

Politics and the implementation of public policy: The case of the US military housing allowance program

Scott E. Carrell · Janice A. Hauge

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Abstract Are bureaucracies in fact controlled by the president, Congress, or legislation? We analyze a 1998 policy change in the Department of Defense's (DoD) \$6.5 billion annual military housing allowance program. Results show that both the president and Congress were able to influence the bureaucracy, even in the presence of an exceedingly specific law that outlined the manner in which the DoD was to allocate the funds. After policy implementation, allowances were disproportionately higher in locations that (a) supported the president in the 1996 election and (b) were represented by members of the House or Senate Armed Services Committees.

Keywords Politics · Bureaucracy · Military compensation

JEL Classification D7

1 Introduction

There is a vast literature examining the role politics play in the design of federal spending legislation in the United States. However, studies have not resolved who actually controls the bureaucracies: the president, Congress, or legislation. Legislation passed in 1998 to adjust housing allowances paid to members of the military provides an opportunity to empirically test for political influences in the implementation of such legislation.

The Department of Defense's (DoD's) military housing allowance program policy change was part of the FY 1998 National Defense Authorization Act (NDAA), which stated

S.E. Carrell (✉)
Department of Economics, University of California, Davis and National Bureau of Economic Research,
One Shields Ave., Davis, CA 95616, USA
e-mail: secarrell@ucdavis.edu

J.A. Hauge
Department of Economics, University of North Texas, 1417 West Hickory Street, Denton, TX 76203,
USA
e-mail: jhaug@unt.edu

“the Secretary of Defense shall determine the costs of adequate housing in a military housing area in the United States for all members of the uniformed services entitled to a basic allowance for housing in that area. The Secretary shall base the determination upon the costs of adequate housing for civilians with comparable income levels in the same area” (NDAA 1998, p. 111, Sect. 603). The military housing allowance program encompasses approximately 374 military locations in the United States, among which housing allowances vary.

We track housing allowances by location over the six-year period from 1996 through 2001 to determine if the executive or legislative branches of government (i.e., the president and/or Congress) were able to exploit changes to the military housing allowance program in order to divert funding to their constituents. We find that both presidential and congressional politics played a role in the distribution of funds for the program analyzed. After policy implementation, allowances were disproportionately higher in locations that supported the president in his 1996 re-election bid and locations that were represented by members of the House or Senate Armed Services Committees. This finding is significant in that, even in the presence of an exceedingly specific law, both branches of government were able to exert control over the bureaucracy. As such, this work serves as a corroboration of prior studies showing the role of politics in policy implementation, and an empirical application of the literature examining political control over the bureaucracy.

Our research is distinctive in a number of ways. First, the DoD is a Cabinet-level (i.e., executive branch) agency that is authorized to implement the military housing allowance program. This allows us to focus on the role presidential and congressional politics played in the DoD’s implementation of that program. Second, the wording of the NDAA revising the military housing allowance program is exceedingly specific in indicating the manner in which the program was to be implemented. This allows us to provide an empirical test of the theoretical literature discussing the conditions under which discretion over policy implementation is expanded or alternatively limited. Third, our dataset includes a specific subset of the national population while still encompassing a broad category of demographic characteristics represented among military housing areas throughout the country. As such, we can analyze the precise effects of the portion of the NDAA addressing the military housing allowance program on the group of individuals the NDAA was designed to help. Additionally, the military service members on whom we focus, due to their transience, may not be the primary recipients of any fiscal “reward” bestowed by an elected official with an incentive to repay political debts. Our results therefore add to the literature on the theoretically unresolved incentive for politicians to repay votes already received.

Our paper proceeds as follows. Section 2 highlights the relevant literature that informs our research and to which our research contributes. Section 3 provides background information on the military housing allowance program examined, and on the NDAA that amended the program. Section 4 explains our data and the models used. Section 5 provides results, and Sect. 6 concludes.

2 Literature review

It is widely accepted that politics play a role in federal spending. As early as the 1960s, Arrington (1969) analyzed political influences on government programs. Many subsequent papers focused on congressional influences, both in the direction of prominent congressmen gaining advantages for their constituents (Anderson and Tollison 1991) and constituents exercising their power through voter turnout (Fleck 1999a). Executive branch politics also has been studied with respect to the allocation of funds across states. For instance, Garrett

and Sobel (2003) found that almost half of all federal disaster relief payments, an executive branch decision, reflects political intentions rather than need.

Methodology for these analyses has changed, improved, and been tested and retested; consider the numerous examinations of President Roosevelt's New Deal spending beginning with Arrington's 1969 work and including Wright (1974); Fishback et al. (2003); Fleck (1999b); and Wallis (1989); Couch and Shughart (1998); and, Chang et al. (2001) among others. These works shape the design of our current analysis. For example, Whicker and Giannatasio (1996) found that states with members on key House committees (i.e., Armed Services, Appropriations, and Budget) received more federal military appropriations and were less likely to experience base closings, which are a legislative branch decision (i.e., at the discretion of Congress). Atlas et al. (1995) showed that over-representation in the US Senate resulted in small states securing a significantly higher level of per capita federal net spending for their constituents. To capture in our model the potential effects of legislative branch influence, we include data on congressional representation in House and Senate committees that oversee the implementation of military programs.

We also take into account previous findings with respect to pressures exerted by political parties. For example, Levitt and Snyder (1995) showed that federal assistance program spending from 1984 to 1990 increased with congressional districts' Democratic vote share. They found that programs with formula-based funding allocations and with geographically concentrated distributions of benefits were skewed more heavily towards Democratic voters than programs without formulas and broadly dispersed benefits. They also found that congressional Democrats had little control in targeting specific demographic districts. Browning (1973) showed that congressional districts represented by a Democrat in 1970 were more likely to receive above-median levels of federal outlays than those represented by a Republican. Owens and Wade (1984) found a small positive effect on total district spending with increases in the 1978 congressional Democratic vote. As in these papers, we incorporate in our model controls for the political affiliations of congressional members.

