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When Germany Ended Conscription, and an Era: Effects on Composition and Quality of its Military

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Abstract

On July 1, 2011 Germany formally suspended the draft that had been in place since 1957. This study examines data from the German Micro Census and the German General Social Surveys to estimate the causal effects of the switch to an All-Volunteer Force (AVF) on the quantity and quality of military recruits, as well as perceived demand for defense. Using a difference-indifferences empirical strategy, the paper finds that while the perceived importance of national defense dropped, the average quality of German military recruits increased with the switch to an AVF. Implications for policy are then considered.

Keywords: Conscription; Military manpower; Difference-in-differences; All-volunteer force; German armed forces

Introduction

On July 1, 2011 Germany formally suspended the military draft, marking the end of a postwar tradition. West Germany introduced compulsory military service in 1957 as a way to ensure its postwar military is subservient to a democratic Parliament, by binding its armed forces to society. Over the decades and through the reunification of East and West Germany, conscripts served in either the Bundeswehr, as the armed forces are called, or in alternative civil service, for example as helpers in old-age homes, for periods that varied from a maximum of 18 months, and, toward the end, of only six months. Despite being such a major reform, little research exists examining the impact of Germany's military draft suspension. This article fills this gap by estimating the effects of Germany's switch to an All-Volunteer Force (AVF) on the composition and quality of recruits into the German Armed Forces (GAF), as well as on the overall perception of the importance of national security among the German population. To do so, the authors employ German micro census data, German General Social Surveys, and a difference-in-differences empirical framework. The difference-in-differences strategy mimics an experimental research design, and in this context, compares the difference in outcomes among German men who were subject to the draft relative to those who were not, during the years before versus after the draft suspension. The data and analyses reveal that the educational qualifications of recruits into the German military dramatically increased under the volunteer system relative to the draft. In the two years post-draft, the odds of a recruit having a higher secondary degree more than doubled among 17-19-year-old males in service compared to the control group. This indicates a striking improvement in the quality of German military manpower. In addition, the overall perception of the importance of national security among the German population dropped, which in turn suggests a decline in demand for defense. This finding begs the question of whether the German voluntary system will be sustainable in light of its population declines.

The rest of this article is organized as follows. The next section provides a brief review of related literature and discusses German's military draft suspension. Section 3 describes the data sources and empirical methods, while Section 4 presents the findings. The last section concludes and considers the policy implications of these findings.

Brief Review of Related Literature

The suspension of Germany's conscription policy occurred decades after its major allies took the same steps, including the United States that ended the draft in 1973. Many of the arguments on a military draft vs. a volunteer system were articulated in the USA context, and the debates were particularly contentious in light of the Vietnam War escalation in the mid-1960s. In 1969 USA President Nixon established the President's Commission on an All-Volunteer Force whose Report paved the way for the abolition of the draft in 1973.

The Report presented and addressed nine arguments against an AVF. Specifically, an AVF would: (1) be too costly, (2) crowd out other defense spending, (3) be less effective because only low-ability personnel would sign up, (4) be too inflexible in times of a crisis, (5) undermine patriotism by lessening the belief that each citizen has a moral responsibility to serve the country, (6) become an elitist institution, (7) be a mercenary force, (8) be racially unrepresentative, and (9) encourage foreign military adventurism [1].

The nine arguments can be summarized into a focus on the consequences of either manning policy for costs and efficiency, military effectiveness and manpower quality, and social justice ideals.

Most economists, including Nobel Laureate Milton Friedman and Walter Oi [2], argued that the real cost of manning the armed forces via conscription is greater than the cost of manning a volunteer force of the same size. Despite its potentially lower budgetary cost, a draft actually imposes larger overall costs because of the opportunity costs of draftees who are working at wages below what they would have otherwise earned in the labor market. Differences in comparative advantages of military conscripts are inefficiently harnessed in a draft system, generating additional social losses.

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Lee and McKenzie [3] lay out a theoretical framework for thinking about the draft vs. AVF that illustrate manning the military with volunteers is not unambiguously superior to a draft in terms of social cost. If military objectives are such that they require a force size above some theoretical threshold, then a draft force is more cost-efficient. Also, a volunteer force can actually be more socially costly if the AVF's budgetary costs are financed through highly distortionary taxes vs. in-kind under a draft [4]. The question of whether an AVF or draft is costlier is ultimately empirical in nature and hinges on the elasticity of manpower supply and productivity differences between volunteers and conscripts.

