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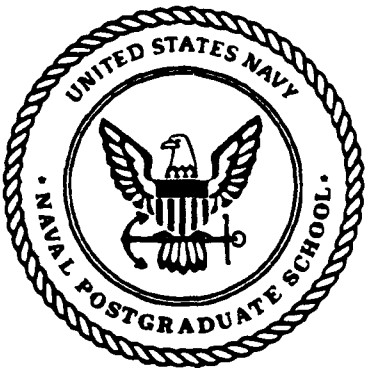

THESIS

THE V-22: A TURNING POINT
IN CONGRESSIONAL BEHAVIOR?

by

Kenneth J. Szczublewski

December, 1992

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THE V-22: A TURNING POINT IN CONGRESSIONAL BEHAVIOR?

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ABSTRACT

Why do legislators vote for some defense programs but against others? This issue is especially important now that Congress faces the need to cut defense programs while preserving U.S. security. The history of the V-22 offers a prime case study for examining congressional voting behavior for the post-Cold War era.

This thesis reviews the literature on three possible explanations for congressional voting behavior: parochialism (the desire to benefit constituents), the Military-Industrial Complex or MIC (where votes are "bought" by industry campaign contributions), and the personal preferences of individual members. The thesis uses logit equations to test and assess the validity of these hypotheses in the case of the V-22.

No reliable connection was found between personal preference and voting on the V-22. Liberal Democrats that were assumed to be "dovish" on defense spending were just as likely as "hawkish" conservative Republicans to support this program. Nor was any evidence found to support the MIC hypothesis that voting behavior is driven by PAC dollars. The likelihood of a representative supporting the V-22 actually *decreased* as PAC contributions **increased**. The parochial hypothesis was supported in the House but not in the Senate. Further research is required to find alternative explanations for defense voting behavior in the post-Cold War era.

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EXECUTIVE SUMMARY

Why do legislators vote for some defense programs but against others? Is congressional voting behavior driven by the parochial desire to find defense-related jobs for constituents? Do members vote on the basis of how much money they get from defense related political action committees (PACs)? Or do members vote according to their personal beliefs on defense? These issues are especially important now that the Cold War is over and Congress faces the need to cut defense programs in a way that best preserves U.S. security. This thesis uses the V-22 *Osprey* aircraft to examine what will drive congressional voting behavior in the post-Cold War era.

This thesis begins by reviewing the literature on three possible explanations for congressional voting: parochialism (which emphasizes the desire to benefit constituents), the Military-Industrial Complex or MIC (in which industry campaign contributions help determine voting behavior), and personal preferences of individual members of Congress. The thesis then uses logit equations to test these hypotheses and assess their validity in the case of the V-22 which has been funded by Congress despite repeated efforts by the Bush Administration to kill the program.

To test the applicability of the parochial hypothesis, data was gathered on the location and direct employment totals of V-22 prime contractors and known

V-22 subcontractors. The influence of the MIC was measured in terms of PAC contributions from the prime contractors: the Boeing Company and Textron Industries (parent company of Bell Helicopter-Textron). Personal preference was represented primarily by the member's National Security Index (NSI) score and secondarily by variables such as a member's former service in the U.S. Marine Corps or membership in the Tiltrotor Technology Coalition (TTC).

The current political science literature on defense voting stresses the importance of personal preference and general ideology. However, using standard indicators for such preferences (especially a member's NSI score), no reliable connection was found between ideological measures and voting on the V-22. Liberal Democrats were at least as likely as conservative Republicans to support this aircraft. Nor was any evidence found to support the MIC hypothesis that voting behavior is driven by PAC contributions. In fact, House members that received such contributions from V-22 prime contractor PACs were less likely to support the aircraft than legislators not receiving such money. The parochial hypothesis was supported in the House as representatives were more likely to vote for the V-22 if they believed that the program provided jobs in their districts. However, no such correlation existed in the Senate. Further work needs to be done to find alternative explanations for defense voting behavior, particularly now that the decline of the ex-Soviet threat has eliminated the past ideological basis for predicting such behavior.

I. INTRODUCTION

"With respect to the V-22, I sometimes have the feeling that the last question I will answer as Secretary of Defense is what about the V-22?"

Richard B. Cheney
Secretary of Defense
29 January 1992

Secretary Cheney's comment on the fate of the V-22 Osprey program was prophetic. Yet, in spite of over $2 billion in new appropriations and almost four years of bitter fighting between Congress and the Executive, the question of "what about the V-22" remains unanswered. How did the Bush Administration work to terminate the V-22 in the years following its 1989 program cancellation decision? How did Congress sustain the Osprey effort in the face of Executive objections? Most importantly, why did Congress continue to fund a program with an estimated cost in 1989 of over $23 billion?

The controversy surrounding the V-22 Osprey program offers a classic example of the struggle between Congress and the Executive to formulate U.S. defense policy and determine U.S. force structure. The Executive has the advantage of "firing the first shot" by virtue of its initial budget submission in the annual authorization and appropriation process. It is from this executive designed document that Congress makes its modifications to U.S. force structure. Closely linked to the Executive's "power of proposal" is the large amount of prestige

associated with the Office of the President. Should disagreements over weapons programs or other areas of defense policy arise, the president can call upon the vast amount defense expertise within the Office of the Secretary of Defense and other executive agencies.

Congress relies on its "power of the purse" to shape the armed forces of the nation. By selectively funding—or not funding—specific programs, Congress can fashion overall defense policy. Congress also uses the legislative language of the annual authorization and appropriation bills to further control the activities of the Department of Defense and pursue of its vision of the force structure required to meet future threats to U.S. national security. As the case of the V-22 illustrates, these two visions have become increasingly divergent since the end of the Cold War.[1]

This struggle over the acquisition decision of a single weapon system between these two branches of government is an important issue in its own right. From a budgetary standpoint, billions of dollars will be required from an already strained U.S. treasury should the V-22 enter into the procurement phase. From a military angle, the V-22 represents what many see as the best solution to the medium lift deficiency plaguing the U.S. Marine Corps. From an economic and trade stance, the V-22 could represent a substantial export commodity for the U.S. aerospace industry.

Yet the V-22 development and procurement issue transcends the narrow programmatic level and offers a classic example of the struggle between Executive

and Congress over the formulation of U.S. defense policy. It also provides insight into the tactics and maneuvers employed by each branch of government in the pursuit of its respective vision of future U S. force structure and defense policy. The question of defense policy formulation has been addressed elsewhere and will not be examined.[2] The question at issue here is why did Congress continue to fund a weapons program that the Bush Administration termed as too expensive and too narrowly mission focused?[3]

Most observers of Congress quickly seize on the fact that the V-22 represented defense related work in 47 states and involved over 2000 subcontractors.[4] Did pork-barrel politics rear its ugly head as members sought to satisfy narrow constituent interests at the expense of national budget priorities? Did the incessant drive for re-election dominate members' decisions to the point that the protection of local benefits resulted in the discountenance of a radically altered international security environment?

Other observers note that the end of the Cold War has exposed the influence of the Military-Industrial complex as efforts to cut weapons programs, such as the V-22, are thwarted by Congress.[5] As the defense budget shrinks and defense contractors are faced with the prospect of fewer "big ticket" items, these contractors must work harder to maintain their output. Since 1989, the political action committees of the Boeing Company and Textron Industries—parent companies of two prime contractors Boeing Helicopter and Bell Helicopter, respectively—have contributed a combined total of $1.285 billion to the electoral

campaigns of congressmen.[6] Did the influence of the Military-Industrial complex, via (PACs) and industry lobbying efforts, dominate congressional decision-making on the continuation of the V-22 Osprey?

A few observers have noted that while the first two explanations may be applicable to individual legislators, neither adequately serves as an explanation of institutional behavior regarding Congress's role in the weapons acquisition process.[7] The explanation of personal preference contends that members evaluate a program funding decision from a policy framework. Is it possible that Congress continued to fund the V-22 because they believed it was a good program that had not only military value but also possible commercial and civil aviation applications?

A. PURPOSE

This paper will review the literature concerning congressional decision-making on defense issues, provide a brief overview of the aircraft's history, and detail the political environment surrounding the V-22. An examination of the three competing explanations for congressional behavior in the case of the V-22 will demonstrate that policy concerns of congressional members—not parochial motivations or the influence of the military-industrial complex—has driven the continued funding of this program.

B. FINDINGS

An examination of these three major schools of thought, however, did not fully support the parochial, Military-Industrial Complex, or personal preference hypotheses. As detailed in Chapter V, support for the parochial hypothesis existed only in the full House when the nominal level of employment was used in the multivariate analysis. The presence of a subcontractor was positively related to support for the V-22 program. The Military-Industrial Complex hypothesis of votes-for-dollars was found to be significant but inversely related to support for the V-22 program. The more PAC dollars a member received, the lower the likelihood of support for the aircraft. The final hypothesis of personal preference was also significant, but, like the Military-Industrial Complex hypothesis, was found to be inversely related to support for the V-22. The more pro-defense or "hawkish" a member was assumed to be, the lower the probability that she or he would support the continuation of the V-22 Osprey.

C. FRAMEWORK

The first section of this paper is devoted to a review of the literature concerning why members of Congress—both the House and Senate—vote the way they do with particular attention to voting on defense issues. The second section will familiarize the reader with the characteristics, developmental reasons, and the recent legislative history of the V-22 Osprey. The third section describes the

methodology utilized in determining which of the major schools of thought on congressional voting behavior best explains the behavior on the V-22. The fourth section is a presentation of the findings and a comparison of how they fit the competing explanations for congressmen's defense voting behavior. The final section contains a comparison of the Senate and the House and possible implications of the findings.

ENDNOTES TO CHAPTER I

1. For an excellent treatment of this change see Paul N. Stockton, "Congress and Defense Policymaking for the Post-Cold War Era," forthcoming in *Congress Resurgent: Foreign and Defense Policy on Capitol Hill*, eds., James M. Lindsay and Randall B. Ripley (Ann Arbor: University of Michigan Press, 1993).

2. For a comprehensive bibliography of works addressing the role of Congress in defense policymaking see James M. Lindsay and Randall B. Ripley, "Foreign and Defense Policymaking in Congress: A Research Agenda for the 1990s," *Legislative Studies Quarterly*, Vol. 17, No. 3 (August 1992), pp. 417-49.

3. Pat Towell, "Bush's Revisions May Auger Policy Shifts in Future," *Congressional Quarterly*, Vol. 47, No. 17 (29 April 1989), p. 979.

4. Robert Lange, Legislative liaison for the Boeing Company, *Telephone interview with the Author*, 6 November 1992. Also see David H. Hackworth, "You in Congress, Listen Up," *Newsweek*, 8 June 1992, p. 30.

5. For example see Louis Uchitelle, "An Odd Aircraft's Tenacity Shows Difficulty of Cutting Arms Budget," *New York Times*, 2 November 1992, p. A-1, C-6.

6. The source for all campaign contributions was the Federal Election Commission (FEC). From 1 January 1989 to 16 October 1992, the Boeing Company PAC contributed $567,857 (44%) while the Textron Industries PAC contributed $717,175 (56%) to congressional candidates and members.

7. James M. Lindsay is usually at the forefront of this explanation for congressional behavior. For an example of his work see *Congress and Nuclear Weapons* (Baltimore: John Hopkins University Press, 1991).

II. CONGRESS, VOTING, AND DEFENSE

Is it Pork or Policy? This question captures the essence of the debate surrounding congressional behavior toward defense spending. On one side of the issue are those that feel that members are driven by parochial interests. This school of thought believes that congressional micromanagement of the defense budget down to the programmatic or "line item" level is a result of congressmen striving to "bring home the federal bacon" or to protect programs already in place. The overall effect of these specific actions is sacrificed as members seek to satisfy narrow constituent interests in their quest for re-election.

An offshoot of this school is represented by those who believe that congressmen are the pawns of special interest groups such as defense-related political action committees (PACs). They surmise that a member will sell his or her vote of support (or opposition) on a specific program in return for financial support of their re-election campaigns.

The other broad school of thought feels that congressmen are driven by their personal policy preferences when defense spending issues are involved. Since the majority of defense programs directly involve only one specific congressional district or state to any large degree, some other factor must determine how a congressman will vote on the wide range of defense bills and related amendments

that arise on an annual basis. This hypothesis contends that specific policy positions taken by members can assist them in their pursuit of re-election.

This chapter will explore each of the three major schools of thought concerning the explanation of congressional voting behavior on defense issues. Following a review of the literature for each explanation, the V-22 will be employed as a test case and the potential applicability of each explanation discussed. The individual sections will conclude with anticipated relationships between program support and events such as PAC contributions from the prime contractors or the presence of a first tier subcontractor for the V-22 in a representative's district or a senator's state.

A. PAROCHIALISM

Parochialism, better known as pork, is a popular and attractive theory to explain how congressmen approach defense spending.[1] Conventional wisdom contends that congressmen are driven by the *parochial imperative*. Coined by Gerald Lipson and Randall Fitzgerald, the parochial imperative is defined as an excessive preoccupation with the local impact of spending decisions at the expense of the national interest, especially with regard to the two goals of a balanced federal budget and reduced levels of spending.[2] At the core of the parochial imperative argument is the assumption that members, especially military committee members, attempt to direct defense related expenditures to their district/state to secure re-election by providing defense-related benefits to

their constituencies.[3] Exceptional congressmen, such as Rep. Mendel Rivers (D-S.C.), have come to typify the commonly held view of the parochially motivated member.[4]

1. Defense Benefits: Weapons and Jobs

The popular literature is filled with stories of how congress is robbing the federal treasury to fund weapons programs in their districts or to increase defense-related jobs in their district or state.[5] Robert Higgs is the harshest critic of perceived parochially motivated defense spending.[6] Commonly cited examples of "pork hawk" activity include the continuation of the A-7 Corsair, C-5B Galaxy, the B-1B Excalibur, and the A-10 Warthog. Others examples are the ill-fated T-46 trainer, the B-2 and the Seawolf SSN programs.[7]

It would be gullible to assume that no parochial motives underlie the support for weapons built or to be built in a member's district or state. Indeed, James Lindsay argues that

> ...constituencies that host prime contractors usually depend on that weapon as much as other constituencies depend on [military] bases. Members representing these constituencies often have little electoral choice but to support the weapon.[8]

A possible reason why members fight so hard to save military prime contracts in their district/state is because their constituents view these programs—much in the same way bases are viewed—as semipermanent benefits.[9] They fear that their constituents may hold them responsible for the loss of benefits and probable resultant economic decline.[10]

It is also a mistake not to recognize that the electoral connection demands such activity. In fact, Rep. Les Aspin (D-WI) has stated that

> ...congressmen vote the way they do primarily because of their constituents, and this is particularly true when it comes to votes pertaining to defense.[11]

Position taking can contribute to a member's re-election efforts and it is more important to be on the *right* side rather than on the *winning* side.[12] An examination of these above mentioned programs will find that they were (or are in the process of being) terminated by Congress because the parochially motivated arguments of their congressional backers failed to convince a majority of congressional members that the systems were necessary.

The professional literature finds almost no empirical evidence to support the parochial imperative—that military committee members enjoy higher levels of defense benefits than non-committee members—and no clear evidence to support the hypothesis that members' defense voting is linked to levels of military spending in their district or state.

Carol Goss concluded that members of the House Armed Services Committee (HASC) were likely to be linked to extra base employment.[13] R. Douglas Arnold, however, noted several methodological flaws in Goss's work and in his own study found no support for the hypothesis that members of military committees are able to affect employment levels at installations in their districts.[14] Leonard Ritt found that the "standard model which points to committee position and/or seniority as the most important independent variables

in enabling legislators to enrich their districts is not generally accurate."[15] Bruce Ray has conducted several investigations and has found that military committee members' districts do not appear to be rewarded for their support of DoD desires,[16] that powerful committee members did not receive favorable treatment in the federal spending process when compared with constituencies represented by poorly positioned legislators,[17] and that military appropriation committee members, like their non-committee counterparts in Congress, were unable to prevent losses of federal activities in their districts.[18] Other studies by Barry Rundquist found that congressional districts represented on the House military committees did not benefit disproportionately from the distribution of military procurement expenditures.[19] A joint study by Rundquist and David Griffith found that constituents did not benefit from being represented on congressional military committees.[20] One final study by Rundquist and John Ferejohn concluded that "*something* about the way military procurement decisions are reached prevents districts and states represented on military committees from benefitting."[21]

All of these studies provide empirical evidence that the parochial imperative is not a contributing factor in the allocation of defense expenditures. Additional evidence on why members seek positions on military committees further discredits the parochial hypothesis. One would expect that desires to provide constituent benefits would be the overwhelming reason behind efforts to gain a seat on the military committees. Interview evidence, however, has not

borne this out. Charles Bullock interviewed nine freshman representatives in the 92nd Congress (1971-3) and found that five sought sets on the HASC for constituency reasons and three sought seats on that committee for policy reasons.[22] Similar work by Steven Smith and Christopher Deering with House and Senate freshman in the 97th Congress (1981-3) found that of those new members seeking positions on the HASC, eleven cited constituency reasons while seven cited policy reasons. For the SASC, constituency and policy reasons were each mentioned four times.[23] Lindsay conducted interviews during the 100th Congress (1987-9) and found that of the nineteen HASC members interviewed, thirteen sought seats for reasons of economic well-being while eight sought seats for policy reasons.[24] While the data collected from these interviews do not discredit the parochial imperative, they do indicate that there is more than the desire to bring home the "defense bacon" influencing committee selection for incoming members.

Another angle to view the influence of parochialism on defense is to determine the impact of overall defense spending levels on the defense voting behavior of a congressman. Related to this approach is the utilization of economic benefits that specific weapons systems provide to states and districts versus the voting performance of a congressman on that program.

Over a dozen studies have been conducted regarding levels of military spending and defense voting behavior. While several of these studies show some correlation between defense spending and voting behavior, they occur only in

studies involving the Senate and are often weak. No study to date has shown a correlation between defense spending and voting behavior in both chambers of Congress.[25]

While studying the Senate, James Clotfelter found that defense employment of all kinds was related to roll call behavior.[26] Similarly, Bruce Russett found that economic incentives slightly influenced the position that senators took on general defense spending.[27] Charles Gray and Glenn Gregory found that military spending had a small but statistically significant relationship to voting in the Senate.[28]

In contrast to these works, Frank Wayman found that a Senator's roll call voting was only weakly associated—not statistically significant—with their state's economic base.[29] Stephen Cobb has conducted several studies in this area. His findings include that the House of Representatives as a whole provides no evidence that the amount of defense spending a congressman receives in his district as opposed to another has any influence on how he votes on selected foreign policy issues.[30] A later study found no significant or consistent pattern of correlations between defense spending and foreign and defense policy voting.[31] In the same vein another study by Cobb found that defense spending concentrations had no significant influence on the manner in which senators voted on issues in the area of foreign policy.[32] Ray found that constituent dependence upon defense spending is not an adequate predictor of a representative's predisposition towards national security issues.[33] Neil Hieghberger found that

the impact of direct military presence in a representative's districts was ambiguous.[34] A final study by Wayne Moyer found that primary contract awards never showed any significant association with defense voting and that defense payrolls and military affiliations exhibited only moderate associations with defense voting behavior.[35]

Several studies have also been done regarding congressional behavior when specific weapons programs involve economic benefits for their district or state. Robert Berstein and William Anthony showed that economic incentives had no statistically significant effect on Senate voting behavior regarding the ABM system.[36] Richard Fleisher found that economic benefits for the B-1 bomber program were an insufficient predictor for Senate voting behavior.[37] Lindsay concluded that parochialism had little effect on congressional decision making involving strategic weapons systems.[38] A follow-on study by Lindsay involving the Strategic Defense Initiative (SDI) found constituency benefits to be statistically insignificant regarding member voting behavior on the system.[39] Work by Kenneth Mayer on funding for Navy carriers found that while constituent economic benefits were not the most potent predictor for roll call voting, members will think about constituent economic level consequences when they decide whether to support funding for a weapon system.[40]

2. Parochialism and the V-22

How well does the V-22 fit the parochial hypothesis? From an initial look at the size of the program, it is notable that only three states lack some portion of the work for the V-22. Thus the V-22 program appears to provide economic benefits to a substantial number of congressional members. Do senators and representatives from the remaining forty-seven states support the program due to the economic benefits that it provides their constituents? Do members of the congressional committees that have jurisdiction over the V-22 receive more of the work on the V-22 than other congressional members?