Likewise, several studies have shown that parochial interests influence legislator voting on public policies, arguably a flip side to the above-mentioned phenomenon. For instance, Blonigen and Figlio (1998) demonstrated that members of Congress change their voting on trade bills based on the amount of foreign investment in their districts. Knight (2004) showed that legislator support for transportation bills is increasing in own-district spending.

Additionally, there are numerous studies that attempt to differentiate situations in which the executive or legislative branches chose to hand down specific as opposed to general policy guidelines and situations in which the bureaucracies (i.e., government agencies) were given authority to implement executive branch policies as opposed to enforcing new legislation. Research has shown that whether agencies are charged with implementing a general program or a carefully specified program depends upon the ultimate goal(s) of the president or Congress. Fiorina (1982) succinctly described the options for legislators and the agencies designated to implement proscribed policies as legal implementation versus administrative implementation. Further, he defined the type of policy put forth as command-and-control policy versus incentive-based policy. He asserted that when Congress delegates the power to design and implement policy (rather than passing specific legislation), less efficient policies are promulgated. Recognizing the importance of the conditions under which Congress might entrust policy-making to agencies, Fiorina and others have focused on defining a theoretical model of those conditions under which legislatures should rely on detailed legislation rather than leaving policy to the discretion of agencies that may have greater expertise in implementing those policies (Huber et al. 2001).

While agencies may have greater expertise, agency expertise does not explain the level of specificity in which laws are written (Shipan 2004). Rather, it is asserted that specific

guidelines for policies will be provided under two conditions: when the majority of interested parties (presidential and congressional) will be affected directly by the policy, and when the policy is expected to have a significant political reward (or loss). Many studies have addressed these issues theoretically (e.g., Calvert et al. 1989; Hammond and Knott 1996; Huber et al. 2001; Huber and Shipan 2002; Shipan 2004; and Carpenter 2004). Additionally, empirical tests of theories for delegation of discretionary authority have been undertaken by others (e.g., Carpenter 1996; Epstein and O'Halloran 1996; Balla 1998; and Potoski 1999). These studies considered the manner in which the president and congressional committees can exert control over agencies through the budgetary process, and also considered the effects of divided governments (i.e., a president of one political party and a Congress dominated by another political party) on policy outcomes. Our study adds to the current literature by focusing on a specific policy within the DoD, and by empirically testing whether presidential and congressional politics played a role in the implementation of the new military housing allowance program.

3 Background: the military housing allowance program

3.1 The military housing allowance program

Before 1998, service members received two separate housing allowances: Basic Allowance for Quarters (BAQ) and Variable Housing Allowance (VHA). The BAQ was a flat rate that varied by rank and number of dependents, but not by housing costs in the local area. It was adjusted annually in concert with military pay raises. The VHA varied by rank, number of dependents, and housing costs in the local area as determined by local housing surveys.¹ The year 1997 marked the final year that BAQ and VHA were paid to service members. These combined allowances ranged from \$362 to \$1,821 per month depending on rank and housing costs in the local area.²

The BAQ/VHA system encountered much criticism. First, annual increases in BAQ were tied to military pay raises, which lagged behind increases in housing costs. Over time, the intent of the program—to provide housing cost compensation to members of the military who lived off base—was being met to a continuously lesser extent. Second, there existed a “death spiral” in the VHA allowance. According to the DoD, “Low allowances forced members into inadequate housing, and they reported low-costs on the VHA survey, which, in turn, drove the allowances further down.”³ This typically occurred among lower military ranks. Conversely, the opposite effect is thought to have occurred among higher ranks. Those service members who could afford to pay for more expensive housing would report this expenditure on the local housing survey, thus causing an upward inflation of the allowances for that particular military rank. Finally, geographic inequity was a further problem with the BAQ/VHA system. Members of the same military rank living in different locations had a wide array of housing standards and (out-of-pocket) expenses depending on housing costs in the local area. Generally, allowances were thought inadequate to compensate for the higher

¹The DoD required service members to report the amounts they paid for housing on an annual basis.

²These figures are for service members with dependents in 1997 and represent the lowest and highest paid person/rank across all locations. The DoD paid \$361.50 per month to the lowest ranking enlisted member (an airman) living in Altus, OK, and \$1,821.21 per month to the highest-ranking member (a general officer) living in New York, NY.

³From BAH FAQs (Defense Technical Information Society 2001).

cost of housing found in some locations. For these reasons, the DoD decided to overhaul the housing allowance system.

In 1998, the National Defense Authorization Act mandated that the DoD implement a new housing allowance system called Basic Allowance for Housing (BAH). Like the BAQ/VHA system, BAH varies by location, rank, and number of dependents. Unlike the old system, BAH is not tied to pay raises or housing surveys. Instead, the DoD computes allowances using local rental housing costs that include rent, utility, and insurance prices in each military housing area (MHA).⁴ Median costs for all types of housing are used to compute a rank-specific housing cost for each location.⁵

In order to help ensure housing allowance equity regardless of the service member's location of assignment, under the BAH the DoD computes a rank-specific out-of-pocket expense using the national median housing cost for each rank.⁶ For example, in 2004, the out-of-pocket expense for an Air Force staff sergeant (military pay-rank E-5) with dependents was \$154 per month. The DoD's goal was that all military of equal pay-rank (i.e., all E-5s) would pay \$154 per month out-of-pocket for an adequate two-bedroom townhouse/duplex regardless of geographic location.

The new methodology appears to have many advantages over the old BAQ/VHA system. First, BAH should eliminate the "death spiral" and high-rank bias by taking out the effect of service members' housing choices. Second, the new system should eliminate the creeping growth in out-of-pocket costs to service members because housing allowances are no longer tied to military pay raises and are based solely on local rental housing costs. Finally, the BAH system should create geographic and pay grade equity. Because allowances are computed using actual pricing data, service members of the same rank should be able to live in comparable housing regardless of where they are stationed.