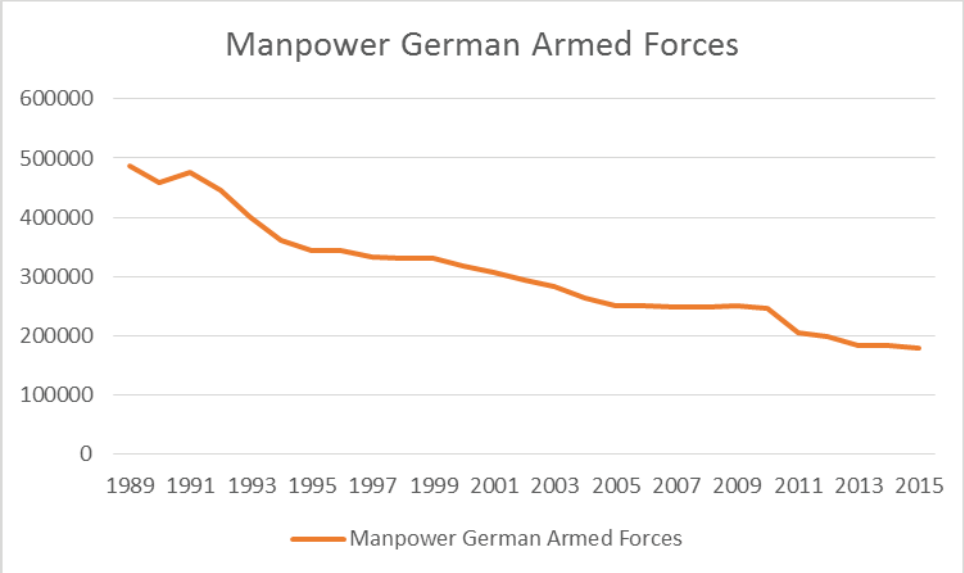
Keller et al. [5] shows that conscription has a statistically significant negative impact on economic performance among OECD countries, indicating its social cost. They note that in addition to the above arguments, shorter periods of training, lack of experience, and greater turnover in a draft system imply lower labor productivity among conscripts than among professional soldiers. In addition, volunteers are likely to be more motivated than draftees. On the other hand, the volunteer system does generate selection problems since the marginal recruit will be one with the lowest opportunity costs. Thus, an AVF will be more efficient in terms of military manpower quality only if the selection of draftee quality is worse than among volunteers.

Indeed, the USA experience of switching from the draft to an AVF has shown that the average quality of military service-members improved, attracting a greater proportion of recruits with high school diplomas and/or with cognitive ability (AFQT) scores at or above the median of its youth population (CBO) [6]. Turnover has also declined since 1973, while the average experience levels of its military personnel increased, indicating improvements in USA military productivity [4]. Concerns remain about the representativeness of the military force: today's recruits come primarily from families in the middle or lower middle classes, while the high end of the socioeconomic distribution is not well represented. African Americans are slightly overrepresented as Hispanics and women are underrepresented, compared to the civilian population. The other fears of an AVF noted by Gates et al. [1], such as military elitism and that it would turn into a mercenary force, do not seem to have materialized [7].

Rostker [8] identifies four broad reasons for the success of the AVF concept in the USA: (1) attention and leadership from top management, including the Gates Commission to senior government officials who oversaw recruitment; (2) use of quantitative analysis to test, adjust, and evaluate AVF policies; (3) programs for attracting the necessary type and number of recruits; and (4) adequate financial resources. To attract high-quality youths to enlist, the USA military learned it had to offer programs such as money for education, bonuses to enlist in certain occupations, enlistment tours of different lengths, and opportunities to develop careers that had civilian relevance. The USA defense budget had to be large enough to not only offer these incentives, but also support pay raises that kept up with inflation and with civilian pay increases, as well as resources for recruiting and quality-of-life initiatives [9].

Meanwhile, by 2010 most of the major NATO players and Western Europe had switched to voluntary service [10]. The end of the Cold War reduced the need for massive armies, while new mission designs (peace-keeping, monitoring, counter-insurgency) called for fewer, more sophisticated, yet highly specialized soldiers. Germany itself was experiencing a decline in its demand for military manpower. Figure 1 illustrates this declining trend in the number of men performing military service in Germany even prior to the draft suspension [11].

