. 2005. "Discrete Choice Models in Preference Space and Willingness-To-Pay Space." In *Applications of Simulation Methods in Environmental and Resource Economics, the Economics of Non-Market Goods and Resources* 6, edited by R. Scarpa and A. Alberini. Dordrecht: Springer.
- Vishwasrao, S., M. Schneider, and E. P. Chiang. 2019. "The Effects of Military Occupation on Growth." *Kyklos* 72, no. 1: 183–207.
- Vossler, C. A., M. Doyon, and D. Rondeau. 2012. "Truth in Consequentiality: Theory and Field Evidence on Discrete Choice Experiments." *American Economic Journal: Microeconomics* 4, no. 4: 145–171.
- Welch, S. 1985. "The 'More for Less' Paradox: Public Attitudes on Taxing and Spending." *Public Opinion Quarterly* 49, no. 3: 310–316.
- Williams, L. K. 2015. "Estimating the Defense Spending Vote." *Electoral Studies* 39: 243–255.
- Williams, L. K. 2019. "Guns Yield Butter? An Exploration of Defense Spending Preferences." *Journal of Conflict Resolution* 63, no. 5: 1193–1221.

### Supporting Information

Additional supporting information can be found online in the Supporting Information section.