Upon implementation of the BAH, drastic changes in allowances in many areas (along with funding constraints), led Congress to recommend the BAH be phased in over a six-year period. According to the DoD, "Transition methodology was designed to strike a careful balance; gradually increasing allowances in the locations where rates were higher, without the need to decrease payments to individuals in locations where BAH allowances were lower than they were in 1998."⁷ However, in fiscal year 2000, Congress decided to speed the transition from six to three years, with implementation nearly complete in January 2000.⁸

When the DoD implemented the 2000 allowances, there were many changes, both positive and negative. The reduced allowances in some areas caused outrage. Complaints were forwarded to DoD officials. As a result, in March 2000, rates were restored to the higher of

⁴MHA is a location for which housing allowances are computed. These areas have a high concentration of military personnel assigned or are in a major metropolitan area.

⁵The DoD contracted data collection to Runzheimer, International. Rental data are collected from newspapers, real estate agencies, and base housing offices. Median housing costs are computed in each location for one and two-bedroom apartments; two- and three-bedroom townhouses/duplexes; and, three- and four-bedroom single-family homes. These median housing costs are tied to specific ranks (e.g., two-bedroom townhouse/duplex to E-6 technical sergeant, where E-6 refers to the military pay grade). Housing standards are based on minimum standards for civilian counterparts of the same salary. Local median housing costs for the other pay grades are determined using a nonlinear mathematical model.

⁶For more information on housing allowance computations see the Office of the Secretary of Defense Military Compensation website, available at: <http://www.defenselink.mil/militarypay/pay/bah/>.

⁷From BAH FAQs (Defense Technical Information Society 2001).

⁸It is unclear why Congress speeded the transition. Presumably the wish to complete what was viewed as an important and positive policy change was the primary driving factor.

the 1999 or 2000 allowance. This action caused a “truncation” of the BAH policy by not allowing negative changes to allowances after 1999.

Two considerations are of note. First, the magnitude of the military housing allowance program is significant, especially in locations where the military population comprises a substantial proportion of the overall population. For example, in FY 2000, housing allowance payments were approximately \$160 million in Fayetteville, NC, where the active duty military population of over 29,000 accounts for nearly 10% of the population.⁹ Consequently, we assert that the program (which expends roughly \$6.5 billion per year) is large enough to be perceived as a significant source of potential benefit to politicians and their constituents.

Second, the direct beneficiaries of the military housing allowance program are military members and rental property owners: the degree to which each benefits depends on the elasticity of the housing supply. If the housing supply is inelastic, increasing the housing allowance means that military personnel have more income to spend on limited rental property; therefore, owners of rental property benefit. Conversely, if the housing supply is elastic, military members benefit. One could argue that if the primary beneficiaries of an increased allowance are the military members, the president would have little incentive to influence allowances because a majority of military members relocate every two to three years¹⁰ and often do not vote in the district in which they currently reside but rather vote by absentee ballot from their permanent homes. However, when allowances increase, the local economies surrounding military bases benefit through increased expenditures in the community (by either the military members or the rental property owners). Given the frequency with which members of the military move, we assume the primary beneficiaries of the allowance adjustment, in the politicians’ views, are the local economies.

3.2 The National Defense Authorization Act of Fiscal Year 1998

The prior section highlights the primary changes from the BAQ/VHA to the BAH and the rationale for those changes. While Sect. 3.1 provides essential information on amendments to housing allowance rates and the time frame for implementation of those new rates, it does not include specific information regarding the NDAA itself. This is a key factor for our analysis. The following observation from Huber and Shipan (2002, p. 33) clarifies the importance of the manner in which the DoD implemented the BAH.

The president enjoys substantial opportunities to influence policy implementation. The executive agencies are constitutionally enshrined under the president’s purview. The president has substantial powers to appoint the senior leadership of the executive agencies (McCarty and Razaghian 1999). And presidents can issue executive orders to instruct agencies on how to implement policy. This presidential influence over bureaucrats creates incentives for Congress to use the language of legislation to constrain the types of actions that bureaucrats take.

⁹Figures computed using Office of Secretary of Defense military personnel statistics and local housing office data from Ft. Bragg Army Post, NC and Pope AFB, NC for rank, marital status, and number of personnel living on-base/post. In general, the military population ranges from 26% in Norfolk City, VA, to less than 1% (for example in Berkshire County, MA). Housing payments vary accordingly.

¹⁰Actual time-on-station statistics for military personnel were unavailable; however, personnel typically relocate every two to three years. Individual statistics support this assertion. For example, in April of 2002, only 44% of all Air Force enlisted personnel stationed in the continental US had more than three years time-on-station.

Section 603 of the National Defense Authorization Act of 1998 is titled “Consolidation of Basic Allowance for Quarters, Variable Housing Allowance, and Overseas Housing Allowances.” This section of the law is approximately 4,500 words (roughly 14 pages) long. Clearly, both the executive branch and Congress intended for this policy to be implemented in a precise manner. Although the act was very specific, the language gave the Secretary of Defense the ability to shift resources. For example, while the following subsection of the 1998 act is written precisely, the discretion allowed is clear.

Subject to paragraph (3), the monthly amount of a basic allowance for housing for an area of the United States for a member of a uniformed service is equal to the difference between—(A) the monthly cost of adequate housing in that area, *as determined by the Secretary of Defense*, for members of the uniformed services serving in the same pay grade and with the same dependency status as the member; and (B) 15 percent of the national average monthly cost of adequate housing in the United States, *as determined by the Secretary*, for members of the uniformed services. . .¹¹

Recall, as explained in Fiorina (1982), that legislation is more likely to be precise when most parties with a vested interest benefit from the proposed legislation. If few benefits are anticipated, legislators have little incentive to be associated with the new policy and, therefore, will shift credit (and potentially blame) to the agency responsible for implementation. Additionally, research has suggested that as politicians become more vested in the policy goal, their efforts with respect to specification of policy details intensify in order to decrease uncertainty regarding the outcome (Calvert et al. 1989). In the case of the military housing allowance program, if the president or members of Congress did not view the policy change as beneficial to them, the NDAA might have stated simply that housing allowances should be adequate for all military personnel. Such an open directive would have given the DoD the latitude to employ an alternative method. Lastly, a more clearly specified policy has the advantage of transparency so that any potentially negative repercussions from its execution might be rebuffed easily.