Germany had conscription for its male citizens aged 17-19 from 1957 to 2011. Women were not subject to conscription, and families who were oppressed by the Nazi regime were also exempt. They could join the military as volunteers, however. In November 2010, Germany's then-Defense Minister Karl-Theodor Freiherr zu Guttenberg proposed to the government to suspend conscription as of July 1, 2011. An outright abolition of the draft would require a constitutional reform, so technically the German constitution still has provisions that would legalize the potential reintroduction of conscription.



Note. Adapted from Germany, German Bundestag. (2016). Unterrichtung durch den Wehrbeauftragten Jahresbericht 2015 (57. Bericht) (pp. 89-90). Berlin, Germany: Deutscher Bundestag. Drucksache 18/7250

Figure 1: Military manpower of the German armed forces.

The German Defense Minister argued that the switch to an AVF would enable Germany to build a more cost-effective professional GAF suited for modern defense needs such as NATO and UN operations. Conscripts could not deploy to such active service missions, and the German contribution to forces such as ISAF in Afghanistan or KFOR in Kosovo were comprised exclusively of professional soldiers and volunteers. On the eve of the draft's suspension, only about 5,000 German soldiers were part of the NATO-led campaign in Afghanistan[1]. Dr. Guttenberg announced that along with suspending conscription, the Defense ministry would also restructure and downsize the force by 65,000, claiming that would allow Germany to save $10 billion[2].

To the best of the authors' knowledge, there are no studies to date that have examined the consequences of Germany's switch to a volunteer system on manpower quality and perceptions of national security, and only a few empirical studies that estimated efficiency losses of its previous draft system. For instance, Lutz [12] estimates that the annual monetized utility losses of conscripts in the German army were between €2.2 and 6.7 billion (between 9 and 27% of German defense expenditure at that time). Kunze [13] also finds that for German conscripts, their wages increase by 3.2% in the first year after compulsory service, but their wage income declines thereafter and the gap in wages between draftees and non-draftees only increases with time.

Data and Methods

Data

Data for analysis come from two separate sources. To analyze outcomes related to the composition and quality of recruits into GAF, the authors turn to German micro census annual surveys from 2010 to 2013. The German General Social Surveys (GGSS) from 2008 to 2014 are employed to analyze changes in the German population's perceptions of national security.

The German micro censuses are annual representative one-percent cross-section samples of the German population (German Federal Office of Statistics 2013)[3]. Data for analysis include two years before and two years after the end of conscription, allowing for a comparative analysis. The analysis sample includes all Germans aged 17 to 65 years old who are actively participating in the workforce.

From this data, an individual is identified as a military recruit if the respondent's occupation at any point in the last year is "military service member" (n=501). Highest degree of education completed is used to capture a recruit's quality, classified as three categories: midschool (middle school or equivalent only), high school (high school or equivalent) and sec school (highest secondary degree that qualifies for further education at a university). Roughly, these German degrees translate in the USA education system to completion of 9th grade (mid school), 12th grade vocational school (high school), and the equivalent of a USA high school degree is the German "Abitur" (sec school). The authors also examine whether or not a military recruit was unemployed in the last 12 months, as this could indicate enlistee quality[4] (Table 1).

[1]http://www.nytimes.com/2011/07/01/world/europe/01germany.html

[2]http://www.nytimes.com/2010/09/28/world/europe/28germany.html

[3]Due to privacy restrictions, the federal office of statistics limit scientific use files to a random 70% subsample from this. Furthermore, access to the data is limited to remote access. The authors send the STATA do-files of statistical commands to the federal office, they execute the commands and then screen the output for personally identifiable information before releasing the results.

[4]Koenigsmark, Stefan (2016). Suspended draft: Effects on the Composition and Quality of the Military Workforce in the German Armed Forces. NPS Master's Thesis, Monterey, CA.

Table 1 presents summary statistics for the key variables from this data, averaged over non-missing responses for each variable. All statistics use weights so the numbers are nationally representative. Means are presented separately for military recruits and the German population as a whole. Not surprisingly, there are fewer females in the military recruit sample (5.3%) compared to the general population (49.6%). Recruits are also on average younger than the overall population (22.7 vs. 41.4). Note that the distribution of education qualifications is such that fewer among military recruits are at lower education levels (midschool) and more at highschool compared to the overall German population. These differences are discussed in the context of results from a multivariate regression framework below.