What is unique about the V-22 is that it has the potential for classification as "national pork." Its potential for easing overcrowding at congested airports, opening air routes to previously inaccessible parts of the country (e.g., Alaska), and for saving billions of matching federal dollars as a result of vertiport versus airport construction options, takes the V-22 out of the familiar local picture and places it at the national level. It also has the potential to be a leading export product from the U.S. commercial aviation industry. Because it represents "dual use technology" that many other military systems do not possess, the V-22 may obfuscate the line between pork and policy.

3. Summary and Predictions

The evidence as presented in the literature appears to weigh in against the theory of the parochial imperative. Yet it could be that the theory is true and

that either improper data utilization or faulty methodology has obscured the true link between the parochial imperative and congressional behavior on defense issues.[41] How well does the V-22 Osprey fit the theory of the parochial imperative as an explanation for congressional voting behavior on defense issues?

As noted, the widespread dispersion of V-22 subcontract awards appears to support the theory of parochialism. Yet this seemingly obvious explanation may be correct. If this were true, then it is expected that members with V-22 expenditures in their district or state would vote in favor of sustaining this program. It is also anticipated that members on the military committees—who are in the best position to include funding requests for the V-22 in the annual defense authorization and appropriation bills—would have some portion of V-22 related expenditures in their district or state as a way of providing economic benefits to their constituents.

B. MILITARY-INDUSTRIAL COMPLEX

The warning given by then-President Eisenhower in his 1961 Farewell Address on the dangers of an emerging alliance between the military and private industry still rings loud and clear in the ears of many people. The mere mention of the Military-Industrial Complex conjures up thoughts of a widespread conspiracy by government, military and industry leaders to divert the national treasury toward self-serving and unnecessary weapons. Yet the nature of this interpretation of the Military-Industrial Complex (MIC) is misleading. Indeed,

scholars have questioned if a MIC has ever truly existed.[42] If it does exist, what comprises the MIC?

1. The MIC Defined

Rep. Aspin defines the MIC as

> ... one more special interest group seeking special attention from our government—a contract here, a tax benefit there, a rewriting of the regulations to make the pursuit of the golden bough easier, cheaper, and, in the end, more profitable.[43]

The MIC is differentiated from parochialism by its structure and degree of organization. The MIC has been described as an *iron triangle* which consists of the private defense industry and the military establishment as the two sides resting on a base formed by Congress.[44] This arrangement allows the three primary players to work "hand-in-glove" with each other to ensure that military contracts are awarded on a regular basis to defense companies so weapons and plants can be built in military committee members' districts, thus providing the military with the latest in weapons technology.[45]

The MIC is also differentiated from parochialism by the catalyst which prompts the member to support or oppose a particular program. In the previous hypothesis (parochialism), the member acted as a result of perceived constituency pressures. In the MIC hypothesis, the member acts favorably on a program as a result of political action committee (PAC) contributions. The MIC theory believes that these PAC contributions "buy" the member's vote.

Proponents of the MIC theory feel the complex is a self conscious conspiracy acting mainly in its own interests. The MIC has been responsible for the falsification of the conflict ideology behind the Cold War and is the primary fueler of the arms race for its own monetary and power gains.[46] Another aspect of the MIC is that it is detrimental to the U.S. economy as it consumes scarce resources for unnecessary defense programs.[47] There is no shortage of literature in this area, but most cite *The Power Elite* by C. Wright Mills as the work which first focused attention on this emerging force in American foreign policy.[48]

In contrast to this interpretation of the MIC is the view that the while the MIC may be an outgrowth of the power elite, it has grown out of the needs of the nation's foreign policy goals and not the other way around.[49] This view holds that the MIC is an amorphous, loosely structured entity.

The research literature on the MIC is also mixed. There are studies that support key statements in the theory while others disconfirm propositions in the theory. There are others that are equivocal in their findings. The best collection of these studies is *Testing the Theory of the Military-Industrial Complex* edited by Steven Rosen.[50] In short, the eleven studies found that while both the United States and the Soviet Union had extensive industrial sectors oriented toward defense item production, neither economy was dependent on these expenditures for military orders. In fact, the majority of U.S. corporations derived only a small part of their sales from military contracts, and the profits involved were not excessive. The MIC required an external threat to provide strategic rationale for

military expenditures, and it was found that this threat was not fabricated by the MIC. The studies also bore out that the weapons acquisition process is affected by internal politics.[51] The best way to view the MIC was not as a conspiracy but as a subtle interplay of interests and perceptions.[52]

The MIC theory suggests that military committee members would experience higher levels of defense spending in their districts, but as demonstrated in the section on parochialism, this is not the case. Mayer has proven that Congress has very little influence over who receives prime contract awards due to the structure of the contract awarding process.[53] A member who does appear to benefit disproportionately in the receipt of military contracts to his district or state is the beneficiary of geography rather than some reward by the MIC. Data from FY92 reveals that over 50% of all DoD Military Procurement awards (prime contracts) were concentrated in only *five states*.[54]

It is estimated that over fifty percent of the value of the prime contract is distributed to subcontractors.[55] These subcontracts, which are awarded by the prime contractor(s), are often spread out over a large geographic area with the intent of giving everyone a piece of the pie.[56] These tactics, however, do not guarantee support for the program. The studies previously cited involving the B-1B and the Navy carriers have found that local economic benefit was not the most potent predictor behind congressional voting on those programs.

Another method to measure the influence of industry over members of Congress is to compare the amount of PAC contributions to a member and that

member's voting record on specific programs such as the V-22. Coincident with PAC contributions are lobbying activities by the major defense contractors. While most observers assume that there is a firm link between PAC contributions and congressmens' voting decisions, scholarly research into this area shows this not to be the case.

Mayer's work involving PAC contributions by defense contractors found that overall, military committee members received above average levels—both absolute and percentage wise—of contributions and that PAC contributions were usually given to members who were viewed as pro-defense.[57] His detailed analysis of the AVCO/M-1 tank engine second source and the Lockheed C-5B debates indicated that PACs accelerate their contributions when their sponsored program is in trouble. At the same time, however, he found that as a general rule, PAC money would not guarantee a recipient's vote.[58] Analysis of PAC contributions by the Tenneco Corporation in the case of proposed funding for two additional aircraft carriers found that the PAC contributions "had no effect on the vote."[59]

Similar to the findings of Janet Grenzke, Mayer found that defense PAC contributions, while strategically timed, often appeared to be targeted counter to the popular money-for-votes theory. If the purpose of defense PAC contributions is to ensure a majority, then contributions to members already predisposed to defense spending is not the wisest utilization of PAC financial resources. In the same vein, Grenzke noted that PACs "tend to give to friends."[60]

If PAC money truly bought votes, it would make more sense to give to defense moderates or to members who are undecided.[61]

While PAC contributions may not govern voting decisions, they do appear to "buy" access to members of Congress.[62] John Wright confirmed this observation and found that lobbying, not money, shapes and reinforces member's voting decisions.[63] Work by Richard Hall and Frank Wayman also found a positive relationship between access and PAC contributions. They, like Wright, concluded that the lobbying activities of "organized moneyed interests" (i.e., PACs) affected the decision-making process of Congress.[64]

Not surprisingly, a majority of major defense contractors have offices in Washington, D.C. and use lobbyists to try and "sell their goods to the federal government." Most of their time is spent providing information to executive and legislative members.[65] The temptation for the military and contractors to work too closely together has been alleged by one author, but an investigation by the Justice Department found no evidence of wrongdoing.[66] The case of the lightweight fighter also provides insight into how defense industry lobbyists can change a member's mind based on the information provided.[67]

These lobbying activities, however, are not limited to industry representatives alone. For example, in 1989, Secretary Cheney personally—and successfully—lobbied members of the House Armed Services Procurement Subcommittee in an effort to approve his initial procurement proposal which deleted funding for the V-22 Osprey.[68] Additionally, the existence of the "Marine

Corps" lobby on Capitol Hill is a well known but undocumented fact. According to interviews with senior Senate staffers, the thinly knit group of Marine Corps officers and legislators exerts a large amount influence over issues of importance to the Marine Corps.

On a closing note, it is interesting that in spite of the supposed power of the MIC, many U.S. defense industries are diversifying. Most influential in their decision to diversify out of defense production were straightforward business calculations that showed that defense spending cuts and/or flat defense spending limited the potential for sales growth in the military field.[69] The survey also found that several firms criticized the low return on investment in doing business with the Pentagon and the degree of perceived overregulation as causing unacceptably high risks for defense firms.[70]

2. The MIC and the V-22

As previously mentioned, Congress has very little influence over to whom prime contracts for proposed weapons systems are awarded. Yet the prime contractors often strategically spread the subcontracts over a wide area in an attempt to obtain widespread support for their program. It is this conscious action by the prime contractors that differentiates the resultant economic benefits for a member's district or state from the parochial imperative.

This certainly appears to be the case with the V-22. The two prime contractors, Boeing Helicopters and Bell Helicopter-Textron Industries, have 201 first tier subcontractors and over 1800 second and third tier subcontractors located

in 47 states. Are members sympathetic to the V-22 rewarded by the presence of a subcontract in their district? Are members who sit on the defense committees and relevant subcommittees more likely than other member to have a V-22 subcontract in their district or state?

The existence of the Tiltrotor Technology Coalition seems to confirm the suspicions of most MIC conspiracy theorists. The Tiltrotor Technology Coalition is comprised of business, labor, and political leaders. Here defense contractors with a direct stake in the V-22 have joined with members of Congress to "spread the word" about the defense, commercial, and trade potential of the V-22. For example, General Motors and its division Allison Motors, which builds the T406-AD-400 turboshaft engines on the V-22, are in the same group as Sen. Dan Coats (R-IN) and Sen. Richard Lugar (R-IN) whose state is home to the Allison plant. Is this organization the visible portion of a V-22 *iron triangle* with the "silent" Marine Corps lobby operating in the shadows?

How much "access" did the combined PAC contributions of $1.285 billion since 1989 "buy" the Boeing Company and Textron Industries? Since detailed data on lobbying activities is not available due its sensitive nature, any conclusions on the influence of industry or "other" lobbyists would be sheer speculation. In spite of the findings of several researchers regarding PAC contributions and voting behavior, did these contributions affect a member's voting behavior or support for the V-22?

3. Summary and Predictions

Although there is a relationship between privately owned industry and government agencies as a customer for defense items, the MIC's influence over defense weapons acquisition and congressional voting behavior remains unclear. Does this highly structured yet difficult to identify entity known as the MIC provide the key to understanding congressional voting behavior on defense issues such as the V-22?

If the MIC really is as influential as many perceive it to be, then it is anticipated that members of the military committees in Congress will be more likely to have V-22 related work in their districts or state as an effort by the MIC to obtain their support for the V-22 program. It is also expected that members of the Tiltrotor Technology Coalition—if it a true manifestation of the MIC—will have more V-22 related work in their state or district than other members of their respective chambers. It is also anticipated that PAC contributions from the Boeing Company or Textron Industries will be positively related to recipients' voting behavior on the V-22.

C. PERSONAL PREFERENCE

The final hypothesis behind congressional voting behavior on defense issues is termed personal preference. This hypothesis for explaining congressional voting behavior on defense issues contends that members act according to their own

feelings and beliefs about an issue and the policy they see it as representing. This concept is also referred to as ideology.

James Lindsay is the leading advocate of ideology as the explanation for congressional defense voting behavior. He feels that a member's ideology is used not so much to reach a decision on an issue but rather to justify their positions.[71] He uses rating systems such as the Americans for Democratic Action (ADA) liberal-conservative scale (0-100) or the American Security Council's (ASC) National Security Index (NSI) scale (0-100). Since ideology is such a broad term, Lindsay has coined the term "hawkishness" as a substitute when dealing with Congress and defe..se issues.[72]

While Lindsay and others, such as Kenneth Mayer, who believe in the ideological nature of congressional defense voting behavior have come up with an effective way to measure ideology—or personal preference—they have not sufficiently explained what comprises ideology. If ideology is the potent predictor that many believe it is, it would seem important to understand what comprises the "fuzzy" concept of ideology or personal preference.

Personal preference is a complex interaction of an individual's images, attitudes, values, and beliefs involving any policy decision such as funding for defense programs.[73] A member's image of defense issues is comprised of his or her perceptions, evaluations, and the meaning he or she assigns to an issue. For example on a program such as the V-22, does the member perceive it as a necessary system? Does the member evaluate its new technology to be within

acceptable levels of risk? Does the member see the development of the V-22 as a signal of U.S. willingness to increase its involvement in crises abroad? The images created by each individual decision-maker are a critical part of the member's personal preference make-up.

Attitudes are less complex than image formation. Attitudes can be thought of as "general evaluative propositions" that members hold about a wide range of policy areas.[74] These propositions may be as simple as "good or bad" or as complex as "stabilizing or destabilizing." Attitude provides the decision-maker with a basic framework from which to view and evaluate issues.

Values are essentially a result of upbringing and personal experience. They serve as standards against which certain actions such as spending billions of dollars on a new aircraft or spending that money on displaced worker re-training programs are judged. They also provide the individual with reasons and justifications for decisions and actions. If the member holds the defense of U.S. national interests, via military means, very highly, he can turn to his values to confirm his decision to support the development of new military systems.

The final component of personal preference is beliefs. Beliefs are closely related to values and can be thought of as "propositions that individuals hold to be true even if they cannot be verified."[75] An explicit set of beliefs is sometimes referred to as doctrine which is often used to explain reality and prescribe goals for political action.

Each of the four components of personal preference—images, attitudes, values and beliefs—overlap and reinforce each other. This complex, intricate interaction produces the personal preference make-up of each individual. It is what some refer to as ideology or "hawkishness" when dealing with defense issues.

A member's personal preference on an issue is likely to be most active when it is perceived that the electoral constituency's interest (or issue saliency)—both present and future—is very low on a particular issue. Research has shown that perceived constituency opinion is quite important when a congressman is deciding how to vote.[76] If an issue is perceived as salient to the member's electoral constituency, then the member may submerge his own policy preferences to those of his constituents.[77] This calculation is dependent upon the electoral ramifications of a possible cross against the member's hometown voters.[78]

If, however, their own policy views do not contradict those of the constituents that elected them, or if issue saliency is low, then the member is "loose in the harness" and free to vote his or her policy views.[79] More recent work by Kenny Whitby and Timothy Bledsoe involving U.S. senators appears to confirm this observation. They found that the

> ... electoral fortunes of incumbent senators are, to a modest degree, tied to their issue discrepancy vis-a-vis their constituents. Senators who deviate from the ideological leanings of their constituents can expect a more difficult time at the polls than their colleagues who embody more of a delegate role and who faithfully reflect the policy wishes of their constituents.[80]

Later research by Stephen Shaffer and George Chressanthis concluded that "voters do not appear to hold their senatorial incumbents *strictly* accountable for their actions."[81] They later add that "officeholders are well advised to remain close to the mainstream of their constituents" and be able to "explain their actions in Washington to the satisfaction of their constituents."[82] In the final analysis, voters do tend to exercise a very loose form of accountability over their elected representatives.[83]

Early work by Aage Clausen makes a very convincing argument that congressmen approach the hundreds of decisions that they are faced with from a policy perspective. He contends that members organize the numerous diverse issues into five broad policy dimensions—civil liberties, international involvement, agricultural assistance, social welfare, and government management—and *vote according to their own views.*[84] Clausen further argues that because of the ill definition of the constituents' interests truly are, the effects of constituency influence is not as restrictive as generally thought.[85]

1. Empirical Support for Personal Preference

A study by Douglas Nelson and Eugene Silberberg found that ideology did not predict how senators voted on specific weapons. Instead they concluded that parochial interests—local economic benefits—were a better predictor.[86] These findings are inconsistent with the majority of the scholarly research and have been criticized on methodological grounds.[87]

James Lindsay is the leading advocate of the ideological nature of members' voting decisions. In his studies involving strategic weapons systems, he has found that of all the possible explanations for congressional decision-making on such systems as the Missile Experimental (MX) and the Anti-Satellite (ASAT) program, the most accurate predictor was the privately held policy views of the member.[88] In his work on SDI, Lindsay found that "members' general defense views remain significant predictors of how they vote" and that "ideology or hawkishness best predicts congressional voting."[89]

Other studies include analysis of the ABM system by Robert Berstein and William Anthony who found that "the position that a Senator adopted on the ABM issue has been shown to reflect his ideology, not his party commitment or the economic benefits his state would derive from the adoption of the ABM."[90] Ralph Carter found that ideology had a direct and significant effect on defense procurement issues.[91] Stephen Cobb found that the votes of congressmen can be explained in appreciable measure by their ideological predispositions as symbolized by their party affiliations and the regions in which their districts are located.[92] Richard Fleisher in his study of the B-1 bomber found that ideology was an important predictor of roll call voting on the B-1 but that its impact was not constant over time.[93] Frank Wayman found in his analysis of arms control and strategic arms voting in the Senate that "the roll-call voting of senators on defense, in short, is most strongly associated with their own general voting tendencies."[94]

Kenneth Mayer's study of funding for aircraft carriers indicates that the importance of ideology is not limited to the strategic or nuclear weapons realm.[95] Through detailed examination, he concluded that the "single best predictor of how a member voted on this issue is his or her expressed preference on defense issues in general."[96]

While this list of findings is not all inclusive, it does provide overwhelming evidence that a member's personal preference on defense issues is a potent indicator of how she or he will vote. It is also interesting to note that as circumstances—such as the international security environment or perceived threats to U.S. national security—change, so does the predictive effectiveness of ideology. This is due to a change in images generated by new surroundings. This "ideological shift" or change in a member's personal preference is probably not quickly manifested via defense voting behavior until some basic attitudes have been altered to fit the member's new vision of reality.

2. Personal Preference and the V-22

How well does the V-22 fit the personal preference hypothesis of congressional defense voting behavior? The application of a member's personal preference requires the construction of a framework from which to view and evaluate an issue. In the case of the V-22, these frameworks for support of the multi-billion dollar program take the shape of what many call policy arguments. How a member perceives an issue and his or her attitude toward the type of issue at hand will shape the type of policy reasons that emerge to rationalize that

member's support or opposition to an issue. For the V-22, these main policy reasons for support of the aircraft are its military value, its civil aviation potential, and its export potential. While one member may focus more sharply on one of these three policy arguments, they are usually mentioned simultaneously to ensure a majority of support for the program. For members opposed to the V-22, the arguments focus on the high cost of the program.