3.3 The Department of Defense budgetary process

The DoD budgetary process lends itself to political manipulation, particularly by the executive branch and key members of the DoD appropriation committees (i.e., the House and Senate Armed Services Committees and Appropriations Committees). The annual defense budget process is initiated by the president’s budget request, which is prepared primarily by the White House with the guidance of the Department of Defense. The budget request then is reviewed and revised by the Office of Management and Budget, another executive branch agency. The president then submits the budget to Congress. The House and Senate Armed Services Committees authorize funding for specific programs and the appropriations committees approve expenditures. Congress ultimately is charged with voting the budget into law prior to the start of the new fiscal year on October 1st (CSBA 2008).

4 Data and methodology

We focus on an empirical test of the hypothesis that both the executive branch (through the Department of Defense) and Congress (in passing the 1998 act) influenced the policy in question to benefit their constituencies.

¹¹The National Defense Authorization Act of 1998 Sect. 603 1998, p. 13.

To analyze the 1998 DoD policy change, we compiled a six-year time-series-cross-section dataset that includes military specific data, political data, and demographic data for all US military housing areas for the years 1996 through 2001. We empirically test whether implementation of the BAH was affected by presidential and/or congressional power after controlling for other demographic and military specific factors that could have driven changes in allowances. The model and the data employed are fully described below.

4.1 The model

We construct our model using a panel of housing allowance observations for approximately 374 military housing areas and 13 military ranks from 1996 through 2001, giving us 26,182 total observations. Data include housing allowances for service members with dependents (highly correlated with those for members without dependents) for ranks E-4 through E-9 (Air Force senior airman through chief master sergeant) and O-1 through O-7 (Air Force second lieutenant through brigadier general).¹²

Employing this dataset, our research design is to analyze housing allowances as an interrupted time series with the 1998 policy change as the treatment. Our null hypothesis is that housing allowances are unaffected by presidential and congressional electoral politics in a fully equitable distribution of DoD housing allowance dollars. To test this hypothesis, we estimate a series of fixed effect regressions in which the dependent variable is the natural log of the housing allowance (*BAH*), and the key independent variables of interest are the interaction between the policy change variable and presidential and congressional political variables. The fixed effects specification is given in (1), where *i* indicates military housing area, *r* is the military rank, *t* indicates year, and *BAH* is the basic allowance for housing.

$$\ln BAH_{irt} = b_1 + Policy_t b_2 + X_{irt} b_3 + Policy_t X_{irt} b_4 + e_{irt} \quad (1)$$

Policy is an indicator variable for full implementation of the new housing allowance policy that takes the value of one for years 2000 and 2001 and zero otherwise. b_2 represents the growth in BAH in the period 2000 to 2001 (after full implementation of the policy) versus 1996 to 1999. X_{irt} is a matrix of explanatory variables, described in detail below, which includes characteristics of the military population, military housing area-specific measures, and measures of the political environment, both presidential and congressional. Some elements of X_{irt} , such as yearly fair market rent are entered in logarithms, while binary and categorical data, such as demographic characteristics, are not. Elements of b_3 corresponding to logarithmic values can be interpreted as an elasticity of BAH with respect to the relevant explanatory variable in the base period of 1996 to 1999. Elements of b_3 corresponding to binary explanatory variables represent deviations in the intercept during the period 1996 to 1999 for the variable in question.

Elements of b_4 represent deviations from b_3 observed in 2000 to 2001, after full implementation of the policy. As we are interested in identifying the causal effects of politics on the implementation of the policy, the primary parameters of interest are the interactions between the political variables and the *Policy* variable. However, we also interact the non-political variables with the *Policy* variable to control for changes in housing allowances that *should* have occurred with the policy implementation (e.g., housing allowances were expected to rise in high-cost areas). If any of these nonpolitical X covariates are correlated with the political variables and are subsequently omitted from the regression, our estimates

¹²Ranks E-1 through E-3 had identical allowances as those for E-4 after 1998, so those ranks were omitted.

of the post-policy political variables will be biased. The direction of the bias depends on whether the correlation is positive or negative.¹³

Our model includes rank-specific and location-specific fixed effects to control for all unobserved time-invariant differences at each location. We weight each observation by the number of military personnel assigned to each location (*Military Population*); the number ranged from 17 in Pittsfield, MA, to over 60,000 in Norfolk, VA.¹⁴ As housing allowance dollars are matched with individual service members assigned to each location, we assign greater weights to locations with larger numbers of personnel. We correct all standard errors to reflect clustering at the location level.

4.2 Matrix of explanatory variables

The matrix X_{it} of exogenous variables includes military housing area-level measures that are expected to impact the housing allowance amount. The explanatory variables can be divided into three categories: characteristics of the military population; military housing area-specific measures; and measures of the political environment, which we explain below. Table 1 shows summary statistics.

Based on the manner in which housing allowances are computed, we expect characteristics of the military population to influence the housing allowance rate. Because a goal of the policy is pay grade equity, we expect greater increases in allowances at lower ranks. In other words, we assume that the housing allowance policy is developed to increase the pay of lower ranking service members proportionally more than upper ranking service members.¹⁵ Therefore, we anticipate the indicator for officer housing allowances (*Officer*) to be negative.¹⁶ We also include dummy variables representing the predominant branch of service in the location (*Air Force*, *Army*, *Coast Guard*, *Marine Corps*, and *Navy*), although we cannot suggest an anticipated effect based on service branch.