Meanwhile the German General Social Survey (GGSS) is also nationally representative and has been conducted by the society of social-scientific infrastructure facilities (Gesellschaft Sozialwissenschaftlicher Infrastruktureinrichtungen - GESIS) every two years since 1980. The focus of the GGSS is on the perceptions and attitudes of the German population. The authors use GGSS data from two waves before the end of conscription (2008, 2010) and two years after (2012, 2014).

Perceptions of the importance of national security in the GGSS come from a question on how important are public order and security of Germany to the respondent. Respondents can respond on a four-point scale from "most important" (1) to "least important" (4). Table 2 presents summary statistics of the data used for analysis, which shows the perceived importance of national security is 2.34 between 2008-2014. The GGSS sample size has been about 3500 for every GGSS survey since 1992, and approximately 1.4% of the analysis sample is in the age range that is subject to a military draft (Table 2).

Methods

The end of German conscription is effectively a natural experiment

Variables	Recruits	Population
Sample size	501	1,739,344
Age	22.7 (5.6)	41.4 (13.3)
Female	5.3%	49.6%
Middle school degree	21.3%	28.6%
High school degree	45.4%	32.4%
Secondary school degree	31.5%	32.6%
Unemployed 12mo ago	5.0%	4.0%
Unemployment rate in state	7.8% (2.7)	7.1% (2.6)
Treatment group (17-19yo male, *C=1*)	18.2%	2.5%
Post draft (*T=1*)	72.5%	67.0%
Note: Data are from the German Micro Census Data from 2010 to 2013. Standard errors are in brackets where applicable.		

Table 1: Summary statistics in the census.

Variables	Overall
Sample Size	12,935
Age	51.1 (39.6)
Employed in Public Service	11.80%
Income per Year in Euro	24,661 (40,906)
Importance of Free Speech	2.56 (1.08)
Importance of Public Security	2.34 (1.08)
Treatment Group (17-19yo male, *C=1*)	1.4%
Respondents after the Policy Change	52.7%
Female	50.2%
Note: Data are from the German General Social Surveys from 2008 to 2014. Standard errors are in brackets where applicable.	

Table 2: Summary statistics in the GGSS.

since the policy directly affects only a certain part of the population: male teenagers between 17 and 19 years who could be drafted. As a consequence, the rest of the German population can serve as a "control group" in the experiment. The control group captures conditions in the labor market and overall economy experienced by Germans who were and weren't subject to the draft—that is, conditions common to both treatment or experimental and control groups—in the years before and years after the draft suspension.

More specifically, the equation the authors estimate is given by

$$Y_{it} = \beta_0 + \beta_1 T + \beta_2 C + \beta_3 (T \times C) + BX_{it} + \varepsilon_{it} \quad (1)$$

where Y_{it} represent the measures of outcomes discussed above such as number of recruits, education levels and unemployment of military recruits, and perceptions of the importance of national defense; T=1 for all time periods t after July 1, 2011; C=1 if person i is male and aged 17-19 at year t, that is, subject to the draft. Xit controls for other confounding factors that might influence Y_{it}. For outcomes using the German micro census, X_{it} include the unemployment rate in the state the respondent resides in, respondent's age and gender, survey year, etc. In the regressions using GGSS, X_{it} include age, gender, income, survey year, and whether i is employed in the public sector.

The parameter of interest is β_3, which is the average value of the change in Y after the draft suspension relative to before, among the German population subject to the draft compared to the population that was not. It is thus the difference in the difference (DiD) estimate of the effect of the end of conscription on various outcomes.

Results and Discussion

Table 3 reports the estimates of the effect of Germany's draft suspension on enlistment rates. The first column reports the β_3 or DiD estimates and coefficient estimates of the other regressors for the entire population, while the second column further restricts the analysis sample to ages 17-25. The data indicate the draft suspension caused an 8.33% decline in enlistment rates (or 0.002 decline in probability to enlist in column 1) among 17-19-year-old males compared to the control group. This significant decline in enlistment rates after the end of conscription is what we would expect given German manpower policy at the time and the Literature reviewed above Table 3.

Also, as expected, the treatment group of 17-19-year-old males are on average significantly more likely to enlist than the rest of the population, and even relative to young adults aged 20-25 (column 2 restricting the sample to young adults aged 17-25). Interestingly, the probability to enlist (again holding everything else constant) among the group targeted by the draft does not change significantly in the period before versus after Germany suspended conscription (column 2, coefficient on Post Draft).