The military value argument for the V-22 centers around the unique characteristics of the aircraft such as its speed, range, and advertised survivability in hostile landing zones. Rep. Tim Burton (D-IN) has stated that "[T]he V-22 will allow the Marines and our Special Operations Forces to perform over-the-horizon ship-to-shore assaults quickly and with fewer casualties."[97] Sen Lloyd Bentson (D-TX) noted that the V-22 will provide the flexibility U.S. forces will require in a world more often turbulent and chaotic than neatly ordered and predictable.[98] Sen. John Glenn (D-OH) has referred to the V-22 as "one of the greatest advances we have for conventional warfare enhancement for all four services."[99]

Other observers feel that the V-22 Osprey represented one of the first opportunities for Congress to make a statement—in concrete terms—about the importance of supporting programs that are relevant to a strategy that accounts for the current flux in the international climate.[100] Some supporters of the V-22 program point out that the advances in tiltrotor technology will lead to similar advances in military unmanned aerial vehicles (UAVs).[101]

Former Marine Corps Commandant General Alfred Grey, USMC (Ret.), has stated that the V-22 is the most cost-effective idea over time to the U.S. Marine Corps need to replace its aging CH-46E *Sea Knights*.[102]

The civil aviation argument in favor of the V-22 highlights the aircraft's potential for reducing congestion along overcrowded air corridors between major cities.[103] One simulation indicated that through the use of commercial tiltrotor aircraft, the average flight time along the crowded Northeast corridor was reduced by over an hour and departures from major airports reduced by one-third.[104] Another study indicated that vertical flight commuter transportation systems would result in lower costs, greater convenience, increased quality of service and possibly enhanced safety for the air transport industry and the travelling public.[105]

An indication of the strength of this policy argument can be seen in the FY93 Transportation Bill. During the conference markup of the FY93 Transportation Bill, Congress appropriated $1.5 million—which was not requested by the Administration—for research, engineering and development of the necessary infrastructure required to integrate the V-22 tiltrotor aircraft at civilian airports.[106]

Its ability to provide air service to previously isolated areas of the country—due to either terrain limitations or lack of funds for airport construction—is also touted as a positive characteristic of the envisioned civilian

variant of the V-22. Sen. Ted Stevens (R-AK) predicts that when the commercial variant of the V-22 comes to Alaska it will revolutionize civil aviation.[107]

Supporters cite the need to develop the military version of the tiltrotor aircraft first to prove the safety and reliability of this new technology.[108]

The export potential argument often cites the fact that our two main economic competitors, Japan and Europe, are developing tilt-technology aircraft. The Ishida Aerospace Research Company of Japan has a development facility only 15 miles from the Bell Helicopter plant in Fort Worth, TX.[109] A Japanese industrialist, Hikaru Matsunaga, commented after touring the Bell Helicopter facility that "If you produce this aircraft, I guarantee you we will buy it. If you do not, I guarantee you we will build it."[110]

The European consortium, EUROFAR, is also experimenting with tiltrotor designs. Its version of a tiltrotor aircraft would carry thirty passengers and begin flight testing by 2000 with initial production targeted for 2010.[111]

Estimates of the size of the potential export market range from 3000 to 5000 aircraft by 2010.[112] Many members of Congress warn of a repeat of the VCR fiasco and feel that if the V-22 is not produced, U.S. commercial aviation firms will have to buy U.S. developed technology from overseas manufacturers.

3. Summary and Predictions

How a member views an issue appears to be a powerful indicator of how he or she will vote. Given the cost and technology demonstration factors that must be met prior to the development of a commercial variant of the V-22, a

military version is the first step toward the development of an export market for U.S. built tiltrotor aircraft. Thus member's personal preferences on defense issues should be the best predictor of a member's support or opposition to the V-22. Since no better measurement of a member's personal preference or ideology is available, the ADA and NSI scales will be used to represent this concept.

However, the effectiveness of these rating systems as an accurate measure of ideology has been questioned by some in the post-Cold War era. With regard to the ADA scale, Paul Stockton notes that such "conservatives" as Rep. John Kasich (R-OH), who had a 1990 ADA rating of 11 and an NSI rating of 100, helped to lead the fight in the House against B-2 bomber funding.[113] Stockton further argues that the

> ... rise of concerns over the deficit and collapse of the Soviet threat are scrambling the ideological basis for predicting and assessing legislators' votes.[114]

Interviews with senior Senate staffers indicated that rating systems such as the NSI scale for defense issues may not be truly representative of how the member views the overwhelming majority of the defense budget. The selected votes used by the ASC are usually very controversial in nature (e.g., funding for the B-2 or the Strategic Defense Initiative) and represent only a small fraction (perhaps 2-3%) of the total defense budget. Issues that comprise the "guns and bullets" portion of the defense budget are rarely decided via a roll call vote. This activity may actually mask how a member feels about overall defense spending.

How well do the ADA and NSI rating systems predict voting behavior on a $28 billion weapon system that was scheduled to enter advanced procurement in the wake of the collapse of the then-Soviet Union? If these ratings are consistent, they should be potent predictors if a member supported the V-22 for ideological reasons.

It is anticipated that members that are pro-defense or hawkish (i.e., a high NSI rating) will support the V-22.

D. OVERVIEW

Present in all of these hypotheses—parochialism, MIC, and personal preference—is the goal of re-election.[115] The parochial hypothesis holds that members fear the wrath of their constituents should they vote against a defense program that may provide economic benefits to their district or state. Thus members vote to support programs that provide economic benefits to their constituents. The MIC hypothesis contends that members support programs due to PAC contributions by the respective defense contractors. The personal preference hypothesis states that members vote according to their own personal beliefs and views regardless of any local economic benefits (with the exception of those districts hosting prime contractors) or PAC contributions.

The deferential hypothesis is not considered as recent events such as the force structure proposals put forth by Rep. Les Aspin (D-WI) only further reinforce earlier studies that found the familiar model of "the Executive proposes

while the Congress disposes" to be outdated.[116] While the possibility of logrolling—the exchange of voting support on different bills by different members of Congress which—exists, it will not be considered here due to its "transparency" and "indetectability."[117] The practice of cue-following—searching for trusted colleagues to provide cues as to which way the member should vote on issues about which he or she is uninformed or unsure—may also be present but, like logrolling, its "indetectability" makes its consideration an impossibility.[118]

With a better understanding of these competing explanations of congressional defense voting behavior, the next chapter describes the V-22 program origin and the bitter struggle that ensued following the program cancellation in 1989.

ENDNOTES TO CHAPTER II

1. Other examples of defense related pork barrel spending are research grants and U.S. Army Corps of Engineer projects. See Joseph P. Martine, "Pork Invades the Lab," *Reason*, Vol. 20, No. 10 (March 1989), pp. 32-5; and John Hind, "The Political Economy of Pork: Project Selection at the U.S. Army Corps of Engineers," *American Political Science Review*, Vol. 85, No. 2 (June 1991), pp. 429-56.

2. Gerald Lipson and Walter Fitzgerald, *Porkbarrel: The Unexpurgated Grace Commission Story of Congressional Profligacy* (Washington, D.C.: Cato Institute, 1984), p. xviii.

3. Walter S. Mossberg, "Pork-Barrel Politics: Some Congressmen Treat Military Budget As Source for Patronage," *Wall Street Journal*, 15 April 1983, pp. 1, 22.

4. Arnold effectively puts the accomplishments of the esteemed representative from South Carolina in proper perspective. He claims Rivers was unique and was an entrepreneur and a solid ally of the Pentagon. R. Douglas Arnold, *Congress and the Bureaucracy* (New Haven: Yale University Press, 1979), pp. 122-4.

5. Robert Higgs, "Beware the Pork Hawk," *Reason*, Vol.21, No. 2 (June 1989), pp. 28-34. Higgs notes elsewhere that over the years, one thing has remained the same: defense-related jobs have served continuously as a major determinant of congressional defense actions. Higgs, "Introduction: Fifty Years of Arms, Politics, and the Economy," in *Arms, Politics, and the Economy* (New York: Holmes and Meier, 1990), p. xix. Also see David H. Hackworth, "You in Congress, Listen Up," Newsweek, 8 June 1992, p. 30.

6. For a rebuttal to Higgs see Kenneth R. Mayer, *The Political Economy of Defense Contracting* (New Haven: Yale University Press, 1991), pp. 218-9.

7. See Higgs, "Beware the Pork Hawk," pp. 28-32.

8. James M. Lindsay, *Congress and Nuclear Weapons* (Baltimore: John Hopkins University Press, 1991), p. 138. In an earlier work, Lindsay notes that the crucial fault line in the defense budget cuts between military bases on one hand and weapons programs on the other. Lindsay, "Congress and the Defense Budget: Parochialism or Policy?," in *Arms, Politics, and the Economy*,

ed. Robert Higgs (New York: Holmes and Meier, 1990), p. 175. For other studies indicating the parochial nature of congressional behavior regarding military bases see R. Douglas Arnold, *Congress and the Bureaucracy* (New Haven: Yale University press, 1979), pp. 95-128.; idem, *The Logic of Congressional Action* (New Haven: Yale University Press, 1990), pp. 140-1; Democratic Study Group, *The Great Base Closing Ploy* (Washington, D.C.: Democratic Study Group, 1990); Gerald Lipson and Walter Fitzgerald, *Porkbarrel: The Unexpurgated Grace Commission Story of Congressional Profligacy* (Washington, D.C.: Cato Institute, 1984), pp. 12-36; and Charlotte Twight, "Institutional Underpinnings of Parochialism: The Case of Military Base Closures," *Cato Journal*, Vol. 9, No. 1 (Spring/Summer 1989), pp. 73-105. Additional evidence is offered by Ralph G. Carter who found that local economic benefits have a greater direct and indirect effect on non-procurement matters (military bases) than on procurement decisions. Ralph G. Carter, "Senate Defense Budgeting, 1981-1988: The Impacts of Ideology, Party, and Constituency Benefit on the Decision to Support the President," *American Politics Quarterly*, Vol. 17, No. 3 (July 1989), pp. 343-5.

9. A semi-permanent benefit is one where the recipients expect the flow of benefits to continue for many years. Arnold, *Congress and the Bureaucracy*, pp. 70-1, 101.

10. *Ibid*, p. 101.

11. Les Aspin, "The Defense Budget and Foreign Policy: The Role of Congress," *Daedalus*, Vol. 104, No. 3 (Summer 1975), p. 155.

12. Mayhew, pp. 116-9.

13. Carol F. Goss, Military Committee Membership and Defense Related Benefits in the House of Representatives," *Western Political Quarterly*, Vol. 25, No. 3 (June 1972), p. 231.

14. Arnold, *Congress and the Bureaucracy*, pp. 119-20.

15. Ritt, p. 487. Also see Cass Peterson, "Seniority Doesn't Unlock Pork Barrel," *Washington Post*, 26 October 1986, p. A6.

16. Bruce A. Ray, "Military Committee Membership in the House of Representatives and the Allocation of Defense DepartmentOutlays," *Western Political Quarterly* 34 (June 1981), p. 234.

17. Ray, "Congressional Promotion of District Interests: Does Power on the Hill Really Make a Difference?" in *Political Benefits: Empirical Studies of American*

Public Programs, ed. Barry S. Rundquist (Lexington, MA: Lexington Books, 1980), p. 30.

18. He also notes that when such losses do occur, the affected member(s) are compensated either the following year or in some other segment of the federal budget that same year. Ray, "Congressional Losers in the U.S. Federal Spending Process," *Legislative Studies Quarterly* 5 (August 1980), p. 363.

19. Barry S. Rundquist "On Testing a Military Industrial Complex Theory," *American Politics Quarterly* 6 (January 1978), pp. 44-5. This finding is consistent with earlier findings by Rundquist. See Rundquist, "Congressional Influence on the Distribution of Prime Military Contracts," (Ph.D. diss., Stanford University, 1974). For an evaluation of this earlier work see Arnold, Congress and the Bureaucracy, pp. 222-3.

20. The authors also noted that constituents did not benefit relative to what they received before or after they were represented on military committees. Rundquist and David E. Griffith, "An Interrupted Time-Series Test of the Distributive Theory of Military Policy Making," *Western Political Quarterly* 29 (December 1976), p. 625.

21. Rundquist and John A. Ferejohn, "Observations on a Distributive Theory of Policy-Making: Two American Expenditure Programs Compared," in *Comparative Public Policy: Issues, Theories, and Methods*, eds. Craig Liske, William Loehr, and John McCamant (New York: John Wiley and Sons, 1975), p. 104.

22. Charles S. Bullock, III, "Motivations for U.S. Congressional Committee Preferences: Freshman of the 92nd Congress," *Legislative Studies Quarterly* 1 (May 1976), p. 208.

23. Steven S. Smith and Christopher J. Deering, "Changing Motives for Committee Preferences of New Members of the U.S. House," *Legislative Studies Quarterly* 8 (May 1983), p. 279.

24. Lindsay, "Congress and the Defense Budget: Parochialism or Policy?," p. 177.

25. *Ibid.*

26. James Clotfelter, "Senate Voting and Constituency Stake in Defense Spending," *Journal of Politics* 32 (November 1970), pp. 981-3.

27. Bruce Russett, *What Price Vigilance? The Burdens of National Defense* (New Haven: Yale University Press, 1970), pp. 70-89.

28. Charles Gray and Glenn W. Gregory, "Military Spending and Senate Voting," *Journal of Peace Research* 5 (1968), p. 52.

29. Frank Whelon Wayman, "Arms Control and Strategic Voting in the U.S. Senate," *Journal of Conflict Resolution* 29 (June 1985), pp. 237-8, 249.

30. Stephen A. Cobb, "Defense Spending and Foreign Policy in the House of Representatives," *Journal of Conflict Resolution* 13 (September 1969), p. 365.

31. Cobb, "The United States Senate and the Impact of Defense Spending Concentrations," in *Testing the Theory of the Military Industrial Complex*, ed. Steven Rosen (Lexington, MA: D.C. Heath, 1973), p. 219. Cobb also addresses the differences between his findings and those of Russett. *Ibid*, pp. 213-9.

32. Cobb, "The Impact of Defense Spending on Senatorial Voting Behavior: A Study of Foreign Policy Feedback," in *Sage International Yearbook of Foreign Policy Studies*, ed. Patrick J. McGowan (Beverly Hills, CA: SAGE, 1973), pp. 150-3.

33. Ray, "Defense Department Spending and 'Hawkish' Voting in the House of Representatives," *Western Political Quarterly* 34 (September 1981), p. 444.

34. Neil Heighberger, "Representative's Constituency and National Security," *Western Political Quarterly* 26 (June 1973), pp. 233-4. This may have been due to the unit of measure employed. The percentage of active duty military personnel is not a good measure because a representative would have little to fear by voting against their interests. Most military personnel are not residents of the district or state in which they are stationed and thus do not make up that members electoral constituency.

35. Wayne Moyer, "House Voting on Defense: An Ideological Explanation," in *Military Force and American Security*, ed. Bruce Russett and Alfred Stepan (New York: Harper and Roe, 1973), p. 134.

36. Robert A. Berstein and William W. Anthony, "The ABM Issue in the U.S. Senate, 1968-70: The Importance of Ideology," *American Political Science Review* 68 (September 1974), p. 1199.

37. Richard Fleisher, "Economic Benefit, Ideology, and Senate Voting on the B-1 Bomber," *American Politics Quarterly* 13 (April 1985), pp. 205-7, 209.

38. Lindsay, "Parochialism, Policy, and Constituency Constraints: Congressional Voting on Strategic Weapons Systems," American *Journal of Political Science*, Vol. 34, No. 4 (November 1990), pp. 942-3, 954-7. Also see Lindsay, *Congress and Nuclear Weapons* (Baltimore: John Hopkins University Press, 1991).

39. Lindsay, "Testing the Parochial Hypothesis: Congress and the Strategic Defense Initiative," *Journal of Politics*, Vol. 53, No. 3 (August 1991), p. 868.

40. Kenneth R. Mayer, "The Politics and Economics of Defense Contracting," (Ph.D. diss., Yale University, 1988), p. 198.

41. For further discussion along these lines see Lindsay, "Congress and the Defense Budget: Parochialism or Policy?," pp. 178-9.

42. See Marc Pilisuk and Thomas Hayden, "Is There a Military-Industrial Complex?" in *The Military-Industrial Complex*, ed., Carroll W. Pursell, Jr., (New York: Harper and Row, 1972), pp. 51-80.

43. Les Aspin, foreword to *The Military Industrial Complex: A Historical Perspective*, by Paul A. C. Koistinen (New York: Praeger, 1980), p. vii.

44. Ralph E. Lapp, "The Military-Industrial Complex: 1969," in *The Military-Industrial Complex and U.S. Foreign Policy*, Omar L. Carey, ed., (Pullman, WA: Washington State University Press, 1969), p. 44. Also see Gordon Adams, *The Iron Triangle: The Politics of Military Contracting* (New York: Council on Economic Priorities, 1981).

45. Lapp, p. 44.

46. Steven Rosen, "Testing the Theory of the Military-Industrial Complex," in *Testing the Theory of the Military-Industrial Complex* (Lexington,MA: Lexington Books, 1973), pp. 2-3.

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49. Koistinen, p. 14.

50. Steven Rosen, ed., *Testing the Theory of the Military-Industrial Complex* (Lexington, MA: Lexington Books, 1973).

51. *Ibid*, pp. 23-5. For more information on weapons acquisition see J. Ronald Fox, *Arming America: How the U.S. Buys Weapons* (Cambridge: Harvard University Press, 1974); idem, *The Defense Management Challenge: Weapons Acquisition* (Boston: Harvard Business School Press, 1988); Fen Olser Hampson, *Unguided Missiles: How America Buys Its Weapons* (New York: W.W. Norton & Company, 1989); Richard Stubbing and Richard Mendel, *The Defense Game: An Insider Explores the Astonishing Realities of America's Defense Establishment* (New York: Harper and Row, 1986); William H. Gregory, *The Defense Procurement Mess* (Lexington, Ma: Lexington Books, 1989); Thomas L. McNaughter, *New Weapons, Old Politics* (Washington, D.C.: The Brookings Institution, 1989).; Mayer, "The Politics and Economics of Defense Contacting," pp. 58-149.

52. Condensed from Rosen, *Testing the Theory of the Military-Industrial Complex*, pp. 4-25.

53. Mayer, "The Politics and Economics of Defense Contracting," pp. 211-38, 269. Also see Mayer, "Patterns of Congressional Influence in Defense Contracting," in *Arms, Politics, and the Economy*, ed. Robert Higgs (New York: Holmes and Meier, 1990), pp. 202-35.

54. The top five states were California (24.8%), Texas (9.3%), Virginia (5.8%), Massachusetts (5.2%), and Florida (5.1%). The top ten states accounted for over two-thirds of all prime contract awards. Washington Headquarters Services, Directorate for Information Operations and Reports, *Department of*

Defense Prime Contract Awards by State: First Half Fiscal Year 1992 (Washington, D.C.: USGPO, 1992), p. 4.

55. Mayer, "The Politics and Economics of Defense Contracting," pp. 243-69.

56. Some examples of this practice include the B-1 bomber, AH-64A Apache helicopter, and the Sgt. York Division Air Defense Gun (DIVAD). *Ibid*, pp. 243-69.

57. Mayer, *The Political Economy of Defense Contracting*, pp. 77-86.

58. *Ibid*, p. 96.

59. *Ibid*, p. 120.

60. Janet Grenzke, "Candidate Attributes and PAC Contributions," *Western Political Quarterly*, Vol. 42, No. 2 (June 1989), p. 260.

61. Mayer, *The Political Economy of Defense Contracting*, p. 95.

62. *Ibid*, p. 99.

63. John R. Wright, "Contributions, Lobbying, and Committee Voting in the U.S. House of Representatives," *American Political Science Review*, Vol. 84, No. 2 (June 1990), pp. 433-4.

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72. For example see James Lindsay, "Testing the Parochial Hypothesis: Congress and the Strategic Defense Initiative," *Journal of Politics*, Vol. 53, No. 3 (August 1991), pp. 860-76.

73. The following paragraphs on the make-up of personal preference relies heavily on related work done in the field of international relations by K.J. Holsti. See Kalevi J. Holsti, *International Politics: A Framework for Analysis*, 5th ed., (Englewood Cliffs: Prentice Hall, 1988), pp. 320-6.

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75. *Ibid*, p. 323.

76. John W. Kingdon, *Congressmen's Voting Decisions* (New York: Harper and Row, 1973), p. 31.

77. *Ibid*, pp. 42-4. Also see Lewis Froman, Jr., *Congressmen and Their Constituencies* (Chicago: Rand McNally & Company, 1963), p. 9.

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79. The phrase "loose in the harness" was adopted by Aage Clausen from the poet Robert Frost. See Aage R. Clausen, *How Congressmen Decide: A Policy Focus* (New York: St. Martin's Press, 1973), pp. 119-20.

80. Kenny J. Whitby and Timothy Bledsoe, "The Impact of Policy Voting on the Electoral Fortunes of Senate Incumbents," *Western Political Quarterly*, Vol. 39, No. 4 (December 1985), p. 698.