The second category of explanatory variables includes military housing area-specific demographic characteristics that are expected to influence the housing allowance rate. Note that these measures reflect the distribution of characteristics within the entire population, not just among the military population. Some of these measures vary by area and by year. Other measures are constant over time and represent the year 2000. A key variable is a measure of rental housing costs in the geographic location. We include the natural logarithm of the yearly fair market rent (*Fair Market Rent*) for a two-bedroom apartment, as established by the US Department of Housing and Urban Development.¹⁷ Fair market rents are the pricing standards used in determining eligibility of housing units for federal housing assistance programs; the current definition is the 40th percentile rent for each location (US Department

¹³In results not shown (available from the authors), when excluding the interaction terms between the policy variable and the nonpolitical covariates, the magnitude of the post-policy political variables are, in general, substantially larger than those presented in Table 2.

¹⁴Eleven of the 374 locations have missing data for this variable; therefore, those 11 observations were dropped.

¹⁵This also would be reflected by the March 2000 restoration of rates to the higher of the 1999 or 2000 allowance.

¹⁶According to the DoD, “Basic Allowance for Housing eliminates both these low-end and high-end biases” of lower ranks being forced into inadequate housing (primarily enlisted) and higher ranks into higher quality housing (primarily officers).

¹⁷If the MHA is located in a metropolitan statistical area (MSA), the fair market rent for this MSA was used. If the MHA was not located in a MSA, then the fair market rent for the corresponding county was used.

Table 1 Summary statistics

Variable name	Variable description	Obs.	Mean	Std. dev.	Min	Max
Basic Allowance for Housing (BAH) Policy	Log of Basic Allowance for Housing	26,546	6.681	0.310	5.964	7.9980
	Binary variable indicating policy in effect 2000, 2001	26,546	0.360	0.480	0	1
Military Population	The number of military personnel in thousands	26,182	2.167	5.553	0.017	60.018
Officer	Dummy for officer rank	26,546	0.538	0.499	0	1
Air Force	Predominant branch of service is Air Force (dummy)	26,182	0.206	0.404	0	1
Army	Predominant branch of service is Army (dummy)	26,182	0.556	0.497	0	1
Coast Guard	Predominant branch of service is Coast Guard (dummy)	26,182	0.089	0.285	0	1
Marine Corps	Predominant branch of service is Marine Corp (dummy)	26,182	0.027	0.162	0	1
Navy	Predominant branch of service is Navy (dummy)	26,182	0.115	0.319	0	1
Fair Market Rent	Log of the Fair Market Rent for a two bedroom apartment	26,546	6.309	0.234	5.838	7.286
Population	Log of the population in millions	26,546	(1.356)	1.337	(4.811)	3.062
Percent Urban	Percent of population in an urban area	25,649	0.800	0.182	0	1
White	Percent of population that is white	25,649	0.765	0.155	0.165	0.984
Income	Median income in thousands	25,649	40.600	8.588	25.005	74.335
Percent Different House	Percent of children over five living in a different house in 1995	25,649	0.452	0.063	0.268	0.630
Percent Rent	Percent of renter occupied housing	25,649	0.318	0.083	0.104	0.739
Apartment Stock	Per capita stock of rental apartments	25,649	0.129	0.057	0.010	0.437
Percent Built	Percent of housing built year 2000 or after	25,649	0.023	0.012	0	0.110
Democratic Governor	Binary variable indicating democratic state governor	26,546	0.372	0.483	0	1
Republican Representative	Binary variable indicating a 1998 Republican representative	26,546	0.527	0.470	0	1

Table 1 (Continued)

Variable name	Variable description	Obs.	Mean	Std. dev.	Min	Max
House Armed Services	Binary variable indicating member on 1998 House Armed Services Committee	26,546	0.242	0.428	0	1
Senate Armed Services	Binary variable indicating member on Senate Armed Services Committee	26,546	0.348	0.476	0	1
Turnout	State-level voter turnout in the 1996 election	26,546	0.497	0.058	0.380	0.640
Electoral Importance	Measure of Presidential electoral importance	26,546	13.860	11.893	0	42.843
Clinton vote share	Log of President Clinton's 1996 vote share	26,546	3.818	0.187	2.929	4.445

of Housing and Urban Development 2001). If BAH fully adjusted for local variations in rental housing costs, we would expect the elasticity of BAH with respect to fair market rent to be one.¹⁸

In addition to the number of military personnel, the natural logarithm of the total local population (*Population*) is included to estimate the extent to which housing allowances adjusted to a 1% increase in the local area population. Population may have a significantly positive influence on allowances due to the methodology of the DoD's data collection process. First, in highly populated areas, it is easier to identify locations where military personnel reside and to eliminate substandard housing not suitable for military members. Sectoring off substandard housing areas is a relatively easy task because suitable and unsuitable housing subdivisions typically are located in relatively defined areas.¹⁹ Therefore, those living in more highly populated areas should not need a large adjustment. Conversely, eliminating unsuitable housing from areas with relatively small populations is a dubious and sometimes impossible task. Housing standards in rural areas can vary greatly within limited proximity, which may allow unsuitable rental properties to be included in the data, thus causing a negative bias.²⁰

Further demographic characteristics of the areas also were included. We expect the percentage of the population in an urban area (*Percent Urban*) to be significant, as urban areas are typically more costly; therefore, the BAH should be higher. We account for the percentage of the population that is White (*White*), although we cannot hypothesize an expected

¹⁸Fair market rents are used rather than median housing values because rental price is the basis for computing housing allowances. For locations where data existed for both fair market rent and median housing price, the correlation is .842. We conducted analyses for the subset of areas with median housing price data and the results did not change appreciably.

¹⁹The DoD's policy is to collect data from zip codes where 0.842 of military members reside within a MHA.

²⁰A positive bias might also exist, but this is highly unlikely as large, expensive homes above military standards are typically not available for rent. The negative bias was found to exist in the data used to compute the 2000 allowances at Seymour Johnson AFB located in Goldsboro, NC, with a county population of 113,000. A more extensive study is needed to verify if this was a widely observed pattern within other rural MHAs.