Table 3 further shows some interesting patterns. Among young adults, all three categories of educational attainment significantly predict enlistment during 2010-2013. The local area's prevailing unemployment rates also significantly predict enlistment in the expected direction, as does one's lack of employment in the last 12 months. These patterns are consistent with prior literature in that in areas where unemployment is high, relatively more of its citizens choose to enter the military.

Turning now to the estimates on the effect of draft suspension on manpower quality, Table 4 reports results from a multinomial logit estimation of the probability of each education level among GAF recruits before versus after the end of conscription. Compared to enlisting with just a high school degree, the odds of a recruit having the higher secondary degree increased dramatically, by 2.17 times or 117% higher, in the post-draft era among 17-19-year-old males compared to the control group. The estimate shows the draft suspension caused GAF manpower quality, as measured by education qualifications, to more than double (Table 4).

Combined with the result of an overall decline in enlistment rates and the total force decline in Figure 1 during this period, these estimates indicate significant improvements in the quality of recruits into the GAF with the end of conscription. These results are consistent with the findings reviewed in Section II above, where the AVF changed USA military quality for the better (Figure 2).

Finally, Figure 2 illustrates the DiD estimates of the effect of draft suspension on perceived military importance that are also confirmed by the estimates in Table 5. These estimates show the decline in perceived importance of national security among the German population overall and especially among the population subject to a draft. This could indicate a steeper decline in demand for defense among the population previously subject to a draft, relative to the overall German population. This in turn suggests that those volunteering to enlist are particularly more motivated, since they are selecting or choosing to enlist even as the average German citizen has a lower demand for defense.

Concluding Remarks

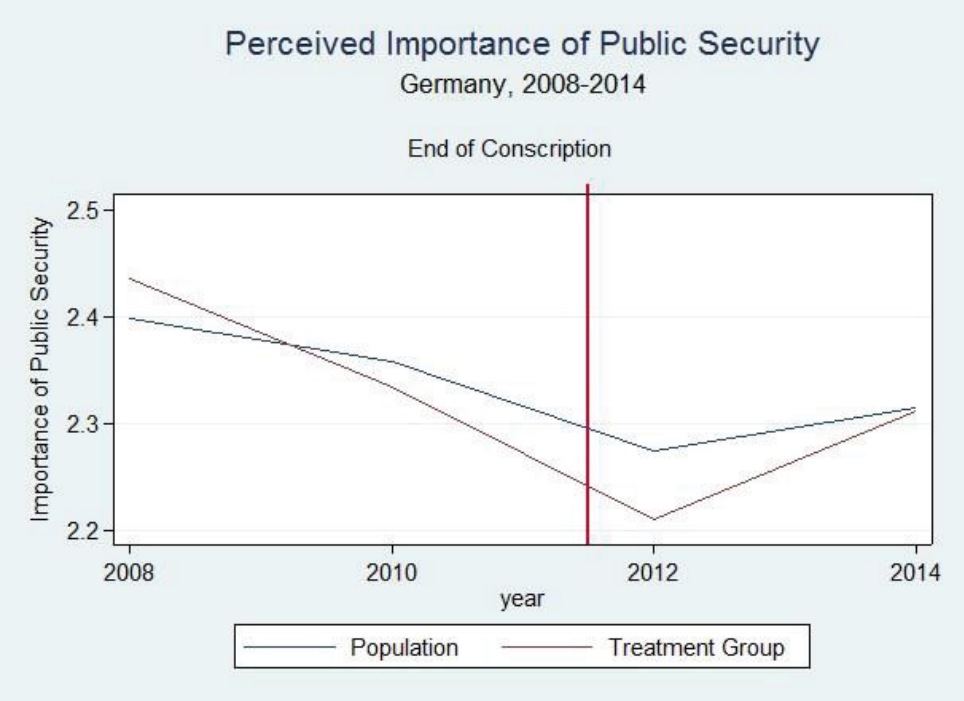
On July 1, 2011 Germany formally suspended the draft that had been in place since 1957, ending an era of its citizens in uniform. To date little research exists examining the impact of Germany's military