81. Emphasis added. Stephen D. Shaffer and George A. Chressanthis, "Accountability and U.S. Senate Elections: A Multivariate Analysis," *Western Political Quarterly*, Vol. 49, No. 3 (September 1991), p. 635.

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83. *Ibid.*

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87. Lindsay, *Congress and Nuclear Weapons*, p. 127.

88. Lindsay, *Congress and Nuclear Weapons*, pp. 85, 112-3. Also see Lindsay, "Parochialism, Policy, and Constituency Constraints: Congressional Voting on Strategic Weapons Systems," pp. 936-60.

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III: V-22 PROGRAM HISTORY AND BUDGETARY ENVIRONMENT

A. V-22 PROGRAM OVERVIEW[1]

The V-22 is the latest iteration of tiltrotor technology that was first developed in the 1950s.[2] It is a hybrid aircraft that can take off like a helicopter and, by rotating its outboard nacelles (engine and propeller assembly), transition to forward flight similar to a fixed-wing turbo-prop aircraft. It incorporates advanced composite materials and is built under a fixed price contract by the joint team of Bell Helicopter Textron and Boeing Helicopter (hereafter referred to as Bell-Boeing) and involves numerous sub-contractors.[3] As a result of the withdrawal by the U.S. Army in 1983, the U.S. Navy is the current program manager.[4] As of 20 July 1992, V-22 test aircraft have logged 763 hours during 635 flights. The program was in Full Scale Development (FSD) testing and 80% of the evaluation had been completed.[5]

Due to a re-evaluation of the mission requirements for the medium lift replacement aircraft, a derivative version of the baseline V-22 is currently under Engineering and Manufacturing development by the Bell-Boeing Tiltrotor Team.[6] The $550 million development contract award, which could be worth $2.4 billion through 1998, was announced by the Pentagon on 22 October 1992.[7] The Bell-Boeing team will build four new production representative aircraft and utilize two

full scale development models of the V-22 (numbers 2 and 3) to complete development evaluations.[8]

In an effort to reduce the cost and weight of the new derivative version of the V-22, Bell-Boeing will perform affordability and producibility trade studies. These studies will result in at least a 20% reduction in production recurring costs.[9] These studies will be used to develop the most effective configuration for the tiltrotor derivative prior to the production of the first two new units. Initial Operational Capability (IOC) for the Marine Corps is planned for FY 1998 and unit costs for the derivative version of the V-22 could range from $22.5 to $15.6 million dependent upon which trade-offs are adopted by the Navy.[10]

Also included in the proposal by Bell-Boeing is a tie-in to low rate initial production of the aircraft (1 unit/month). Another proposal put forth by Bell-Boeing is the development and evaluation of the derivative V-22 for utilization in special operations and combat search and rescue. These evaluations would be conducted utilizing aircraft numbers two and eight. This action would allow the preservation of the multimission capabilities of the V-22 thus making it available to other government and military services and possibly further lowering unit costs due to increased production.[11]

1. V-22 Program Origins

The development of the V-22 is the result of what was once a multi-service requirement to conduct combat missions using vertical/short take-off and landing (V/STOL) capabilities not currently available.[12] The program grew out

of a decision by Department of Defense officials that the requirements pending from the services for new vertical lift aircraft might be met by a single multimission aircraft. Thus the Marine Corps' HXM program, which was to develop an advanced vertical lift assault transport, was transformed into the Joint Services Vertical Lift Aircraft (JVX) program.[13]

The earlier HXM development program was primarily driven by the Marine Corps' desire to replace their aging and finite fleet of CH-46Es *Sea Knight* helicopters which entered service almost thirty years ago.[14] To fulfill its new doctrine of maneuver warfare and over-the-horizon (OTH) amphibious assault, the Marine Corps has undertaken a massive modernization program to ensure effective operations into the next century.[15] The V-22 was designed to meet the requirements of increased speed, range, lift, and survivability that OTH amphibious assaults in hostile environments may require.

The Army also foresaw a need for an aircraft with the speed and range capabilities not found in its helicopter inventory in the 1980s. In addition to utilizing the JVX aircraft (that evolved into the V-22) for combat support and medical evacuation (MEDEVAC), the Army also hoped to develop an electronic warfare variant of the tiltrotor aircraft.[16] Prior to its withdrawal from the program in 1983, the Army was the executive service for the JVX and had a projected requirement of 231 units.[17]

The Navy and Air Force had a smaller requirement for an aircraft such as the JVX. The Navy intended to utilize the new aircraft for strike rescue (or

combat search and rescue) and as a possible anti-submarine warfare platform. Its initial requirement was for 50 aircraft. The Air Force planned to use the JVX aircraft in support of long range special operations. It had an initial requirement of 200 units.[18]

The Army withdrawal as executive service for the JVX program in 1983 was the result of declining resources.[19] Faced with a trade-off between funding for their Light Helicopter Experiment (LHX) and the JVX multiservice aircraft, the Army chose to make the LHX their number one aviation development program. This action eliminated the need for 231 aircraft and increased the unit cost.[20]

The Army also felt that since the replacement of the CH-46E was a high priority within the Marines Corps, they would be able to reenter the tiltrotor porgram at a future date and ultimately obtain both aircraft. In spite of officially withdrawing in 1988 for "budgetary" reasons, industry executive, Greg McAdams of Boeing Helicopters, notes that the Army still has a documented requirement for the V-22 MEDEVAC, SOF, and combat support.

The V-22 was in danger of becoming a single service program. Actions by the Joint Requirements Oversight Council (JROC) in late July 1992 revised the mission requirements for the aircraft filling the role of medium lift, amphibious assault.[21] The "revised V-22" must now only meet the U.S. Marine Corps' requirements for conducting combat amphibious assault. The JROC has not dropped plans to use the aircraft for Air Force long-range special operations and Navy combat search and rescue missions and the Joint Services Operational

Requirement (JSOR) remains a valid document.[22] Among the major changes are the reductions in troop capacity from 24 to 18, aircraft speed requirement from 300 knots (kts) to 180 kts.[23] These revised requirements now open the competition for a medium lift replacement to lower cost helicopters such as Sikorsky's S-92.[24]

B. POLITICS OF THE V-22

The events over the past few years involving the V-22 provide an insight into the moves and countermoves by each interested party in the pursuit of their goal. The major players are the Office of the Secretary of Defense (OSD), the Congress, and the Bell-Boeing V-22 development team. To a lesser extent, the Marine Corps had some impact on the debate surrounding the V-22 but hierarchical obligations prevented them from openly advocating the program.

Key personalities within OSD included the Secretary of Defense Richard B. Cheney, Acting Secretary of the Navy (then-DoD Comptroller) Sean O'Keefe, Donald Yockey, Under Secretary for Acquisition, and Dr. David Chu, head of the Office of Programs Analysis and Evaluation (PA&E). These key members of OSD opposed the V-22 based on its high cost and perceived narrow mission focus.

Within Congress, the House usually took the lead on efforts to continue the V-22. Key members of the House included Rep. Curt Weldon (R-PA) whose district includes Ridley Park which is the home of Boeing Helicopters, and Rep. Peter Geren (D-TX) whose Fort Worth district is home to Bell Helicopter-Textron

Incorporated (BHTI). Other House members included Rep. Dick Murtha (D-PA) and Rep. J. McDade (R-PA) who are respectively the chairman and ranking minority member on the House Appropriations Defense subcommittee. The key members in the Senate were Sen. John Glenn (D-OH), Sen. Ted Stevens (R-AK) and Sen Arlen Specter (R-PA). These senators were usually out in front leading the fight to save the V-22.

The Bell-Boeing team acts together to further educate members of Congress about the attributes of the V-22. Conversations with knowledgeable personnel from both Textron Industries and Boeing indicated that their political lobbyists functioned as "information brokers" for the V-22 program. As noted in the preceding chapter, the donations from the respective political action committees (PACs) afford access to the member but the information provided has the greatest impact on a member.

As previously mentioned, the Marine Corps is somewhat handcuffed in their support for the program. The public chastisement of the Chief of Staff of the Air Force, General Larry Welch, by Secretary Cheney on 24 March 1989 after only eight days in office sent a message to the uniformed military as to who was in charge.[25] The subsequent firing of the following Chief of Staff of the Air Force, General Michael Dugan, during Operation DESERT SHIELD made the message crystal clear as to the fate that awaited uniformed military officers that did not follow the "party line."[26] It is common knowledge that Congress has had a long "love affair" with the Marine Corps and that a "Marine Corps lobby" exists on

Capital Hill. As confirmed by a senior Senate staffer, however, this lobby is highly amorphous and any liaisons between members and Marine Corps personnel occur in "backrooms and hallways" with "no evidence left behind." Any response to questions regarding the V-22 are usually framed within the need to solve their medium lift deficiency.It is from the perspective of these actors that the events revolving around the V-22 will be detailed.

1. 1982-1988: A Kinder, Gentler Budget Environment

The 1980s provided a nurturing environment for the development of the V-22 from its XV-15 predecessor. In the early 1980s, the program was not as fully funded as the Executive branch would have desired. Once the technology was determined to be with acceptable risk levels, the program received strong support from Congress. Table 3.1 provides the budgetary history through FY 1989 regarding the V-22.

The Army withdrawal in 1988, reduction in the quantities of required aircraft by both the Air Force and Navy, and a shift in procurement strategies—Cost Plus to a Fixed Price contract—had pushed the total cost of the V-22 program to $25.9 billion for 663 aircraft in 1988. As a result of technical problems, the program was approximately nine months behind schedule.[27] Included in the FY89 Authorization and Appropriations bills were funds for the procurement of long lead items for twelve production-like aircraft.[28]

TABLE 3.1: V-22 BUDGETARY HISTORY: FY83-89

(All figures in $ millions)

Fiscal Year	Exec. Req.	House Auth.	Senate Auth.	Conf. Auth.	House Approp	Senate Approp	Conf. Approp
1983 & prior	60	0	5	5	35	5	37
1984	104	85	53	43	89	89	89
1985	200	179	199	189	189	189	189
1986	609	554	584	584	570	584	582
1987	402	427	387	387	380	431	426
1988	470	480	480	488	470	470	502
1989	641	641	641	641	646	641	667

2. 1989: Opening Shots and Unexpected Saviors

The 14 April budget agreement between President Bush and Congressional leaders stipulated that the executive had to cut $9.7 billion from its $305.6 billion FY90 defense budget submission. Newly appointed Secretary Cheney proposed accomplishing the savings by terminating several major programs. Cancellation of the V-22 would produce $1.6 in immediate savings and $7.0 in the "out years."[29] On 25 April Secretary Cheney announced the termination of the V-22 program while testifying before the House Armed Services Committee on the revised FY90 defense budget. He cited the price tag of $23 billion for 552 Ospreys as too expensive and too narrowly mission

focused.[30] The PA&E division of OSD was influential in convincing the Secretary to cancel the V-22 in favor of a mix of H-60s and H-53s to fulfill the medium lift mission at a less expensive and more cost effective level.[31] In an effort to start building this medium lift replacement mixture, DoD revised its FY90 budget submission for CH-53Es from 3 to 23 helicopters requiring an additional $349 million.[32]

Prior to Secretary Cheney's announcement of termination of the V-22 program, the Senate adopted a non-binding resolution on 22 April urging the President to restore full funding to the V-22.[33] The real action would come in the House which traditionally acts on its version of the Defense Authorization Bill before the Senate.

It was at the sub-committee level that the V-22 almost became extinct. The first action transpired in the House Armed Services Procurement subcommittee. The Procurement subcommittee is chaired by Rep. Les Aspin (D-WI) who also happens to chair the full House Armed services Committee (HASC). In an attempt to keep the Bush administration's first defense budget from being stuffed with "filler," Rep. Aspin joined forces with the Pentagon in what one writer referred to as "pork barrel deterrence."[34] He sent a clear message to the subcommittee members that "There was no room even for the deserving add-ons, let alone the ones that go oink."[35] On 20 June, Rep Aspin made good on his promise to "vote up or down on taking the procurement section of Secretary Cheney's request as is, with no add-ons."[36] He led a predominately Republican

coalition (3D - 7R) over most Democrats (8D - 1R) on the Procurement subcommittee to endorse without change the weapons procurement section of the revised FY90 defense budget.[37]

The House Armed Services Research and Development subcommittee kept the V-22 alive by shifting $300 million from the B-2 development account and $51 million from the CH-53E account that Secretary Cheney had planned to use as a replacement for the Osprey. In subcommittee, Rep. Weldon led the fight for the V-22 and funding was restored due to an agreement that when the full committee met, members would be willing to restore the $300 million to the B-2 development account provided the same amount was transferred to the Osprey account from the B-2 production account.[38]

When the HASC met on 27 June, a spirited two day debate ensued over procedural efforts to keep the administration's procurement budget intact and attempts to resurrect programs that Secretary Cheney had eliminated to control Pentagon spending.[39] Rep. Marvin Leath (D-TX) offered an amendment that would have provided, among other items, $351 million in development funds and $157 million in long lead procurement funds to the V-22 but it was defeated 31-21.[40] A joint amendment offered by Reps. Weldon and Sisisky (D-VA) that provided $230 million for F-14D procurement and $157 million for V-22 procurement was adopted 28-15. The bill payer for the Osprey procurement funding was about half of the administration requested CH-53Es ($157 million).[41]

The moment of truth for the V-22 program came when HASC Chairman Aspin reserved the right to offer the revised Cheney procurement budget request as he had done previously on his Procurement subcommittee. Reps. Ron Dellums (D-CA) and Patricia Schroeder (D-CO) temporarily held off voting until the end of the count and then delivered the final two negative votes that tied the count (9D, 17R - 22D, 4R) and defeated the Cheney package.[42]

Reps. Dellums and Schroeder are liberal democrats that are not usually supportive of defense expenditures. Their "support" for the V-22 and F-14D procurement funding came more from their opposition to the B-2 and does not represent a genuine endorsement of either program.[43] Yet, they became the unexpected saviors of the V-22. When the meeting finally adjourned, the V-22 had funding levels of $351 million for development and $157 million for procurement.[44]

Activity in the House Appropriations Defense subcommittee—chairman Rep. Murtha and ranking minority member Rep. McDade, both from Pennsylvania—echoed the proposed funding levels as contained in the House FY90 Defense Authorization bill.[45] Actions by the full committee resulted in no changes to the subcommittee proposed V-22 funding levels.

The Senate was much closer to Secretary Cheney's defense budget request for FY90. The Senate Armed Services Committee (SASC) authorized no funding for V-22 procurement but did provide $255 million for continued development and test completion.[46] The SASC wanted to ensure that the V-22

flight test program was completed in case the program could "drum-up" other customers in the Pentagon or in the private sector. This could lead to increased quantities for purchase that would drive down the unit cost possibly to the point of affordability by the Marine Corps. The SASC approved the request for 23 CH-53Es for use as the Osprey replacement.[47]

The Senate Appropriations Defense subcommittee provided a moment of excitement when it obligated zero funding for the V-22. Sen. Arlen Specter (R-PA) led the fight to save the V-22 and other defense projects in Pennsylvania. His performance earned him praise from subcommittee Chairman Sen. Daniel Inouye (D-HI) who told Sen. Specter "You've done exceedingly well ... Your constituents should be very happy."[48] Only after Sen. Specter and other members were assured that programs in their state that were omitted from the subcommittee's recommendations would be accepted in conference with the House did the measure move forward to the full committee.[49]

Funding was restored to the V-22 sooner than Sen. Inouye had predicted as the Senate Appropriations Committee met on 14 September and appropriated $255 million for the continued development. The committee also rejected the administration's request for 23 CH-53Es and funded only 3 of these aircraft ($62 million).[50]

Only during debate in the House on the FY90 Defense Authorization Bill was the V-22 challenged. Rep. Bill Dickinson (R-AL) attempted to go after the V-22 and F-14D separately and remove them from the bill. The House Democratic

leadership, however, rejected this overture and forced a vote on a single amendment to strike funding for the V-22 and F-14D. The coalition held and the amendment was defeated 143-278.[51]

Activity on the part of the prime contractors and the Marine Corps during the FY90 budget cycle was limited. When the decision to cancel the V-22 was first suggested, Marine Corps and other service officials lobbied hard on behalf for the V-22. The Marine Corps suggested other programmatic offsets such as the M-1 tank to fund continued development of the V-22. Bell-Boeing offered to re-structure the program, thus reducing up-front costs. These efforts, however, failed to reverse the V-22 cancellation decision.[52]

In retrospect, 1989 was the "acid test' for the V-22. The FY90 defense budget cycle was the last time the V-22 faced extinction due to Congressional activity. The next three years would be characterized by continued Congressional authorizations and appropriations countered by OSD efforts to not spend the allocated funds in pursuit of their quest to terminate the Osprey program. Each chambers authorization and appropriation levels for the V-22 covering FY90-93 are provided in Tables 3.2 and 3.3 respectively. All funding is for Research and Development (R&D). Although some funding was authorized and appropriated for long lead procurement ($157 million in FY90 and $365 million in FY91), these funds are classified as R&D since the advanced procurement was for production representative aircraft.

TABLE 3.2: V-22 AUTHORIZATION SUMMARY: FY90-93

(All figures in $ millions)

Fiscal Year	Exec. Req.	House			Senate			Auth. in Conf.		
		New $	Prev. $	Total $	New $	Prev $	Ttl $	New $	Prev $	Ttl $
1990	0	508		508	255		255	255		255
1991	0	403	200	603	38	200	238	403	200	603
1992	0	625	365	990	0	365	365	625	365	990
1993	0	755	790	1545	755	790	1545	755	790	1545

Source: FY90, 91, 92, and FY93 Defense Authorization and Appropriations Bills.

TABLE 3.3: V-22 APPROPRIATION SUMMARY: FY90-93

(All figures in $ millions)

Fiscal Year	Exec. Req.	House			Senate			Approp. in Conf.		
		New $	Prev. $	Total $	New $	Prev. $	Total $	New $	Prev. $	Ttl $
1990	0	508		508	255		255	255		255
1991	0	403	200	603	38	200	238	418	200	618[1]
1992	0	625	365	990	165	0	165	625	165	790
1993	0	755	0	755	0	0	0	755	0	755

[1] $15 million for procurement of SOF V-22.

Source: FY90, 91, 92, and FY93 Defense Authorization and Appropriations Bills.

3. 1990: We Ain't Going to Spend the Money

As anticipated, the Administration's FY91 defense budget submission contained no funding for the V-22. What it did contain was a proposal to take $1.4 billion from Congressionally appropriated FY90 funds and spend them on FY91 programs that the Administration considered more important. The proposal also included $835 million in deferrals of which $200 million had been allocated for the V-22. Then-DoD Comptroller Sean O'Keefe summed up the Administration's position when he said "We ain't going to spend the money [for the purposes Congress intended]."[53] The Administration was standing firm in its decision to cancel the V-22 and included the program on its "weapons hit list."[54]

Any attempt by the executive branch to encroach upon Congress's power of the purse is met with stiff opposition. This case was no exception. Both a General Accounting Office (GAO) review and a ruling by the Comptroller General of the United States found the deferral involving the $200 million in V-22 funds to be unauthorized.[55] To ensure that the funds were spent as Congress desired, language was inserted into the FY91 Dire Emergency Spending Bill.[56] The funds were eventually released and utilized to contract for production improvements to the V-22 engine and transmission.[57]

As shown by Tables 3.2 and 3.3, the V-22 received increased funding during this defense budget cycle. Chairman Aspin did not oppose the V-22 and included it in his subcommittee and committee authorization recommendations to the House.[58] Also of note is that the House dominated the Senate during

conferences with regard to V-22 funding levels and funding utilization. This activity is explained by the use of the V-22 program as a bargaining chip by the Senate in order to obtain concessions from the House on B-2 and Strategic Defense Initiative (SDI) funding levels.[59]

The year 1990 could also be called the *Year of the Study*. Much of the controversy over the true cost effectiveness of the V-22 program versus the Administration's proposed mixture of H60s/H-53s centered around a Cost and Operational Effectiveness Analysis (COEA) conducted by the Institute for Defense Analysis (IDA).[60] The study was directed by Congress as part of the FY90 Defense Authorization bill, however, the Pentagon was the contracting agent. As such, it retained a significant amount of control over what information contained in the study would be released.[61]

In addition to its unsuccessful deferral of appropriated funds, OSD pursued a two-pronged strategy to terminate the V-22. The first prong was characterized by the information control. OSD failed to submit several reports as required by the FY90 Defense Authorization bill.[62] The failure to comply was cited by the SASC as its reason for not providing any procurement funding to the V-22 (see Table 3.2).[63] OSD also withheld release of the V-22 COEA study done by IDA despite numerous requests by members of Congress to obtain the report.[64] When the COEA was finally released, Dr. David Chu testified to the Senate Defense Appropriations subcommittee that the key assumptions of the IDA

study were flawed and that the V-22 program was simply unaffordable regardless of the COEA conclusions.[65]

The second prong of the strategy was to begin obtaining the CH-53Es that were required by the PA&E mix regarding the fulfillment of the medium lift mission. Accordingly, the Administration requested $377 million for the procurement of 23 CH-53Es in FY91 and $58 million for advance procurement of CH-53Es in FY92.