Table 2 Effects of local and political factors on the policy implementation

Variable	1	2	3	4
Policy	0.071*** (0.010)	-1.115*** (0.220)	-1.029*** (0.228)	Dropped
Fair Market Rent	0.716*** (0.044)	0.474*** (0.052)	0.618*** (0.101)	0.525*** (0.114)
Fair Market Rent * Policy	0.716*** (0.044)	0.143*** (0.033)	0.126*** (0.034)	0.236*** (0.038)
Population		0.009 (0.006)	0.365* (0.192)	0.657*** (0.202)
Population * Policy		0.005 (0.005)	0.004 (0.005)	0.002 (0.004)
Officer		0.273*** (0.008)	NA	NA
Officer * Policy		-0.038*** (0.005)	-0.038*** (0.005)	-0.038*** (0.005)
Army		-0.016 (0.011)	NA	NA
Army * Policy		-0.007 (0.013)	-0.010 (0.014)	-0.005 (0.012)
Marine Corps		-0.035 (0.023)	NA	NA
Marine Corps * Policy		0.004 (0.025)	0.007 (0.028)	0.006 (0.025)
Air Force		-0.008 (0.013)	NA	NA
Air Force * Policy		0.008 (0.012)	0.006 (0.012)	0.007 (0.010)
Coast Guard		0.055*** (0.018)	NA	NA
Coast Guard * Policy		-0.045* (0.026)	-0.040 (0.029)	-0.058** (0.023)
Other DoD		-0.012 (0.024)	NA	NA
Other DoD * Policy		-0.068*** (0.017)	-0.062*** (0.019)	-0.028 (0.025)
Percent Urban		-0.089* (0.048)	NA	NA

Table 2 (Continued)

Variable	1	2	3	4
Percent Urban * Policy		−0.023 (0.037)	−0.007 (0.039)	0.0001 (0.043)
Percent White		0.061 (0.075)	NA	NA
Percent White * Policy		0.078 (0.048)	0.066 (0.048)	0.249*** (0.049)
Apartment Stock		−0.385*** (0.086)	NA	NA
Apartment Stock * Policy		0.099** (0.046)	0.099** (0.048)	0.084** (0.041)
Percent Rent		0.225 (0.174)	NA	NA
Percent Rent * Policy		0.355*** (0.093)	0.403*** (0.098)	0.541*** (0.118)
Income		0.004*** (0.001)	NA	NA
Income * Policy		0.0003 (0.001)	0.0005 (0.001)	−0.001 (0.001)
Percent Built		−0.365 (0.687)	NA	NA
Percent Built * Policy		1.255*** (0.520)	0.882 (0.556)	0.461 (0.605)
Children Over Five in a Different House		−0.149 (0.174)	NA	NA
Children Over Five in a Different House * Policy		−0.514*** (0.124)	−0.592*** (0.119)	−0.546*** (0.121)
Clinton vote share		0.040 (0.034)	NA	NA
Clinton vote share * Policy		0.071*** (0.026)	0.088*** (0.027)	0.042 (0.028)
Republican Representative		−0.018 (0.012)	NA	NA
Republican Representative * Policy		0.023** (0.010)	0.029** (0.011)	0.006 (0.012)
House Armed Services		0.012 (0.009)	NA	NA

Table 2 (Continued)

Variable	1	2	3	4
House Armed Services * Policy		0.015 (0.010)	0.016 (0.010)	0.024** (0.010)
Senate Armed Services * Policy		0.021** (0.009)	0.018* (0.010)	NA
Democratic Governor		0.003 (0.006)	0.002 (0.007)	NA
Democratic Governor * Policy		0.034*** (0.012)	0.033*** (0.012)	NA
Electoral Importance * Policy		0.0002 (0.001)	−0.0001 (0.001)	NA
Turnout * Policy		−0.018 (0.140)	−0.030 (0.140)	NA
R-Sqr	0.9262	0.9448	0.9753	0.9777
Observations	26,182	25,324	25,324	25,324
Rank and State Fixed Effects	Yes	Yes	No	No
Location by Rank Fixed Effect	No	No	Yes	Yes
State by Policy Fixed Effects	No	No	No	Yes
Clinton Vote Share Effect ¹	NA	1.328*** (0.481)	1.645*** (0.502)	0.789 (0.527)

¹The Clinton Vote Share Effect is evaluated for a 1-std deviation from the mean increase in the percent Democratic vote

Notes: The dependent variable in all specifications is the log of the housing allowance (i.e., *BAH*). All specifications include analytic weights by the military population for each location. Robust standard errors are clustered by location. *Significant at the 0.10 level, **Significant at the 0.05 level, ***Significant at the 0.01 level. The main effects are not estimated for the *Senate Armed Services*, *Electoral Importance*, and *Turnout* variables as there is no within state variation in these variables. Thus, only the interaction term can be empirically estimated

relationship. We include the median income level (*Income*) and expect the BAH to vary positively with *Income* due to the manner in which higher income drives up rental rates. We also include the percentage of children who are over five living in a house other than their first residence (*Percent Different House*). This variable serves as a measure of transience for potential beneficiaries of the program. We would expect a more transient population to encourage less political “pay back;” therefore, we expect a negative relationship between *BAH* and *Percent Different House*. Finally, we include measures specific to the housing environment including the percentage of renter-occupied housing units as opposed to owner-occupied housing units (*Percent Rent*), the per capita stock of rental apartments (*Apartment Stock*),²¹ and the percentage of homes built after the year 2000 (*Percent Built*). We expect apartment stock to be negatively correlated with the BAH, as fewer rental units available

²¹This variable is computed by dividing the number of apartments (two, three, and four bedroom) by the local population and is computed for each rank based on the DoD’s housing standard. For example, the housing

should be reflected in higher prices for those units. We do not predict signs of the other housing environment variables.