Variables	(1)	(2)
	All	Age 17-25
Post Draft (T)	0.0001*** (0.0000)	-0.0001 (0.0003)
Treatment (17-19yo male, C)	0.0011 *** (0.0003)	0.0028 *** (0.0004)
DiD (T × C)	-0.0024** (0.0010)	-0.0017** (0.0011)
Middle school degree	-0.0003*** (0.0000)	0.0029*** (0.0003)
High school degree	0.0003*** (0.0000)	0.0032*** (0.0003)
Secondary school degree	0.0001*** (0.0000)	0.0024*** (0.0002)
Unemployment rate	-0.0000*** (0.0000)	-0.0000*** (0.0000)
Unemployed 12 months ago	0.0001*** (0.0001)	0.0003*** (0.0000)
Female	-0.0005*** (0.0000)	-0.0042*** (0.0003)
Age	0.0000*** (0.0000)	-0.0005*** (0.0000)
R-squared	0.0012	0.0026
Observations	1,739,344	243,071
Note: Data are from the German Micro Census 2010-2013. Robust standard errors are in brackets, *** p<0.01, ** p<0.05, * p<0.1 Column (1) includes the population aged 17-65 years old, (2) includes the population 17-25 years old.		

Table 3: Probability to enlist in German armed forces.

Variables	Coefficient	Relative Risk
Secondary School		
Post Draft (T)	0.0067 (0.06389)	1.0067 (0.0635)
Treatment (17-19yo male, C)	0.3913** (0.1977)	1.4789** (0.2924)
DiD (T × C)	0.7754** (0.3896)	2.1715** (0.1794)
High School	base outcome	
Middle School		
Post Draft (T)	0.0751 (0.0823)	0.9277 (0.0764)
Treatment (17-19 yo male, C)	0.2344 (0.2480)	0.7910 (0.3135)
DiD (T × C)	0.0615 (0.4444)	0.9404 (0.4179)
Observations	5530	
Note: Data are from the German Micro Census 2010-2013. Robust standard errors are in brackets, *** p<0.01, ** p<0.05, * p<0.1		

Table 4: Education of recruits in GAF: Multinomial logit estimates.



Note. Data come from the 2008-2014 GGSS. The treatment group are 17-19-year-old males.

Figure 2: Perceived importance of national security among German population.

Variables	(1)	(2)
	All	Age 17-25
Post Draft (T)	-0.1419*** (0.0414)	-0.2206 (0.1360)
Treatment (17-19 yo male, C)	0.0703 (0.1487)	-0.0126 (0.1750)
DiD (T × C)	-0.1343 (0.1811)	-0.0740 (0.1928)
Age	-0.0012*** (0.0003)	0.0153 (0.0198)
Female	0.0704*** (0.0191)	-0.0761 (0.0703)
Income	0.0000** (0.0000)	0.0000 (0.0000)
Survey Year	-0.0001 (0.0096)	0.0136 (0.0328)
Employed in Public Sector	0.0079 (0.0290)	-0.0051 (0.1279)
Importance of Free Speech	-0.2783*** (0.0074)	-0.2030*** (0.0254)
R-squared	0.0818	0.0456
Observations	11843	1085
Note: Data are from the GGSS 2008-2014. Robust standard errors are in brackets, ***p<0.01, **p<0.05, *p<0.1 Column (1) includes the population aged 17-65 years old, (2) includes the population 17-25 years old.		

Table 5: Perceived Importance of National Security

draft suspension. This article fills this gap by employing data from the German Micro Census and the German General Social Surveys to estimate the causal effects of the switch to an All-Volunteer Force on the quantity and quality of German military recruits, as well as perceived demand for defense. Using a difference-in-differences empirical strategy, the authors find that while the perceived importance of national defense dropped, the average quality of military recruits significantly increased with the switch to AVF.

While the results of improved quality of German military recruits under the volunteer system is positive, Germany is also faced with unique challenges moving forward. With its decline in fertility and birth rates, there are fewer German youth to recruit from than in decades past. Analysis in this paper shows a decline in perception of the importance of defense. In addition, the Bundeswehr now competes with universities and apprenticeships for its military recruits.

As the Literature Review noted, a key reason the AVF was successful in the USA context was its focus on attracting quality recruits by expanding the benefits and opportunities of military service [8]. The compensation and programs required to entice recruits into the GAF—and have the most capable members re-enlist—will thus have to develop to keep attracting the right type and number of recruits in light of the population decline. Over time manpower planners can obtain analytical evidence to refine the set of programs, incentives, and benefits that encourage German enlistment that meets its security needs and functions.

Finally, by its empirical design this study covered only two years before and after the draft suspension. Given the changes in the German labor market and overall economy since then, it would be useful to further examine the dynamics in the quality of German military recruits.

Disclaimer

The views expressed in this paper are the authors' own and do not reflect the official policy or position of the USA Department of Defense or the German Navy. All errors are also our own.

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