Congress continued to fund the V-22 as shown by Tables 2 and 3. It also utilized its power of the purse to thwart Executive attempts to build-up the CH-53E fleet. The FY91 Defense Authorization Bill provided zero funding for CH-53Es.[66] The FY91 Defense Appropriations Bill provided $315 million for twelve MH-53Es.[67] To further aggravate OSD efforts, the twelve MH-53Es were designated for use by the Naval Reserve.[68]

Advocates for the V-22 in the Congress cited the IDA study as proof positive that the Osprey was the best option to the medium lift and amphibious assault needs of the Marine Corps and other participating services.[69] Supporters also cited a GAO study that stated "... helicopters proved to be highly vulnerable... to unsophisticated gun systems" as further evidence that the V-22 was the best choice for amphibious assault because of its enhanced survivability.[70] Opponents of the program echoed OSD criticisms of the COEA and used a study by the GAO to strengthen opposition to the aircraft. The GAO

study characterized the V-22 program as "high risk."[71] The V-22 opponents, however, failed to change a sufficient majority of their colleagues' minds.

Bell-Boeing also contributed to the flood of studies surrounding the cost effectiveness of the V-22. It released its first study in April. The study was conducted by BDM International and found that it proved dramatically more survivable and effective than the alternatives available to perform the Marine Corps' amphibious assault mission.[72] A second study, released in September, was conducted by the Department of Energy's Lawrence Livermore National Laboratory and concluded that a fleet of tiltrotor aircraft would outperform helicopters in offshore reinforcement of a Marine Corps unit under attack.[73] Other activities by the two prime contractors included landing an XV-15 at the nation's capitol in celebration of "Tiltrotor Appreciation Day" in April, publicizing the plight of the Osprey, and refuting OSD claims that the Osprey test program was way behind schedule.[74]

The Marine Corps was very vocal compared to the previous year. It is possible that intensified stand-off between the Executive and Congress forced the Marine Corps to make *their* position on the V-22 program clear. The Marine Corps official in charge of the V-22 program stated he was confident that Congress would restore funding to the program and that the V-22 was the only aircraft that can meet the Marine Corps requirements for amphibious assault.[75] Additional Marine Corps support for the embattled V-22 came from its Commandant, General Alfred Gray who noted that the V-22 was the best choice for the Marine's

amphibious assault mission.[76] Lieutenant General Charles Pitman, Marine Deputy Chief of Staff for Aviation, offered support for the program by delivering a warning to the Senate Appropriations Defense subcommittee that it was likely that OSD would seek to reconfigure the results of the IDA COEA in order to validate its previous termination of the program.[77]

The Marine Corps also criticized the alternative mix of helicopters proposed by OSD. The problem of survivability during an opposed assault remained and could not be solved with current helicopters.[78] The composition of the CH-53/H-60 mix was also criticized for the troop carrying capacity of each aircraft. The CH-53 was seen as too large and the CH-60 as too small.[79]

4. 1991: If at First You Don't Succeed...

The FY92 Defense budget submission by the Bush Administration contained no funding for the V-22. As in the previous year, it included a proposal to rescind $200 million from FY91 appropriated funds earmarked for V-22 procurement and transfer that money into the research and development account to complete flight testing of the Osprey.[80] Also requested was $509 million for the procurement of 20 CH-53Es.[81] A request was also made for funding the Medium Lift Replacement (MLR) aircraft.[82] A rumored reevaluation of the Marine Corps requirements for a medium lift failed to appear as did a possible accommodation on the V-22 by OSD.[83]

The purpose of the proposed rescission was to keep the V-22 from entering production. The desire by Congress in 1990 to make sure the aircraft had

completed its testing prior to entering procurement will allow DoD to ensure that the aircraft does not enter into production until at least 1994 at the earliest. The delay serves to increase the cost of the V-22 program and will make it harder to fund as the defense budget decreases.[84] A GAO investigation found the rescission by DoD was valid.[85]

Since the GAO had upheld the rescission, Congress needed to pass legislation if the $200 million in previously appropriated funds were to spent on the V-22. The vehicle used was the FY91 Dire Emergency Spending bill. It restored the funds to the V-22 and required that they be obligated within 60 days.[86] What it failed to do was direct *how* those funds were to utilized.[87]

As in previous years, Congress funded the V-22 while cutting the requested funding for CH-53E helicopters and proposed funding for the MLR study. Efforts by V-22 supporters to employ the aircraft for combat search and rescue during the Gulf war did not succeed.[88]

The Bell-Boeing team started the year on a high note as the V-22 had completed shipboard testing on the USS Wasp in mid-December 1990 with no setbacks.[89] In an effort to further solidify support for the V-22, the prime contractors, along with NASA and the FAA, called for a government-industry partnership to bring a broad civil tiltrotor program to fruition by the end of the century.[90]

The crash of test aircraft number five on 11 June forced the contractors to keep a "low-profile."[91] The cause was traced to a pin reversal—not a design

flaw—on two of the three flight control vyros.[92] While the crash was a setback, neither pilot was injured and the aircraft's crashworthiness features were successfully proven. Testing resumed on 10 September of 1991 and the V-22 received funding for FY92.[93] To help solve the weight problem and lower the cost, Bell-Boeing announced the development of a new method to mate the wings to the fuselage of the aircraft.[94]

Activity by the Marine Corps was not as intense as the previous year and indicated the dissolution with the medium lift problem. General Gray, however, continued to support the aircraft. In testimony before the HASC, he commented "I will not stand by and watch Marines go with second best helicopters."[95] It is notable that these comments were made in a for-the-record submission to the House Armed Services Seapower and Strategic and Critical Materials subcommittee by Gen. Gray in April 1990. These strong words of support were only made public in March of 1991 toward the end of Gen. Gray's tour as Commandant of the Marine Corps.[96] This action lends some credence to the hierarchical restraints placed on uniformed military supporters of the V-22.

Mixed signals were received from the Navy. Vice Admiral Richard Dunleavy stated that the V-22 was too costly to buy.[97] Naval Air Systems Command, however, reported to then-Secretary of the Navy Garrett that the V-22 was the best solution for the Marine Corps medium lift requirement.[98] The Marine Corps watched as their medium lift problem went unsolved for another year.

5. 1992: Changing the Rules

The FY93 Defense Budget submission followed the same pattern as the previous years. While the possibility for a rescission of the $790 million from FY92 V-22 appropriations existed, a formal proposal was never sent to Congress.[99] Instead, OSD held off on responding to Congressional requirements for a plan to build three production like V-22s. It claimed that engineering impossibilities precluded use of funds as required by Congress as it was too far into the current fiscal year to correct them.[100]

Tensions between OSD and Congress mounted over the non-expenditure of the FY92 funds. A decision by the Joint Requirements Oversight Council (JROC) to eliminate the Air Force special operations and Navy combat search and rescue requirements placed the V-22 program in danger of being eliminated for lack of a mission.[101] The parameters for speed, range, and troop capacity were reduced to concur with the amphibious assault requirements of the Marines. This action allowed a number of less expensive helicopter models to enter the competition against the high cost V-22.[102]

Congress viewed early OSD actions as thinly veiled efforts to further stall the production of the V-22. By April the funds remained unspent which prompted the Speaker of the House to inquire why the V-22 funds had not been used as intended by Congress.[103] The battle between the Congress and OSD over the V-22 quickly turned "nasty." The HASC bill contained a measure that would reduce the OSD Comptroller's staff by five percent every month the V-22

funds remained unspent.[104] It also denied funding for modifications to the Executive fleet of VH-3D helicopters as well funds for CH-53 procurement and CH-46 modifications (except those related to safety).[105]

The Bell-Boeing team proposed a plan that would keep the remaining V-22 developmental tests within the $790 million provided by Congress in FY92 by utilizing only two new aircraft.[106] In June the prime contractors offered a revised testing schedule for the V-22 that would save $75 million by eliminating some of the flight demonstrations.[107]

The U.S. Comptroller General found the nonexpenditure of the previously appropriated V-22 funds by OSD to be illegal. This unfavorable ruling forced Secretary Cheney to offer a compromise to the stand-off on 2 July 1992.[108] The compromise offered to use the FY92 funds to complete V-22 testing and the remainder for development of the MLR aircraft.[109] A "fly-off" would then be held to determine which aircraft would be purchased.[110] In spite of this offer, the OSD Comptroller instructed the Navy, to whom the funds were released, not to spend the money.[111]

The proposed compromise offered by Secretary Cheney was viewed with guarded optimism by V-22 supporters in Congress. While Congress welcomed the possible resolution to the feud over the V-22, they remained suspicious that the V-22 would never enter into production.[112] Reps. Weldon and Geren noted the widespread bipartisan support for the V-22 program as evidenced by a letter signed by 219 representatives urging the President to

> "work with the Congress to continue the V-22 and tiltrotor technology for sound military reasons, for sound transportation reasons, and for sound economic reasons."[113]

A similar version of this letter was also signed by 40 senators and is indicative of the widespread support for the Osprey program in the Senate.[114] Similar to previous years, the Senate Appropriations Committee provided zero funding for the popular House program for use as a bargaining chip during the appropriations conference.

A turning point in the stand-off between OSD and the Congress resulted in the awarding of a $550 million engineering and manufacturing development contract to the Bell-Boeing team on 22 October 1992.[115] The new "derivative" V-22 will closely resemble its baseline predecessor but will be 2000 pounds lighter. The FY 93 Defense Authorization bill echoed this new spirit of cooperation between the executive and legislative branches. Funding for the CH-53E, VH-3D Executive series helicopter, and the medium lift replacement aircraft study were all nearly restored to their initial executive requested funding levels.[116]

The V-22 team suffered a major setback when aircraft number 4 crashed on 20 July killing all seven personnel aboard.[117] The accident prompted new doubts over the V-22 program.[118] Flight testing had been suspended pending completion of the crash investigation. The crash of the XV-15 one month later on 20 August did not strengthen the case for continuation of the V-22.[119]

Initial reasons for the crash of the V-22 involved speculation over possible fuel starvation to the engines.[120] The official Navy report indicates, however, that an in-flight fire caused the engine to shutdown and weakened the power-transmission shaft.[121] Investigators believe that a combustible fluid may have pooled in the starboard engine housing and been ingested into the engine air inlet while the nacelle was transitioning from forward to horizontal flight.[122] This resulted in a disruption of air flow through the engine and ultimately resulted in a flash fire which lasted between 5-10 seconds and reached temperatures of 900F. Investigators claim that the heat then damaged the carbon-epoxy composite power transmission shaft. Not all personnel associated with the investigation agree with the conclusions reached by the Navy.[123] The Bell-Boeing team is currently developing two modifications to prevent a similar situation from reoccurring.[124]

The second crash of a V-22 aircraft increased the doubts in the Senate over the program's reliability. Language in the Senate's FY93 Defense Authorization bill stated that:

> "In order to ensure that the program does not proceed too far before more is known about the cause of the crash, the committee recommends a provision that would prohibit obligation of more than 50 percent of the fiscal year 1993 funds until the Commandant provides a crash investigation report [by September 1] to the congressional defense committees."[125]

Similar language was included in the conference version of the FY93 Defense Authorization bill.[126] The Navy's crash investigation report infers that the cause

of the accident was not the result of a design flaw and the V-22 received full funding from the Congress.

C. OVERVIEW

The last four years have been witness to a struggle over the acquisition of a specific weapon system that has gone from differences of opinion over the composition of the U.S. armed forces to battles over the Constitution and the powers granted therein to Congress to dictate how previously appropriated funds shall be spent. The V-22 provides an excellent example of how the Executive and Legislative branches attempt to achieve their respective goals of program cancellation or continuation.

Given the pitched political battle between Congress and the Executive over the V-22 Osprey program, the next two chapters will explore the applicability of the parochial imperative, military-industrial complex, and personal policy preference hypotheses laid out in the preceding chapter. Chapter IV will detail the methodology to be employed in the examination of these potential explanations for a member's position on the V-22. Chapter V will present the findings of the data analysis within the context of the aforementioned hypotheses.

ENDNOTES TO CHAPTER III

1. The author is indebted to Mr. Greg McAdams, Business Development Manager, Boeing Helicopters for his many helpful comments and clarifications of fact in this chapter. Any remaining mistakes or errors of omission are solely those of the author.

2. Precursors to the V-22 include Bell's XV-3, Boeing's VZ-2, Curtiss's X-19A, Bell's X-22A, and the XV-15 developed by Bell under the auspices of the U.S. Army and the National Aeronautical and Space Administration (NASA). Robert M. Flanagan, Lieutenant Colonel, U.S. Marine Corps, "The V-22 Is Slipping Away," *Proceedings*, Vol. 116, No. 8 (August 1990), pp. 40-1; Michael Couch, Captain, U.S. Marine Corps, "The V-22: Can the Nation Afford to Forgo Its Production?" (Masters Thesis, Naval Postgraduate School, December 1991), pp. 10-7.

3. On the utilization of composite materials aboard the V-22 see James H. Schaefer, Colonel, U.S. Marine Corps, "Advanced Composite Materials on the V-22," *VERTIFLITE*, March/April 1991, pp. 32-5; Christian K. Gunther and Robert L. Pickney, "Composite Material Applications at Boeing Defense and Space Group Helicopters Division," *VERTIFLITE*, March/April 1991, pp. 16-20. The V-22 was initially developed under a Cost-Plus (or Cost-Reimbursement) but was switched in 1985 to a Fixed-Price (FP) contract. Under terms of an FP contract, the contractor guarantees the performance of the terms of the contract and in exchange, the government is obligated to pay a specified price. J. Ronald Fox, *Arming America: How the U.S. Buys Weapons* (Boston: Harvard University, 1974), pp. 224-34. For reasons behind the shift in contract types see Couch, pp. 18-9. Bell Helicopter Textron Incorporated (BHTI) is responsible for the wing, nacelle, transmissions, rotor and integration of the government supplied Allison engines. Boeing Helicopters is responsible for the fuselage, empennage, flight controls, landing gear, and avionics integration. The Joint Projects Office ensures that compatibility is maintained between the two contractors. Roy C. Hopkins and Richard Balzer, "V-22 Flight Test," in *1990 Report to the Aerospace Profession: Proceedings of the thirty-fourth Symposium held in Beverly Hills, CA, September 1990*, by the Society of Experimental Test Pilots (Lancaster, CA: The Society of Experimental Test Pilots, 1990), p. 68.

4. "JVX Pullout," *Aviation Week and Space Technology*, (30 May 1983), p. 274. Also see Couch, pp. 45-7.

5. For further technical information regarding the V-22 FSD program see Phillip J. Dunford, Ken Lunn, Ronald A. Magnuson, and Roger L. Marr, "V-22 Tiltrotor Flight Test Development," in *Proceedings of the forty-eighth Annual Forum of the American Helicopter Society in Washington, D.C., 3-5 June 1992, (1992 Supplement)*, by the American Helicopter Society (American Helicopter Society, 1992), pp. 1-14.

6. Greg McAdams, V-22 Business Development Manager, Boeing Helicopters, *Telephone interview with author*, 6 November 1992.

7. Eric Schmitt, "Timing of Aircraft Pact Aids Bush in Pennsylvania," *New York Times*, 23 October 1992, A-11.

8. Richard Lawson, "V-22 Contractors Propose Using Existing Prototypes, Trade Studies," *Inside the Navy*, Vol. 5, No. 42 (19 October 1992), pp. 1-2.

9. David A. Brown, "Team Files Proposal for Low-Cost V-22," *Aviation Week and Space Technology*, Vol. 137, No. 14 (5 October 1992), p. 69.

10. In a change from the initial contract, the derivative V-22 would be co-produced by the Bell-Boeing team to avoid production tooling at two separate facilities thus keeping program costs down. McAdams, *Telephone interview with author*, 6 November 1992. Also see Richard Lawson, "V-22 Contractors Propose Using Existing Prototypes, Trade Studies," *Inside the Navy*, Vol. 5, No. 42 (19 October 1992), pp. 1-2. Marine Corps requirements are for 500 to 550 V-22 aircraft. Imbert Mathee, "Osprey Contract Could Mean 2,500 Jobs for Boeing," *Seattle Post-Intelligencer*, 23 October 1992, p. C-12.

11. There is some speculation that the Army will reenter the derivitive V-22 program to meet its medical evacuation requirements. An industry analyst inidcates that the Surgeon General of the Army is pushing hard for the V-22 as the primary aircraft for this mission.

12. Initial service requirements were: USMC - 552, USA - 231, USAF - 200, and USN - 50. Erwin J. Bulban, "Services Favor Tilt Rotor For Vertical Lift Aircraft," *Aviation Week and Space Technology*, Vol. 117, No. 1 (5 July 1982), p. 25.

13. The Marine Corps' HXM program was to develop a vertical assault transport capable of carrying at least 24 armed personnel and combat cargo. *Ibid.*

14. The desire to fix the medium lift deficiency in the Marine Corps was voiced in 1980. See Robert H. Barrow, General, Commandant of the U.S. Marine Corps, "CMC FY-1981 Posture Statement," *Marine Corps Gazette*, April 1980, p. 38. Since that time, replacement of the CH-46 fleet has evolved from a "major concern" in FY85 to the "highest Marine aviation priority" in FY87 where it remains to date. See William H. Fitch, Lieutenant General, U.S. Marine Corps, "Marine Aviation FY-85 Posture Statement," *Marine Corps Gazette*, May 1984, p. 54; Keith A. Smith, Lieutenant General, U.S. Marine Corps, "On Land, Sea, and in the Air: Marine Aviation FY-87 Posture Statement," *Marine Corps Gazette*, May 1986, p. 71.

15. This modernization effort has included the acquisition of jet aircraft (AV-8B and F/A-18), light and heavy helicopters (AH-1W and CH-53E), and increased amphibious assault equipment (LHD-1 (Wasp) class ships and LCACs). Couch, p. 7. Ongoing programs include the development of the Advanced Amphibious Assault Vehicle (AAAV) program to replace the AAVP7A1. Norman Polmar, "Keep the Marines Off the Beach," *Proceedings*, Vol. 118, No. 2 (February 1992), pp. 105-6.

16. The joint services advanced vertical lift aircraft (JVX) was to replace the Army's fleet of Grumman OV-1 and RV-1 Mohawk and Beech RC-12 and RU-21 fixed-wing aircraft. "JVX Pullout," *Aviation Week and Space Technology*, Vol. 118, No. 22 (30 May 1983), p. 274.

17. Bulban, p. 25.

18. The primary mission of the V-22 was service specific. The U.S. Marine Corps' mission is amphibious assault, troop lift and external cargo movement. The U.S. Navy's mission involved Strike Rescue (Combat Search and Rescue (CSAR) is used interchangeably) and at one time included an Anti-Submarine Warfare (ASW) variant. The U.S. Air Force mission included utilization by Special Operations Forces. The number of V-22s required by each service to fulfill their various missions are: USMC - 552, USN - 50, USAF - 55. Robert C. Price, Lieutenant Colonel, U.S.Marine Corps and Peter A. Levoci, Lieutenant Commander, U.S. Navy, "V-22 Full Scale Development Testing," in *1991 Report to the Aerospace Profession: Proceedings of the thirty-fifth Symposium in Beverly Hills, CA, September 1991*, by the Society of Experimental Test Pilots (Lancaster, CA: The Society of the Experimental Test Pilots, 1991), p. 182.