In the third category, measures of the political environment, we employ a series of variables measuring political influence within the military housing area. Specifically, we include an indicator variable equal to one if the governor of the state in which the military housing area is located is a Democrat (*Democratic Governor*); if political influence is a factor, we would expect this sign to be positive for Democratic governors given Democratic control of the executive branch during the policy implementation period. Also, we expect a positive coefficient based on the anticipated benefits to a Democratic governor's constituents; such anticipated benefits may have been large given the NDAA's precise wording. We include indicator variables for locations with a Republican representative in 1998 (*Republican Representative*) as the Republican Party was the majority party during the passing of the legislation. We further take into account whether the location had a representative on the 1998 House Armed Services Committee (*House Armed Services*), or Senate Armed Services Committee (*Senate Armed Services*); we presuppose this sign to be positive as these politicians serve their constituents, and the theoretical literature on discretionary authority supports this position. To capture presidential electoral importance, we incorporate the variable (*Electoral Importance*), which is derived in the same manner as the electoral importance variable used by Garrett and Sobel (2003);²² by this methodology, battleground states with large numbers of electoral votes have the most weight. Voter turnout (*Turnout*) by state is included, as we expect states with a higher turnout to receive greater increases in allowances. Lastly, we include the vote share for President Clinton in the 1996 presidential election (*Clinton Vote Share*);²³ if political pressure by the executive branch is a factor, and the degree to which the 1998 act is specified reflects political influence and a high level of care, the estimated effect should be positive.

5 Results

We report four specifications using a standard fixed effects regression model as indicated in Sect. 4 above. We begin by analyzing the overall effects of implementation of the BAH in Specification 1 by simply including the *Policy* variable and *Fair Market Rent* while excluding the interaction terms that are at the heart of the analysis. The positive and significant result for the *Policy* variable (0.071) is expected as allowances were not adjusted downward and the DoD added funds to the military housing allowance program. The magnitude of the coefficient on the *Policy* variable indicates that housing allowances increased, on average, 7.1% after full implementation of the policy, while controlling for changes in local rental prices.²⁴ Similarly, we find that *Fair Market Rent* is positive and significant. This result in-

standard for an E-4 is a two-bedroom apartment, so the variable is computed by dividing the number of two-bedroom apartments by the population.

²²The variable is computed by multiplying the state's number of electoral votes by a weighting factor, $W = 1 - 4(E - 0.5)^2$, where E is the percentage of presidential elections won by a Democrat from 1976 to 1996. Thus, states with a 50% historical winning percentage receive an importance equal to the number of electoral votes, whereas those with a 0% or 100% winning percentage receive zero importance.

²³The Clinton vote share was obtained from Hall and Gaquin (1997). The 1996 election was chosen because the policy change was adopted and implemented following this election.

²⁴We also tested our model including separate policy variables for the years during partial BAH implementation (1998–1999) and years after full implementation (2000–2001). These results indicate that compared to

dicates that over the six-year period of our data, housing allowances increased, on average, 0.72% with a 1% increase in *Fair Market Rent*.

Specifications 2 through 4 add the interaction terms with the *Policy* variable and the matrix of X_{irt} explanatory variables to determine whether the policy change differentially affected any particular group over another. We sequentially add a series of fixed effects to the model to test the robustness of the results. Specification 2 includes rank and state fixed effects, while Specification 3 includes a rank-specific, location-specific fixed effect. Finally, in Specification 4, we control for a set of state-time interactions. Specification 4, therefore, identifies the estimated effect of the policy implementation using solely within-state variation in the variables.

From our first set of explanatory variables measuring the military population's characteristics at each location, we find statistically significant coefficients for the *Officer* variable (0.273) and for the interaction of *Policy* with *Officer* (−0.038). These results indicate that officer housing allowances were 27% higher prior to the policy implementation; the policy had the intended effect of increasing the housing allowance proportionally more (3.8%) for the lower ranking enlisted members.

The results for the second category of variables accounting for military housing area-level demographic characteristics are similarly strong. For Specification 2, the positive and significant coefficient for the *Fair Market Rent* variable (0.474) indicates that prior to the policy implementation, housing allowances increased 0.47% with a 1% increase in the *Fair Market Rent*. We find that the interaction between *Policy* and *Fair Market Rent* is positive and highly significant in all specifications. These results indicate that communities with higher rental prices benefited more, in percentage terms, from the policy change than communities with lower rental prices, providing evidence of correcting the “death spiral” of allowances in high-cost areas.

Additionally, the *Policy* interactions with *Apartment Stock* and *Percent Rent* are positive and significant, and the interaction between *Policy* and *Percent Different House* is negative and significant across all specifications. That is, areas with a more transient population received lower housing allowance increases, all else equal. This result suggests that politicians may be less inclined to “repay” votes to constituents who may no longer be in the area to receive such repayment. Results for the interaction variables for *White* and *Percent Built* are positive but not statistically significant across all specifications.

Lastly, we provide results for variables in the final category; these variables measure the importance of the political environment. In Specification 2, the coefficients for the (noninteracted) political variables are all statistically insignificant with no dominant sign. These results indicate that politics played virtually no role in the determination of housing allowances *prior* to the policy change. This result is not surprising because prior to the policy change one component of housing allowances (BAQ) was fixed across locations and the variable component (VHA) was determined by members' previous years' expenditure on housing. Thus, prior to the policy change, the methodology that determined housing allowances across locations allowed for little discretion in manipulating allowances.

To examine how politics affected policy implementation, we again examine the interaction terms between the *Policy* variable with each political explanatory variable. In Specifications 2 and 3, the positive and significant results for the *Policy* interactions with *Clinton Vote*

pre-implementation (1996–1997), changes in housing allowances during BAH implementation (1998–1999) were statistically insignificant, but positive and significant after full implementation (2000–2001). Hence, the significant changes in allowances occurred after full implementation. The remainder of the paper employs models similar to Specification 1 for ease of exposition; however, all results reported herein remain robust to the inclusion of “during-implementation” dummy variables (and interactions) as well.