19. The Army passed the responsibility for executive service to the Navy because they had a larger quantity requirement (USN & USMC) and the USMC requirements were the "drivers" behind the JVX design. McAdams.

20. This paragraph draws heavily from Couch, pp.45-7.

21. The Joint Requirements Oversight Council is the key Pentagon Committee that validates the military's weapons requirements. Robert Holzer, "V-22 Crash May Jeopardize Program As Pentagon Considers Alternatives," *Defense News*, Vol. 7, No. 30 (27 July - 2 August 1992), p. 14.

22. John Boatman, "New Requirement May Finish V-22," *Jane's Defence Weekly*, Vol. 18, No. 5 (1 August 1992), p. 5.

23. *Ibid.*

24. Other helicopters now in the running include the "marinized" version of the Boeing CH-47D/F and BV-360s, Sikorsky's HH-60, and the Westland-Agusta EH-101. *Ibid.* For more information on the S-92 see "Sikorsky Plans Military S-92 as Low-Risk H-46 Substitute," *Aviation Week and Space Technology*, Vol. 136, No. 12 (23 March 1992), pp. 45-7. On the Westland-Agusta EH-101 see Giovanni de Briganti, "European Helicopter Programs: Picking Up Speed," *Rotor & Wing International*, January 1992, p. 46.

25. For a description of Secretary Cheney's attitude regarding civilian control of the military see Bob Woodward, *The Commanders* (New York: Simon and Schuster, 1991), p. 110. On the Chastisement of General Welch see Woodward, pp. 75-8.

26. *Ibid*, pp. 290-6.

27. United States General Accounting Office, *Defense Acquisition Programs: Status of Selected Systems*, Appendix II, GAO/NSIAD-90-30 (Washington, D.C.: USGPO, December 1989), pp. 54-61.

28. A production-like aircraft is essentially a representation of the aircraft the service(s) will take delivery of with minor modifications. This step usually involves production line tooling to prove the contractors ability to produce the aircraft. The acquisition strategy at this point in time called for the first eight planes to be built jointly by Bell and Boeing. Each company would then build two planes independently and the contract award for future units would go to the lowest bidder. Crouch, p. 49.

29. Pat Towell, "Defense Spending Decisions Sure To Stir Controversy," *Congressional Quarterly*, Vol. 47, No. 16 (22 April 1989), p. 915.

30. The original FY90 defense budget request had included $1.2 billion to continue development and build 12 production-like aircraft. Pat Towell, "Bush's Revisions May Auger Policy Shifts in Future," *Congressional Quarterly*, Vol. 47, No. 17 (29 April 1989), p. 979.

31. The proposed mix consisted of 966 helicopters: 540 CH-60Es, 376 CH-53Es, and 50 HH-60Ds. Federico Cerruti, "The Marines Heading Toward the Turn of the Century," *Defence Today*, Vol. 13, Nos. 8 & 9 (August-September 1990), p. 239.

32. Pat Towell, "Bush's Cuts Would Take Away Some Home Town Bacon," *Congressional Quarterly*, Vol. 47, No. 19 (13 May 1989), p. 1141.

33. The resolution offered little real clue as to how the Senate would actually vote on the V-22 as it was adopted by a voice vote in a nearly empty chamber. Towell, "Defense Spending Decisions Sure To Stir Controversy," p. 916.

34. George C. Wilson, "Aspin, Contractors Trying to Save Defense Budget," *Washington Post*, 15 June 1989, p. A24.

35. *Ibid.*

36. Pat Towell, "Party Battle Lines Are Fuzzy in House Defense Debate," *Congressional Quarterly*, Vol. 47, No. 24 (17 June 1989), p. 1486.

37. Pat Towell, "The Politics of Procurement Creates New Alliances," *Congressional Quarterly*, Vol. 47, No. 25 (24 June 1989), pp. 1557-8.

38. *Ibid*, p. 1560.

39. Molly Moore, "Cheney, Aspin Rebuffed on 2 Projects," *Washington Post*, 29 June 1989, p. A-16.

40. Pat Towell, "Saving Some Projects, Panel Bites the Funding Bullet," *Congressional Quarterly*, Vol. 47, No. 26 (1 July 1989), pp. 1637-9.

41. *Ibid*, p. 1639.

42. Moore, p. A-16.

43. Towell, "Saving Some Projects, Panel Bites the Funding Bullet," p. 1640.

44. Pat Towell, "With House Floor Debate Near, Cheney Argues for 'Stealth'," *Congressional Quarterly*, Vol. 47, No. 28 (15 July 1989), p. 1807.

45. Pat Towell, "Defense Panel Axes Funding for Troubled New Fighter," *Congressional Quarterly*, Vol. 47, No. 29 (22 July 1989), p. 1884.

46. Pat Towell, "Senate Defense Measures Sticks Closer to Bush Blueprint," *Congressional Quarterly*, Vol. 47, No. 30 (29 July 1989), p. 1984.

47. *Ibid.*

48. Pat Towell, "Budget Squeezes Sets the Stage for Defense Money Fights," *Congressional Quarterly*, Vol. 47, No. 37 (16 September 1989), p. 2407.

49. *Ibid.*

50. Pat Towell, "Senate Panel Adds Its Support to Bush Defense Program," *Congressional Quarterly*, Vol. 47, No. 38 (23 September 1989), p. 2484.

51. Pat Towell, "House Deals Bush Team Blows on Missiles, Weapons Cuts," *Congressional Quarterly*, Vol. 47, No. 30 (29 July 1989), p. 1976.

52. Couch, pp. 51-2.

53. Deferrals are allowed for management, not policy reasons. The decision as to whether the deferral is authorized is made by the General Accounting Office. Allen Schick, *The Capacity To Budget* (Washington, D.C.: Urban Institute, 1990), pp. 111-3. Also see Pamela Fessler, "Cheney's Spending Blueprint Faces Welter of Changes," *Congressional Quarterly*, Vol. 48, No. 5 (3 February 1990), p. 335.

54. The V-22 cancellation would yield $1.395 billion in savings in FY91 and $6.468 billion over the period of FY91-94. Fessler, p. 336.

55. Couch, p. 60.

56. *Ibid.*

57. McAdams, Comments.

58. Pat Towell, "Hill Searching for Answers on Where to Make Cuts," *Congressional Quarterly*, Vol. 48, No. 12 (24 March 1990), p. 927. Also see Towell, "House Panel's Diet Defense Bill Would Cancel B-2 Production," *Congressional Quarterly*, Vol. 48, No. 31 (4 August 1990), p. 2530.

59. "House Appropriation of V-22 Procurement Funding Sets Stage for Bitter Conference," *Inside the Navy*, Vol. 3, No. 31 (6 August 1990), pp. 3-4.

60. For an unclassified synopsis of the findings of the IDA's COEA on the V-22, see "IDA Study Strongly Implies Cheney V-22 Policy Lacks Analytical Basis," *Inside the Navy*, Vol. 3, No. 28 (16 July 1990), pp. 1, 11-6.

61. See Bruce Schoenfeld, "V-22 COEA Study to Remain Secret," *Inside the Navy*, Vol. 3, No. 22 (4 June 1990), pp. 1, 6; "Senate Appropriators Blast Cheney For Not Releasing Data On the V-22," *Inside the Navy*, Vol. 3, No. 24 (18 June 1990), pp. 4-5.

62. The directed studies included an analysis of the potential role of tiltrotor technology in commercial aviation and a survey to determine the export potential of the V-22 and summarize tiltrotor developments in other nations in conjunction with the Federal Aviation Administration, an analysis of alternative V-22 procurement profiles, and a study by the three Service Secretaries to determine the military requirements within their departments for the V-22. "Failure to Address Civil Uses of Tiltrotor Technology Influenced Action On the V-22," *Inside the Navy*, Vol. 3, No. 30 (30 July 1990), p. 9.

63. *Ibid*, pp. 9-10. The exclusion of procurement funding was more likely a gambit by Sen. Sam Nunn (D-GA) to obtain concessions by the House on the B-2, MX and SDI during Conference meetings. "Nunn May Agree to Funding in Return for House Moves on B-2, MX," *Inside the Navy*, Vol. 3, No. 38 (24 September 1990), p. 3; "Authorization Conferees Agree to $165 Million in V-22 Advance Procurement," *Inside the Navy*, Vol. 3, No. 42 (22 October 1990), pp. 1, 9-10.

64. Bruce Schoenfeld, "V-22 COEA Study to Remain Secret," *Inside the Navy*, Vol. 3, No. 22 (4 June 1990), pp. 1,6; "Angered by Secrecy, Eighteen Senators Lobby Cheney For Release of V-22 Study," *Inside the Navy*, Vol. 3, No. 23 (11 June 1990), pp. 2-3; "Senate Appropriators Blast Cheney For Not Releasing Data on IDA's V-22 Study," *Inside the Navy*, Vol. 3, No. 24 (18 June 1990), pp. 4-5; "Nunn, Kennedy Demand Information on Key V-22 Study from Dept. of Defense," *Inside the Navy*, Vol. 3, No. 24 (18 June 1990), pp. 5-6.

65. "Chu Defends Decision to Terminate V-22 Program Despite Favorable IDA Study," *Inside the Navy*, Vol. 3, No. 29 (23 July 1990), pp. 1, 11. This reflected earlier comments by OSD spokesman Pete Williams that even if the V-22 was the most cost effective alternative in the long run, that would not be enough to change OSD's stance on the V-22. "Angered by Secrecy, Eighteen Senators Lobby Cheney for Release of V-22 Study," *Inside the Navy*, Vol. 3, No. 23 (11 June 1990), p. 12. Also see "DoD Reiterates Opposition To V-22 Despite Favorable Outcome of IDA Study," *Inside the Navy*, Vol. 3, No. 27 (9 July 1990), pp. 7-8.

66. "Inside the Navy Special Report: Authorizers Slash More Than $3 Billion From Navy Procurement Request," *Inside the Navy*, 22 October 1990, p. 1.

67. The MH-53E is the minehunting version of the helicopter, not the troop carrying version (CH-53E) desired by OSD. Pat Towell, "Senate Clears Military Bill After Panel Squabbles," *Congressional Quarterly*, Vol. 48, No. 44 (3 November 1990), pp. 3728-9.

68. *Ibid*, p. 3729.

69. "Key Excerpts of IDA Study Released by Specter Strongly Favor V-22 Procurement," *Inside the Navy*, Vol. 3, No. 27 (9 July 1990), pp. 1, 7.

70. General Accounting Office, *U.S. Weapons: The Low-Intensity Threat Is Not Necessarily a Low-Technology Threat*, GAO/PEMD-90-13, (Washington, D.C.: USGPO, March 1990). p. 8. Also see "V-22 Supporters May Focus on Report That Says Helos Are Vulnerable In LIC," *Inside the Navy*, Vol. 3, No. 14 (9 April 1990), p. 2.

71. The GAO study was requested by Rep. Dickinson (R-AL) who had attempted to kill the program on the floor on the House in 1989. General Accounting Office, *Naval Aviation: The V-22 Osprey - Progress and Problems* (Washington, D.C.: USGPO, October 1990), p. 2. Also see "New GAO Study Suggests Moving V-22 Into Full Production Would be Highly Risky," Inside the Navy, Vol. 3, No. 46 (19 November 1990), pp. 3-4.

72. The BDM study placed the 20 year life cycle cost of the Osprey program at $31 billion for 602 aircraft as opposed to $24-28 billion for the proposed CH-53/H-60 mix. It found that the V-22 seven times more survivable than the CH-53/H-60 mix and that 75% of the V-22 would survive an opposed landing versus a 50% survival rate for the proposed mix. "Contractor Financed Study Says V-22 More Costly, Effective Than Alternatives," *Inside the Navy*, Vol. 3, No. 16 (23 April 1990), p. 4. The Bell-Boeing team vigorously defended the results of the BDM study."Contractors Defend Self-Financed Study That Says V-22 Is Better Than Helo Mix," *Inside the Navy*, Vol. 3, No. 17 (30 April 1990), pp. 6-7.

73. The simulation concluded that the tiltrotor aircraft sustained less attrition which allowed for more sorties to be generated thus delivering greater reinforcements. David F. Bond, "Bell, Boeing Unveil New V-22 Mission Effective Analysis," *Aviation Week and Space Technology*, Vol. 133, No. 12 (17 September 1990), pp. 117-119.

74. Couch, Appendix A, p. 88. Bruce Schoenfeld, "Top Marine Aviator Expects results of Key V-22 Study to be Altered by OSD," *Inside the Navy*, Vol. 3, No. 19 (14 May 1990), p. 3; *idem*, "Bell-Boeing Fires Back At DOD Efforts To Convince Congress to Kill V-22," *Inside the Navy*, Vol. 3, No. 37 (17 September 1990), pp. 3,5.

75. The Marine Corps officer referred to is Colonel James Schaeffer. "V-22 Program Official Says Only Tiltrotor Can Fill Marine Requirements," *Inside the Navy*, Vol. 3, No. 14 (9 April 1990), p. 3

76. He defended the aircraft but stopped short of overtly challenging OSD's cancellation decision. "Gray Warns Congress On Dire Effect of Force Cuts on Marine Capabilities," *Inside the Navy*, Vol. 3, No. 25 (25 June 1990), p. 8.

77. Bruce Schoenfeld, "Top Marine Aviator Expects Results of Key V-22 Study To Be Altered by OSD," *Inside the Navy*, Vol. 3, No. 19 (14 May 1990), pp. 2-3.

78. "V-22 Supporters May Focus On Report That Says Helos Are Vulnerable in LIC," *Inside the Navy*, Vol. 3, No. 14 (9 April 1990), p. 2.

79. John R. Dailey, Lieutenant General, U.S. Marine Corps, Commanding General, Marine Corps Research, Development, and Acquisition Command, "An Exclusive AFJI Interview with Lt. Gen. John R. Dailey, USMC," interview by Glenn W. Goodman, Jr., and John G. Roos, *Armed Forces Journal International*, August 1990, pp. 50, 52.

80. "$3.5 Billion From Navy Programs Said to be Rescinded by DOD," *Inside the Navy*, Vol. 4, No. 7 (18 February 1991), p. 6.

81. Pat Towell, "Bush Begins Effort to Shrink Military by One-Fourth," *Congressional Quarterly*, Vol. 49, No. 6 (9 February 1991), p. 379.

82. "DOD Move to Transfer FY-91 V-22 Procurement Funds Raises Ire of Supporters," *Inside the Navy*, Vol. 4, No. 7 (18 February 1991), p. 9.

83. This contemplated action by DoD infuriated many V-22 supporters in Congress who felt that DoD was trying to get rid of the Plane by getting rid of the mission. "DoD, Navy Officials Say They are Reevaluating Marine Corps V-22 Requirement," *Inside the Navy*, Vol. 4, No. 15 (15 April 1991), p. 3. The possible accommodation was discussed in June between Secretary Cheney and Congressional leaders but never materialized. Richard Lawson, "V-22 Program Can be Accommodated, Cheney Tells Congressional Backers," *Inside the Navy*, Vol. 4, No. 34 (26 August 1991), pp. 1, 8-9.

84. *Ibid*, pp. 8-9.

85. The reason provided was that since DoD had no intention of purchasing the V-22, the action of recision was justified. "GAO Says $972.1 Million Can be Cut from Navy's Aviation Account," *Inside the Navy*, Vol. 4, No. 9 (4 March 1991), p. 9.

86. "House Halts Pentagon Move to Transfer FY-89 V-22 Funds in Supplemental," *Inside the Navy*, Vol. 4, No. 10 (11 March 1991), p. 5; George Hager, "Senate Reworks House's Math on Fiscal 1991 Spending Bill," *Congressional Quarterly*, Vol. 49, No. 11 (16 March 1991), pp. 657-8; *idem*, "Dire Emergency Spending Bill," *Congressional Quarterly*, Vol. 49, No. 14 (6 April 1991), p. 879.

87. This caused a great deal of confusion between OSD, Congress, and Bell-Boeing. OSD eventually won and used the funds for continued testing. "OSD, Contractors at Odds on Spending $200 Million Appropriated for V-22," *Inside the Navy*, Vol. 4, No. 16 (22 April 1991), pp. 1, 7-8.

88. DoD seriously considered this idea but rejected due to the handmade nature of the R&D V-22s and a lack of spare parts. Lawson, "V-22 Program Can be Accommodated, Cheney Tells Congressional Backers," *Inside the Navy*, Vol. 4, No. 34 (26 August 1991), pp. 1, 8-9.

89. Stanley W. Kandebo, "Shipboard Tests Confirm V-22's Operating Capability," *Aviation Week and Space Technology*, Vol. 134, No. 2 (14 January 1991), pp. 36-8.

90. "Proponents of Civil Tiltrotor Call for Government-Industry Partnership," *Inside the Navy*, Vol. 4, No. 9 (4 March 1991), p. 13.

91. For an initial report see Stanley W. Kandebo, "Osprey Flight Tests Suspended After Crash of No. 5 Aircraft," *Aviation Week and Space Technology*, Vol. 134, No. 24 (17 June 1991), pp. 53-4; also David S. Harvey, "The V-22 Crash: Not A Killing Blow," *Rotor & Wing International*, August 1991, pp. 23-6.

92. The effect of this pin reversal was that the rate feedback signal—the V-22 is a "fly-by-wire" system—was reversed and pilot inputs only aggravated the severe roll oscillation rather than achieve roll damping. Dunford, *et al*, p. 4.

93. "V-22 Aircraft Resumes Flight Testing After Four Month Suspension," *Inside the Navy*, Vol. 4, No. 37 (16 September 1991), pp. 4-5.

94. "New Technique for Osprey," *Aviation Week and Space Technology*, Vol. 135, No. 18 (4 November 1991), p. 13.

95. "House Halts Pentagon Move to transfer FY-89 V-22 Funds in Supplemental," *Inside the Navy*, Vol. 4, No. 10 (11 March 1991), p. 5.

96. General Alfred Gray was replaced, as scheduled, by General Carl Mundy as Commandant of the Marine Corps (CMC) in late June 1991.

97. "Naval Air Warfare Chief Outlines Naval Aviation Plans Beyond 1990s," *Inside the Navy*, Vol. 4, No. 17 (29 April 1991), p. 2.

98. "V-22 Real Solution to Marine Corps Medium Lift Job: Assistant Secretary of Navy Official Indicates After NAVAIR Briefing," *Inside the Navy*, Vol. 4, No. 35 (2 September 1991), p. 5. Also see David A. Fulghum, "Report Puts V-22 Unit Cost $7.5 Million Over Helicopter," *Aviation Week and Space Technology*, Vol. 135, No. 10 (9 September 1991), pp. 22-3.

99. Lawson, "Yockey to Navy: Inform Congress on How You Plan to Proceed with V-22," *Inside the Navy*, Vol. 4, No. 51 (23 December 1991), pp. 1, 12; *idem*, "Yockey Requires More Information Before V-22 Program Plan Can be Approved," *Inside the Navy*, Vol. 5, No. 4 (27 January 1992), pp. 1-2.

100. "Pentagon Balks at Complying with Congressional Order on V-22," *Helicopter News*, 7 February 1992, p. 1, David A. Bond, "Navy Updates V-22 Development Plan, But Says It Cannot Meet Congressional Order," *Aviation Week and Space Technology*, Vol. 136, No. 10 (9 March 1992), p. 20.

101. Robert Holzer, "V-22 Crash May Jeopardize Program as Pentagon Considers Alternatives," *Defense News*, Vol. 7, No. 30 (27 July - 2 August 1992), p. 14.

102. Boatman, "New Requirement May Finish V-22," *Jane's Defence Weekly*, Vol. 18, No. 5 (1 August 1992), p. 5.

103. Philip Finnegan and Robert Holzer, "Congress May Freeze DoD Funds Over V-22 Battle," *Defense News*, Vol. 7, No. 17 (27 April - 3 May 1992), pp. 1, 42.

104. *Ibid.*

105. "Inside the Navy Special Report: Department of defense Appeal Fy 1993 Defense Authorization Conference," *Inside the Navy*, 23 September 1992, pp. 3-4, 11-12.

106. Bond, p. 20.

107. "Bell Boeing Proposes Cuts in V-22 Tests to Save $75 Million," *Aviation Week and Space Technology*, Vol. 136, No. 24 (15 June 1992), p. 37.

108. "V-22 Debate Gets Nasty," *Defense News*, Vol. 7, No. 22 (1-7 June 1992), p. 2; "Washington Roundup: V-22 Deadline," *Aviation Week and Space Technology*, Vol. 136, No. 3 (8 June 1992). p. 19; Richard B. Cheney, *Letter to the Honorable George Mitchell*, 2 July 1992.

109. For further information on the MLR study and aquisition decision see Donald Yockey, "Medium Lift Replacement Acquisition Decision Memorandum," as reprinted in *Inside the Navy*, Vol. 5, No. 35 (31 August 1992), p. 12; "Yockey's Guidelines for the MLR Analysis," *Ibid*, pp. 13-4.

110. John Boatman, "Cheney Ends Fight to Scrap V-22," *Jane's Defence Weekly*, Vol. 18, No. 2 (11 July 1992), p. 5.

111. "Defense Comptroller Gives Navy V-22 Funding But Says Money Cannot be Spent Yet," *Inside the Navy*, Vol. 5, No. 32 (10 August 1992), p. 5.

112. "O'Keefe Failed to Quell Congressional Concerns Over Compromise V-22 Plan," *Inside the Navy*, Vol. 5, No. 34 (24 August 1992), pp. 13-4.

113. "Bipartisan Group of House Lawmakers Urges President to Support V-22," *Inside the Navy*, Vol. 5, No. 39 (8 September 1992), p. 10.

114. Congress, Senate, Senator Arlen Specter of Pennsylvania, "Letter Sent to President Bush Regarding the V-22," 102nd Cong., 2nd sess., *Congressional Record*, Vol. 138, No. 79 (4 June 1992), S7576-7.

115. Eric Schmitt, "Timing of Aircraft Pact Aids Bush in Pennsylvania," *New York Times*, 23 October 1992, A-11.

116. The funding profile of these programs is as follows:

	Exec. Req.	House Auth.	Senate Auth.	Conf. Auth.
CH/MH-53E	20 @ $464,433	16 @ $394,433	20 @ $453,433	20 @ 452,833
Adv Proc	$48,618	$0	$48,618	$48,618
VH-3D	$27,932	$0	$27,932	$27,932
MLR Dev.	$15,117	$5,415	$5,415	$15,117

* All figures in thousands of dollars.

"Inside the Navy Special Report: FY-93 Authorization," *Inside the Navy*, 19 October 1992, pp. 1, 10.

117. Robert Pear, "Disputed Military Aircraft Crashes; 7 Aboard Lost," *New York Times*, 21 July 1992, pp. A1, A16.

118. Clifford Krauss, "New Doubts Voiced Over Disputed Plane," *New York Times*, 22 July 1992, p. A12; Pat Towell, "Osprey Fans Keep the Faith," *Congressional Quarterly*, Vol. 50, No. 30 (25 July 1992), p. 2182.

119. "Preliminary Findings: XV-15 Crash Caused by Loose Bolt in Engine Compartment," *Inside the Navy*, Vol. 5, No. 37 (14 September 1992), pp. 9-10.

120. David A. Brown and Stanley W. Kandebo, "Probers Eye Fuel Starvation as Factor in V-22 Accident," *Aviation Week and Space Technology*, Vol. 137, No. 5 (3 August 1992), pp. 26-27.

121. Brown and Kandebo, "Navy Blames Fire for V-22 Crash," *Aviation Week and Space Technology*, Vol. 137, No. 14 (5 October 1992), pp. 68-9.

122. There is some disagreement over what type of fluid may have collected in the engine nacelle. The Navy states that approximately 20 ounces of lubricating oil was the fluid present. Other investigators feel that the fluid was hydraulic fluid from the 5000 pounds per square inch (psi) hydraulic system onboard the V-22. *Ibid.*

123. Some of the investigators involved feel the Navy is making statements that it cannot substantiate. For example, the Allison T406-AD-400 turboshaft engine's Lucas Aerospace full-authority digital engine control (FADEC) system did not record any overpressures in the powerplant at any time. Another point of contention is when the pylon powershaft failed. The sequence of events seems to show that the starboard engine ceased providing power before the pylon shaft failed. *Ibid.*

124. The two modifications are a system to automatically evacuate fluids from the nacelle and an increase in the size of the existing firewall which separates the engine in the lower part of the nacelle from the power transmission system in the upper part of the nacelle. *Ibid*, p. 69.

125. "Inside the Navy Special Report: Senate Authorizers Cut $703 Million From Navy Aircraft Buys; Restrict F/A-18E/F," *Inside the Navy*, 10 August 1992, pp. 7-8.

126. "Inside the Navy Special Report: House, Senate Conferees Agree on $274 Billion Defense Authorization Bill," *Inside the Navy*, 5 October 1992, pp. 2-3.

IV. METHODOLOGY

The next question is how to test the hypotheses concerning congressional behavior. This chapter will detail the statistical methods utilized and how such concepts as parochial behavior or the influence of the MIC were operationalized and investigated. It will offer a general model for explaining a member's voting behavior and several specific models for investigating the applicability of the three hypotheses detailed in Chapter II.

A. LOGIT ANALYSIS

Logit analysis is used in favor of Chi Square statistical analysis because of the flexibility in data utilization that it offers. The usage of Chi Square analysis requires that all data being examined be at the nominal level (e.g., Yes - No, Republican - Democrat).[1] This basic level of data analysis is very useful for variables that by their very nature can only possess one of two finite values. Chi Square analysis, however, does not allow the for simultaneous consideration of possible relationships to the dependent variable that additional independent variables which may possess a value over a wide range (0 - 100).

The problem in utilizing the familiar technique of multivariate regression analysis is its employment of Ordinary Least Squares (OLS) to calculate the best fit for a *straight line* for all of the data points. This may lead to incorrect or

misleading results. As Kenneth Mayer clearly points out in his work involving aircraft carrier spending and congressional voting behavior, the assumed linear relationship between the independent variable and the dependent variable(s) is "unwarranted" and the associated error term may be highly correlated—an undesirable situation—to the independent variable(s) being examined.[2]

Logit analysis is very similar to probit analysis which was first employed in the life sciences to determine the relationship between various levels of drugs on the health of laboratory animals. Probit analysis has been applied in several studies involving congressional behavior.[3] Logit analysis allows the investigator to explore the relationship of a dichotomous dependent variable (e.g., *Yes* or *No*) and several independent variables that may possess values over a wide range. The resultant S-shaped curve is the cumulative standard normal distribution.

The interpretation of the logit results, just as in the case of probit results, is not as straightforward as in other statistical tests such as regression analysis or Chi-square tests. Arnold provides a concise discussion of the problems interpreting the probit coefficients:

> A probit coefficient describes the impact of a particular variable on the probability of an events occurrence, with its sign indicating whether the variable increases or decreases the probability and its magnitude indicating the extant of the effect. However, the impact of a particular variable is not constant across all cases as it for regression; instead it varies according to the values that the other variables take, principally because the underlying relationships are assumed to be non-linear. Although the probit coefficients are not themselves probabilities, the effects they describe can be converted to probabilities.[4]

B. LOGIT MODEL[5]

A congressman's voting behavior regarding support for the V-22 can be represented by the following model:

$$Vote_d = f(Jobs_i, Ideology_i, Presidential\ Support_i, PAC_i, Personal_i, Other_i)$$

The member's vote is a function of the (1) number of direct jobs in the district or state, (2) member's ideology, (3) degree to which the member supports the president position on an issue, (4) amount of money contributed by the Political Action Committees (PACs) of the prime contractors, (5) personal factors, and (6) factors not included in this analysis.

Jobs is a measurement of the number of direct jobs generated at the first tier subcontractor level by the V-22 appropriations to date for both the prime contractors and subcontractors. There have been claims that there are over 201 first tier sub-contractors and that the total number of companies involved is approximately 2000 in some 45 states.[6] Knowledgeable sources within Boeing indicate that the V-22 subcontracting list covers 47 states and is over 35 pages in length. Proprietary information restrictions prevented the author from obtaining a complete accounting of all V-22 subcontractors. A partial list of subcontractors, however, was obtained from Bell Helicopter-Textron Industries (BHTI). This list shows 106 first tier subcontractors for both BHTI and Boeing Helicopter. Requests

for information were sent to the two prime contractors as well as to the known subcontractors on the number of jobs generated by work on the V-22.

Since the potential for constituency benefits (i.e., future jobs) can provide a powerful incentive for supporting any program, information was also requested regarding the possibility of future employment should the V-22 enter low scale production.[7] If the parochialism hypothesis of congressional behavior is correct, then it is assumed that if either prime contract or, more importantly, subcontract work provided jobs in a member's district or state, the member would support funding for the V-22. The advantage of using logit analysis is that the number of jobs or "threshold" that may cause a member to shift his vote from "No" to "Yes" can be determined.

Jobs are also related to the presence of U.S. Marine Corps installations in a member's district or state.[8] Mayer, who used Naval installations as a measure of ideology, noted that personnel assigned to the branch of service involved would be more supportive of that service's programs.[9] It may be more accurate, however, to say that the populace indirectly employed as a result of the presence of the installation may be ones who are most supportive of a program—particularly if it involves the mission of their local base. This statement is based on the fact that rarely does the military member's state of residency and duty station actually coincide. As such, the majority of service personnel are not part of the congressmen's electoral constituency. While a member with a Marine Corps installation in his or her district or state is assumed to be familiar with the

needs of the Marine Corps, it is more likely that the intensity of the economic benefits associated with that base, as noted in chapter 2, will motivate the member to support funding for the V-22.

Related to jobs is the member's position on one of the committees or subcommittees affecting authorizations and appropriations for a program such as the V-22. Attention will be given to members from both chambers that sit on the Armed Services Committees and the Appropriations Committees. If the military-industrial complex hypothesis of congressional behavior is correct, it is anticipated that members of these committees and related critical subcommittees will have a large concentration of jobs in their districts or states as a result of the "strategic" placement of subcontracts in key member's districts or states by the prime contractors.

Ideology is a very broad and ill-defined term. It is possible to adapt some concepts of ideology from the arena of international relations to the domestics realm. K.J. Holsti defines ideology as "a framework for an explicit set of beliefs (doctrine) that proports to explain reality and usually proscribes goals for political action."[10] Thus, ideology is a collection of propositions (beliefs) that policy-makers (or decision-makers) hold to be true even if they can not be verified.[11] Decision-makers use their ideology to establish the intellectual framework through which they observe reality, establish goals, and as a rationalization and justification for their choice of specific decisions.[12]

In this case it is meant to represent a member's likelihood to support or oppose the V-22. This variable is based on two separate ratings systems, the member's political party affiliation, and membership in the Tiltrotor Technology Coalition.

The first rating system used is the liberal/conservative scale published by the Americans for Democratic Action (ADA).[13] While the criticism that groups skew their ratings scales to further their specific cause, work by William Schaffer has provided an external check on the reliability and validity of the ADA's ratings. He found the ADA to be an effective rating organization and their liberal/conservative measure to be valid.[14] On the ADA scale, the higher the score (0-100), the more liberally oriented the member. A member with a high rating would be likely to oppose funding for a weapon system that even the Administration viewed as too costly and unnecessary.

The second rating system utilized was the National Security Index (NSI) as published by the American Security Council (ASC).[15] Similar to the ADA scale, the NSI has been found to be consistent over time.[16] The ASC believes in "peace through strength" and rates members according to how they voted on ten key defense issues during the previous election cycle. Members whom the ASC perceives as furthering their goal of a strong defense are rated higher on the scale (0-100) than members who are seen as weak supporters of defense. The NSI scale provides a measure of a member's "hawkishness."[17] Thus it is assumed that a member with a high NSI rating would support funding for the V-22. However,

as noted in Chapter II, the predictive power of these ratings systems may be "less than advertised."

Political party affiliation can also be a determining factor in how a member votes.[18] Party affiliation is a result of an individual being in agreement with the basic tenets of that political organization. Members were coded as Republican or Democrat. It is assumed that Republicans are more "hawkish" than Democrats. Given this assumption, it is expected that Republicans are more likely than Democrats to support funding for the V-22.

Membership in the Tiltrotor Technology Coalition (TTC) is an external manifestation of intellectual framework referred to in the previous definition of ideology. It provides members with a structured physical organization to advance their personal beliefs that the continued development of tiltrotor technology is in the national interests—for a variety of reasons—of the United States. Membership in the TTC is expected to indicate support for the V-22 Osprey.

James Lindsay notes that any study of weapons program funding must include the possible effects of a popular president can exert over the congressional decision-making process.[19] In his study involving SDI funding, he utilized the percentage of voters that supported the president during the last election as a measure of the constituency's support for the president's policies. This measure may not be the wisest choice given the ups and downs of presidential popularity over the course of four years. While it would be ideal to have popularity ratings

for the chief executive before each vote, this type of data is not normally available.

The Presidential Support (PS) rating as published by Congressional Quarterly is used to determine the possible impact of the president on a legislator's decision to support the V-22.[20] The PS rating uses broad categories of votes on issues such as domestic policy and economic affairs, as well as defense/foreign policy, to determine the support rating for each individual member. The calculation of the 1988 PS ratings involved tabulation of member's performance on over 104 recorded votes on which the president took a position. A member who supports the president's position is assumed to oppose continued funding for the V-22.

Political Action Committee (PAC) contributions may also influence how a member votes on an issue. Contribution data obtained from the Federal Election Commission (FEC) on the amounts provided by the Textron Incorporated PAC and the Boeing Company PAC will be compared to voting behavior (support) by members on the V-22. Possible PAC contributions by subcontractors are not considered as a majority of these companies are merely subsidiaries of larger corporations and, as such, do not operate independent PACs. Since any contributions that a member would receive under these circumstances could not be directly traced back to a specific division of a corporation, any linkage to support for the V-22 would be impossible to establish. It is assumed that members receiving funding from these PACs will support the V-22.

Personal factors are those elements that represent a member's personal experience. It represents other variables that are not measured by the categories of jobs, ideology, presidential support, and PACs. Congress has had a long "love affair" with the U.S. Marine Corps. While there is no accurate method to quantify this relationship, a crude measurement would be to examine the voting behavior of former U.S. Marines, such as Sen. John Glenn (D-OH) or Rep. Jack Murtha (D-PA), now serving in Congress as it relates to the V-22.[21] It is assumed that members who were in the Marine Corps are understanding of its needs and sympathetic to its programs and would support funding for the V-22.

Regional factors are also included in the personal factors category. The area of the nation where an individual grew up can have a profound effect on how that person views an issue. It is often noted that Southern Democrats (a.k.a. Dixiecrats) are more pro-defense than their Northern counterparts. The regional breakdowns will be those used by Aage Clausen.[22]

The category of "other" is simply the error factor associated with regression techniques such as logit analysis. It is made up of the variables that are excluded from the analysis for either identification or quantification reasons.

The votes utilized in this analysis are not as plentiful as one would imagine given the high profile of this battle between Congress and the Executive over the fate of the V-22. Voting patterns on overall authorization or appropriation levels for defense—of which the V-22 is a part—may not be accurate indicators of a member's feelings toward the V-22. As noted by Mayer, votes in favor of these

bills have passed by a wide margin in the past and may not reflect the true position an individual holds regarding a specific weapon system in the overall package.[23]

Within the Senate, no roll call vote exists for a separate bill or amendment authorizing or appropriating funds for the V-22. While several votes have been taken on this issue, they were all voice votes that carried in favor of continuation of funding for the V-22 Osprey aircraft.[24]

The House poses an equally perplexing situation. The 1991 Dire Emergency Spending Bill contained a provision requiring the Administration to spend previously allocated FY89 funds for the V-22.[25] This roll call vote, however, is unusable due the wide range of issues addressed in any supplemental spending bill. An earlier vote on an amendment to eliminate funding for the V-22 occurred in the House in 1989 but the V-22 was included in a package that was also trying to strike funding for the F-14D.[26] Since funding for both programs depended on the outcome of the vote, no clear conclusions can be drawn from a member's actions to support or oppose the amendment.

Since a "pure" vote on funding for the V-22 is not available for either legislative chamber, some other measure of a member's support or opposition to this program must be found. Fortunately, both the House and Senate have provided documentation on support for the V-22 program. This support, as previously noted in preceding chapter, is due a confluence of military, economic, and transportation reasons. On 4 June 1992, the Senate sent a letter with 40

signatures to President Bush urging him to work with Congress on the continued development of tiltrotor technology and the V-22.[27] On 22 September 1992, the House sent a similar letter with 219 signatures (over 50% of the members) to President Bush urging cooperation and continuation of the V-22 program.[28] A legislator's signature on either of these letters—in lieu of a clear roll call vote—will be used to indicate support for the V-22 program.

C. LOGIT EQUATIONS

In order to run the logit model for the entire Congress, it must be put into an equation format as follows:

$$\text{Support} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_7\,(\text{TTC}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + e$$

(Equation 1)

The variables are:

SUPPORT	= **1** if the member signed the letter urging President Bush to continue the V-22.
	= **0** if the member did not sign the letter.
JOBS	= number of direct jobs, current or potential, in a member's district due to work related to the V-22.
USMC BASE	= **1** if the member has a Marine Corps installation is his/her district.
	= **0** if otherwise.
ADA	= member's liberal/conservative score.
NSI	= member's "national security index" score.

PARTY = **1** if the member is a Republican.

= **0** if the member is a Democrat.

TTC = **1** if the member is in the TTC.

= **0** if otherwise.

PRES. SUPPORT = Presidential Support (PS) score assigned by Congressional Quarterly.

PAC = Amount of money contributed by prime contractor PACs.

FMR. USMC = **1** if the member is retired U.S. Marine.

= **0** if otherwise.

The equation will be run for both the Senate and the House and a comparison of findings will be discussed in the following chapter.

The equation also will be run to investigate the effects of Committee membership in both the Senate and the House on the decision to support or oppose the V-22. The new equation would be as follows:

$$\text{Support} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_7\,(\text{TTC}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + b_{11}\,(\text{Committee}) + e$$

(Equation 2)

The new variable is:

Senate

COMMITTEE = **1** if the member is assigned to SASC or SAC.

= **0** if otherwise.

House

COMMITTEE = **1** if the member is assigned to HASC or HAC.

= **0** if otherwise.

The equation will also be run to investigate the effects of membership on one of the SASC, HASC, SAC, or HAC subcommittees that have direct jurisdiction over the V-22 and would appear as:

$$\text{Support} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_7\,(\text{TTC}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + b_{12}\,(\text{Subcommittee}) + e$$

(Equation 3)

The new variable is:

Senate

SUBCOMMITTEE = **1** if member is assigned to the SASC subcommittee on Conventional Forces and Alliance Defense, Defense Industry and Technology, Projection Forces and

Regional Defense, or Readiness, Sustainability and Support or the SAC subcommittee on Defense.

= **0** if otherwise.

House

SUBCOMMITTEE = **1** if member is assigned to the HASC subcommittee on Research and Development, Procurement and Military Nuclear Systems, Readiness, or Seapower and Strategic and Critical Materials or the HAC subcommittee on Defense.

= **0** if otherwise.

Additional variations will account for the effect of region and political party affiliation on the voting behavior of a representative on the V-22. Estimates utilizing the logit equations will be calculated for the both chambers and several respective subpopulations.