Share, *Republican Representative*, *Senate Armed Services*, and *Governor* variables provide strong evidence that politics played an important role in the distribution of the military housing allowance program funds. The magnitude of the coefficient for the *Clinton Vote Share* variable (0.088) in Specification 3 implies that presidential politics were indeed a factor in the implementation of the policy. The model estimates that a 1% increase in President Clinton's vote share increased housing allowances 0.09% post implementation. Additionally, results in Specification 3 indicate that locations with a *Republican Representative*, *Senate Armed Services* committee member, and *Democratic Governor* received a 2.3%, 2.1%, and 3.4% increase in allowances, respectively, all else equal.

In Specification 4, we repeat this exercise controlling for a set of state-time interactions that identify the estimated effect of politics on policy implementation using within-state variation in the political variables.²⁵ Again, we find a positive coefficient for the *Clinton Vote Share* (0.042); however, the parameter is outside conventional levels of significance ($p = 0.135$). Additionally, the positive and significant result for the *House Armed Services* variable (0.024) indicates that areas with a representative on this committee received a 2.4% increase in housing allowances with the implementation of the policy. That is, even in this highly parameterized model, the communities that benefited the most in the implementation of the BAH were precisely those who most supported the president's re-election bid and were represented by a member of the House Armed Services Committee. Given the detail of the legislation passed, we assert that our results support the theoretical literature that contends politicians expend greater effort in designing legislation when the personal stakes are higher and when there is an expected political gain (Fiorina 1982 and Calvert et al. 1989). More recent studies that incorporate the possibility that detailed legislation is designed to limit agency discretion during a divided government (for example Huber et al. 2001) also are supported by these results (given a Democratic president and a Republican Congress).

While our results appear consistent with our hypotheses, we conducted further analyses to account for potential variations in the data. For example, political factors may have different effects depending on the size of the community. Specifically, one might expect, in light of the preceding results, that the presidential effects would be larger in larger metropolitan areas in which Democratic support is more concentrated. To test this possibility, we include a three-way interaction between the *Clinton Vote Share*, *Population*, and the *Policy* implementation variable, as well as all relevant two-way interactions. Results of these specifications are presented in Table 3. For brevity, we include only the results for the political variables of interest. The positive, significant coefficient on the three-way interaction implies that while political factors apparently played a large role in determining housing allowances even in small geographic areas, these political factors played an even greater role in determining housing allowances in larger geographic areas post-implementation. These results indicate that large metropolitan areas where housing allowances are costly would have fared worse under the BAH but for the fact that they tend to be strongly Democratic. Specification 2 in Table 3, using solely within-state variation in the data, yields qualitatively similar results.

To more directly assess whether the apparent political influences in policy implementation are stronger in more expensive locations, we repeated the preceding exercise, replacing *Population* with a measure of local housing costs. Specifically, Specifications 3 and 4 in Table 3 include the three-way interaction between *Policy* implementation, *Clinton Vote Share*, and *Fair Market Rent*, as well as controls for all two-way interactions between these variables. Again, we observe a positive and significant three-way interaction, indicating that the

²⁵Senate districts and governors coincide with state lines and, therefore, cannot be estimated using our model with state-time interactions.

Table 3 Differential effects of presidential politics on policy implementation

Variable	1	2	3	4
Clinton vote share * Policy	0.176*** (0.035)	0.093* (0.053)	-1.245** (0.549)	-1.501 (1.038)
Republican Representative * Policy	0.030*** (0.011)	0.001 (0.010)	0.022** (0.011)	-0.002 (0.010)
House Armed Services * Policy	0.019** (0.009)	0.025*** (0.008)	0.018* (0.009)	0.027*** (0.008)
Senate Armed Services * Policy	0.011 (0.010)	NA	0.013 (0.010)	NA
Democratic Governor * Policy	0.035*** (0.011)	NA	0.034*** (0.012)	NA
Clinton vote share * Population * Policy	0.067*** (0.018)	0.065*** (0.017)		
Clinton vote share * Fair Market Rent * Policy			0.204** (0.086)	0.238 (0.166)
R-Sqr	0.9759	0.9781	0.9758	0.978
Observations	25,324	25,324	25,324	25,324
Location by Rank Fixed Effect	Yes	Yes	Yes	Yes
State by Policy Fixed Effects	No	Yes	No	Yes

Notes: The dependent variable in all specifications is the log of the housing allowance (i.e., *BAH*). All specifications include analytic weights by the military population for each location. Robust standard errors are clustered by location. *Significant at the 0.10 level, **Significant at the 0.05 level, ***Significant at the 0.01 level

more costly housing is in a community, the greater the effect of presidential politics seems to have been in the implementation of the BAH. As before, Specification 4, using solely within-state variation in the data, exhibits the same qualitative set of results.

6 Conclusion

Results from this study provide considerable evidence that the BAH had a significant impact on military housing allowances. The positive fair market rent effect shows that the BAH system better reflects rental costs, and the negative officer effect indicates a rank-equity adjustment, both of which were goals of the 1998 act. However, it also is evident that presidential and congressional politics both played roles in the *implementation* of the BAH. We find strong, positive, statistically significant evidence that the communities that benefited the most from the implementation of the BAH were those constituencies where politicians had the most to gain.

These findings are significant in that, even in the presence of an exceedingly specific law, both the executive and legislative branches of government were able to exert control over the bureaucracy. Our results also support the theoretical literature asserting that more detailed laws are promulgated when politicians want to achieve a particular goal with perceived

high payoff and minimize bureaucratic interference. Finally, our results are consistent with the theoretical analyses suggesting that the design of a law as well as its implementation under various conditions is politically motivated. Our findings suggest that public policies designed to achieve a particular goal may be manipulated for political purposes by the executive and/or legislative branch to meet very different objectives, in this case, a fiscal “reward” to politically supportive communities.

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