At the committee and subcommittee level, the logit equation will utilize actual votes as opposed to the surrogate measure of support. Since mark-up sessions are normally conducted in closed session, only one cases is available for examination. It is the mark-up session of the House version of the FY90 Defense Authorization bill conducted by the HASC subcommittee on Procurement and Military Nuclear Systems. The equation will be as follows:

$$\text{Vote} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_7\,(\text{TTC}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + b_{11}\,(\text{Committee}) + e$$

(Equation 4)

The independent variables (those to the right of the equal sign) remain unchanged. The dependent variable is:

Procurement and Military Nuclear Systems Mark-up

VOTE = **1** if the member voted against the reinstatement of the original Cheney procurement submission as offered by Rep. Aspin which would have deleted funding for the V-22.

= **0** if the member voted otherwise.

D. PITFALLS

In his work, Mayer found that political party affiliation and a member's NSI rating had a high degree of multicollinearity.[29] Multicollinearity exists when two independent variables are very highly correlated to each other. In other words, what appears to be two independent variables measuring two different phenomenon is actually two independent variables measuring the *same* phenomenon. This can skew the results of the analysis and lead to incorrect observations about the effect of an independent variable on the dependent variable. Lindsay noted that the ADA and NSI ratings also were subject to multicollinearity.[30] Both of these findings will be tested and the variables of

political party and the ADA rating excluded from future computations should the problem of multicollinearity manifest itself in this study.

One additional pitfall is associated with the utilization of the PS rating. As Congressional Quarterly notes, however, "its usefulness diminishes as the need for detail rises."[31] The degree of explanation provided by this variable will be carefully interpreted and checked for multicollinearity against political party affiliation.

With these possible pitfalls in mind, the findings of the logit analyses are presented in the following chapter.

ENDNOTES TO CHAPTER IV

1. For further discussion of Chi Square analysis see Jarol B. Manheim and Richard C. Rich, eds., *Empirical Political Analysis: Research Methods in Political Science*, 3rd ed., (New York: Longman, 1991), pp. 269-71.

2. Kenneth R. Mayer, "The Politics and Economics of Defense Contracting" (Ph.D. diss., Yale University, 1988), pp. 200-3.

3. An early example is R. Douglas Arnold, *Congress and the Bureaucracy* (New Haven: Yale University Press, 1979), pp. 78-9, 95-128. More recent examples include Kenneth R. Mayer, "The Politics and Economics of Defense Contracting," (Ph.D. diss., Yale University, 1988), pp. 105-207 and James Lindsay, "Testing the Parochial Hypothesis: Congress and the Strategic Defense Initiative," *Journal of Politics*, Vol. 53, No. 3 (August 1991), pp. 860-76.

4. For an individual case, one can calculate the expected probability by multiplying the value of each variable by its coefficient, summing across all variables, and using a table of the cumulative normal distribution to convert the resulting value to a probability. One can determine the marginal impact of a single variable by setting all other variables to their sample means (or some other typical values) while the varying the value of the selected variable and studying how the expected probability changes. Arnold, *Congress and the Bureaucracy*, p. 112.

5. The following section relies heavily on previous work done by Mayer (1988) and Lindsay (1991).

6. On the 201 first tier subcontractor claim see Brendan M. Greeley, "V-22 Review will Focus on Cost, ASW Mission," *Aviation Week and Space Technology*, Vol. , No. (17 November 1986), p. 23. On the claim that over 2000 companies -- this figure includes both first, second and third tier subcontractors -- are involved in the Osprey see Dave Griffiths, "Congress May Ram a Chopper Down the Pentagon's Throat," *Business Week*, Vol. , No. , (5 June 1989), p. 92.

7. Low scale production would be approximately 30-35 units per year. The tie-in to low scale production recently offered by the Bell-Boeing team would only be 1 unit per month. Greg McAdams, Manager, V-22 Business

Development, Boeing Helicopters, *Telephone interview with author*, 6 November 1992.

8. Marine Corps installations are Marine Corps Air Station (MCAS): Yuma, El Toro, Tustin, Kaneohe Bay, Beaufort, and Cherry Point; Marine Corps (MC) Base: Camp Pendleton, Camp H.M. Smith, and Camp Lejeune; MC Air Training Center Palm Springs, MC Recruiting Depot: San Diego and Parris Island, MC Combat Development Command, and MC Logistics Basea at Barstow, CA and Albany, GA. The Naval Amphibious Bases at Coronado, CA and Little Creek, VA are counted as "Marine Corps" instalations due to their close identifaction with the Marine Corps mission of amphibious assault. Marine Corps forces forward deployed in Okinawa and at MCAS Iwakuni, JA are not included in this analysis. The source for the location of Marine Corps installations in a member's district was Eleanor D. Evans, ed., *Congress and Defense 1990* (Washington, D.C.: National Journal, 1990); Navy League of the United States, *Almanac of American Seapower 1992*, (Arlington: Navy League of the United States, 1992), pp. 109-10.

9. Mayer, p. 164.

10. Kalevi J. Holsti, *International Politics: A Framework for Analysis*, 5th ed., (Englewood Cliffs, NJ: Prentice Hall, 1988), p. 325.

11. *Ibid*, p. 323.

12. *Ibid*, pp. 325-6.

13. The source for the ADA ratings was Norman J. Ornstein, Thomas E. Mann, and Michael J. Malbin, eds., *Vital Statistics on Congress, 1991-1992* (Washington,D.C.: Congressional Quarterly, Inc., 1992), pp. 213-68.

14. William R. Schaffer, "Rating the Performance of the ADA in the U.S. Congress," *Western Political Quarterly*, Vol. 42, No. 1 (March 1989), pp. 33-51.

15. Source for the NSI ratings was the *Almanac of American Politics 1990* (Washington, D.C.: National Journal, 1990).

16. R. Steven Daniels, "Rehabilitating the Raters: An Assessment of Interest Group Ratings of Congress," *Congress and the Presidency*, 16, pp. 23-36.

17. The term "hawkishness" is frequently used by James Lindsay.

18. Kevin M. Leyden and Stephen A. Borrelli, "Party Contributions and Party Unity: Can Loyalty be Bought?" *Western Political Quarterly*, Vol. 43, No. 2 (June 1990), p. 362.

19. Lindsay, p. 861. Also see Dennis W. Gleiber and Steven A. Schull, "Presidential Influence in the Policymaking Process" *Western Political Quarterly*, Vol. 45, No. 2 (June 1992), pp. 441-67.

20. The source for the Presidential Support rating was Ornstein, *et al.*, pp. 213-69. For further discussion of the PS rating see "Reagan's Support Index Up - But Not Much," in *Congressional Quarterly Almanac: 1988* (Washington, D.C.: Congressional Quarterly, Inc., 1988), pp. B23-B32.

21. Biographical information was obtained from the *Almanac of American Politics 1990.*

22. Aage R. Clausen, *How Congressmen Decide: A Policy Focus* (New York: St. Martin's Press, 1973), p. 161. The regions are as follows:

Region	States
Northeast	Maine, New Hampshire, Vermont Connecticut, Rhode Island, Massachusetts
Middle Atlantic	New York, Pennsylvania, New Jersey, Delaware
East North Central	Ohio, Michigan, Indiana, Illinois, Wisconsin
West North Central	Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas
Mountain	Montana, Wyoming, Colorado, New Mexico, Utah, Idaho, Nevada, Arizona
Pacific	California, Oregon, Washington, Alaska, Hawaii
Border	Missouri, Kentucky, Tennessee, Oklahoma, Maryland, West Virginia
South	Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi, Texas, Arkansas

23. Mayer, p. 150.

24. The first vote was on 19 April 1989. The resolution offered little real clue as to how the Senate would actually vote on the V-22 as it was adopted by voice vote in a nearly empty chamber. Pat Towell, "Defense Spending Decisions Sure to Stir Controversy," *Congressional Quarterly*, Vol. 47, No. 16 (22 April 1989), p. 916. For a complete text of the brief debate see Congress, Senate, Senator Stevens of Alaska speaking for the V-22 Aircraft Program, S. Res. 115, 101st Cong., 1st sess., *Congressional Record*, Vol. 135, No. 47 (19 April 1992), pp. S4450, S4507-9. The second favorable voice vote on the V-22 occurred on 2 August 1989 as part of the debate surround the FY90 Defense

Authorization bill. For the text of the amendment see Congress, Senate, Senator Glenn of Ohio speaking for Amendment No. 580: Sense of the Congress on Presidential Support for Continued Development of the V-22 Osprey Program, Amendment 580 to S. , 101st Cong., 1st sess., *Congressional Record*, Vol. 107, No. 35 (2 August 1989), pp. S9440-7. The third related vote was on the House version of the 1991 Dire Emergency Spending Bill. The conference version, which retained the requirement that the Administration spend the FY89 funds for the V-22, was adopted by voice vote. George Hager, "Senate Reworks House's Math on Fiscal 1991 Spending Bill," *Congressional Quarterly*, Vol. 49, No. 11 (16 March 1991), pp. 657-8; *idem*, "Dire Emergency Spending Bill," *Congressional Quarterly*, Vol. 49, No. 14 (6 April 1991), pp. 887, 879.

25. "House Halts Pentagon Move to Transfer FY-89 V-22 Funds in Supplemental," *Inside the Navy*, Vol. 4, No. 10 (11 March 1991), p. 5.

26. Towell, "House Deals Bush Team Blows on Missiles, Weapons Cuts," *Congressional Quarterly*, Vol. 47, No. 30 (29 July 1989), p. 1976.

27. For the complete text of this letter see Congress, Senate, Senator Specter of Pennsylvania speaking in Morning Business on the Letter Sent to President Bush Regarding the V-22 Aircraft, 102nd Cong., 2nd sess., *Congressional Record*, Vol. 138, No. 79 (4 June 1992), S7576-7.

28. Curt Weldon, a Representaitive from Pennsylvania, *Letter to President George Bush*, 22 September 1992.

29. Analysis techniques such as regression and probit require that no two independent variables are highly correlated with each other. If two variables are measuring the same facet of the dependent variable, then the true effect of either variable could cause large variances in the interpretation of the effect of the independent variable on the dependent variable. The accepted threshold for determining that two independent variables are suffering from multicollinearity is an R2 of >= .8. For further information see Manheim and Rich, pp. 285-6.

30. Lindsay, p. 862.

31. *Congressional Quarterly Almanac: 1988*, p. B29.

V. DATA PRESENTATION AND ANALYSIS

Prior to examining the findings of the logit analysis, this section discusses the construction and limitations of the data base, how these limitations affect the outcome of the statistical analysis, and the content of the data tables. Following this section, the findings will be presented in the following order: 102nd Senate, 102nd House, and the 101st HASC Procurement subcommittee vote. Each of these major data presentation areas will present the results for the entire chamber and for respective subpopulations such as political party affiliation or regional variations in terms of the applicable logit models detailed in the preceding chapter.

A. INTRODUCTION

1. Data Base Limitations

The data base contains both nominal and interval entries for each respective Senator or Representative. Most information such as a member's National Security Index (NSI) rating or membership in the Tiltrotor Technology Coalition (TTC) was readily available. The exception to this was information on the names, physical locations, and related employment data for known V-22 subcontractors. While the location of a weapons system prime contractor is

generally well known, the names and locations of subcontractors fall under the auspices of "proprietary information."

In response to the 106 surveys sent out to gather information on site location, nature of the work performed, and related direct employment data (past, present, and future), responses were received for 30% of the queries. From these responses, information was extracted on such events as projected jobs should the V-22 enter low scale production. This data forms the interval level measurement of the independent variable $JOBS_I$. The data was then entered for the respective representative. Both senators from a state received "credit" for V-22 related jobs since each one can claim overlapping constituencies.

Interval level data is preferred since it would provide a clearer picture of a member's response to various numbers of V-22 jobs. However, since the response rate was not as high as anticipated—and thus may not represent a true subsample—V-22 related employment was also coded at the nominal level (1 = Yes, 0 = No) as represented by the independent variable $JOBS_N$. This resulted in 25 states being coded in the Senate as hosting either a prime or first tier subcontractor and assumes the presence of V-22 related employment. In the House, this approach resulted in 122 districts being coded as either hosting or being located within 20 miles of the plant site for a prime or first tier subcontractor. The distinction between the number of jobs generated disappears at this level. However, it does provide for a much larger sample size.

Parallel calculations utilizing the interval and nominal measurement of employment (**JOBS**$_I$ and **JOBS**$_N$) were run for each logit equation applied to the various populations and subpopulations. The findings from these parallel computations are presented in the sections detailing the results for the Senate, House, and HASC Procurement Subcommittee.

2. Data Base and Software Limitations

The data base was examined via JMP (Version 2.0) statistical software. The JMP program recognizes empty cells (no information) in the data base as "missing" and removes that row's information from multivariate calculations such as those detailed by the logit equations utilized in this study. For example, at the **JOBS**$_N$ level via the overall logit equation (Model I), only 97 observations (OBS) are noted. The reason is that three of the senators were newly elected and did not have NSI ratings. This feature alleviates the task of eliminating freshmen from the overall calculations.

To verify that the automatic elimination of those rows with missing information does not skew the effect of other variable that may be present for the affected member, a bivariate test is conducted between the dependent variable (**SUPPORT**) and each of the independent variables. Any statistically significant events, if not detected in the subsequent runs of the major logit equations, were investigated and analyzed.

Prior to the execution of any of the logit equations—for both the entire population and any related subpopulations—a test for multicollinearity was

conducted to verify no excessive relationships exist between the independent variables being utilized in the particular equation. On occasion, this resulted in a different "mix" of independent variables for such subpopulations as Democrats or Republicans or TTC members or Southern Democrats.

Each multicollinearity test started with all independent variables listed in the basic model to ensure standardization between the ensuing calculations. The model was then tailored as required to eliminate any relationships with an R^2 of > .8 with an eye to maintaining the presence of each major area listed in the general logit model. In questionable instances, similar runs were conducted substituting the related variables to verify that no statistically significant events went undetected.

3. Terminology and Data Table Interpretation

Each of the data presentation tables list the independent variable along the vertical or Y-axis. Unless specified, the dependent variable being tested for is **SUPPORT**. Each cell contains two numbers. The top number is the *parameter estimate*. The parameter estimate is the logit coefficient for the respective term (independent variable) in the overall model. It also can assume a positive or negative value. The original coding of the independent variables was done to obtain positive values if the assumptions of the major schools regarding congressional behavior on defense voting prove to be true. For example, if Political Action Committee (PAC) contributions are positively related to support for the V-22, then the values for the parameter **TTL PAC** should be positive.

The second number that appears below the parameter estimate in parentheses ( ) is the Prob>ChiSq (probability of obtaining by chance alone a Chi Square value greater than the one computed) or more commonly known as the *p* value. If the *p* value is less than (<) .05, the parameter is considered to be statistically significant. For quick identification, *p* values <.05 contained in the data presentation tables are in **bold** face.

The term ***R-squared*** (R^2) is a measure of how well the constructed model predicts the event being examined. In this instance, the event was support or non-support for the V-22. The value of R^2 ranges from 0.00 to 1.00 with higher values indicating greater predictive effectiveness of the model. However, logit analysis R^2 values are normally lower than those found in normal regression analysis.

Other terms that describe characteristics of the behavior of the independent variables (parameters) in the overall model are ***unstable, zeroed,*** and ***biased***. The data is determined to be unstable (indicated by *) if the reliability of the estimate becomes questionable. The parameter is listed as zeroed (indicated by #) if it is a linear function of the parameter above it and thus zeroed by the logit calculation. The parameter is listed as biased (indicated by @) if the number is not uniquely estimable by the logit calculation.

Data table interpretation is relatively straightforward. The parameters listed along the vertical detail the independent variables used in the particular logit model. The headers along the horizontal describe the population and related

subpopulations being tested via the model. Cells that contain a series of dashed lines (----) indicate the variable was used but not present for the subpopulation being tested. For example, it is possible to have subpopulations where no former U.S. marines (**FMR.USMC**) are present. This occurrence does not affect the outcome or calculations of the other parameters.

The data table may also contain a cell that is "blocked out" either because the variable is being controlled for in one of the subpopulations (e.g., **PARTY**) or a problem with multicollinearity exists with another variable. If the situation is one of multicollinearity, as was normally the case between the Americans for Democratic Action (ADA) rating and the NSI rating, it will be identified below the data table.

Following the data table, the results are examined in terms of their support or lack of support for the three major explanations for congressional defense voting behavior. The primary variable that represents the parochial imperative hypothesis is **JOBS**. Related to possible parochial behavior is the variable **USMC BASE**. The primary variable for the Military-Industrial Complex (MIC) hypothesis is **TTL PAC**. The final hypothesis is personal preference and is primarily represented by the variable **NSI**. Another measure of personal preference is found in the variable **FMR. USMC** which assumes a positive directional relationship between prior service in the U.S. Marine Corps (USMC) and support for a primarily USMC program—the V-22.

The variable TTC and those related to membership on the armed services and appropriations committees and germane subcommittees are less clear as to which school of thought they fall under. Membership in the Tiltrotor Technology Coalition TTC) could be viewed either as a physical manifestation of the MIC or as a forum the member uses to advance his or her personal preference for developing tiltrotor technology. Committee membership could be interpreted as members using their position to obtain defense dollars for their constituents or as a means for members to pursue their policy interests and objectives. Where these variables fit into the three competing hypotheses will be addressed at the end of each major section.

The focus of this section now turns to the presentation and analysis of the findings for the Senate, House, and the HASC Procurement Subcommittee mark-up vote.

B. FINDINGS: 102nd SENATE (1991-92)

How well do the three major explanations of congressional behavior on defense issues—parochialism, Military-Industrial Complex theory, and personal preference—predict support for the V-22 within the Senate? As noted in Chapter II, only one study—which was questioned on methodological grounds—found evidence of parochialism.[1] None of the studies found that Political Action Committee (PAC) contributions were linked to voting behavior by a Senator. The majority of the studies, however, did find overwhelming support of the

importance of ideology or personal preference as an explanation for predicting and explaining congressional defense voting behavior.

Will these finding be repeated in the case of the V-22? The following sections list the bivariate (Y by X) analyses and subsequent multivariate (Y by Xs) analyses findings for the entire Senate, the Senate Armed Services Committee, the Senate Appropriations Committee, and various subpopulations.

1. Full Senate

a. Senate Bivariate Analysis

The bivariate relationships between support for the V-22 and the full Senate can be found in Appendix A (Table A.1). Statistically significant events detected by this bivariate analysis in the Senate were **PARTY** (p = **0.0262**), Tiltrotor Technology Coalition or **TTC** (p = **0.0000**), and **DEF** (p = **0.0114**).

Within the Senate, **PARTY** was significant because only 23 (52.%) of the Republicans, who were assumed to favor defense spending, indicated support for the V-22. The anticipated number of Republican supporters was expected to be much higher. The 17 Democrats (30.% of all Democrats) was, conversely, much higher than anticipated.

The large number of Republican senators that support the V-22 is surprising given the fact that it was a Republican-led Administration that sought to "kill" the aircraft program. If the president is as influential as some believe, then one would have anticipated the "rank-and-file" in Congress to fall in line and

support the president's position. Had this been the case, one would have expected the support to split along party lines. Thus it was the bi-partisan nature of Senate support that makes **PARTY** a significant event.

The variable **TTC** was significant because of the 21 Senators who are members, 18 (86%) of them signed the letter to President Bush supporting the V-22 program. This variable proves to be a strong predictor of support for the V-22. To verify that **SUPPORT** as indicated by the letter to President Bush was not highly correlated with membership in the TTC, a collinearity test was done and found that **SUPPORT** = .4973 **TTC** (i.e., not >.8). As shown in a bivariate test involving **SUPPORT** and **TTC**, 22 non-members signed the letter (55%).

b. Senate Multivariate Analyses

The three logit equations detailed in the previous chapter were run for the full Senate and with a control for political party affiliation. The detailed results of the first logit equation are shown below in Tables 5.1 and 5.2. The results of the second logit equation which incorporates membership on the SASC or SAC and the third logit equation which tests for the significance of membership on V-22 cognizant SASC or SAC subcommittees are found in Appendix B.

According to the parochial hypothesis, one would expect the presence of V-22 related employment to be a significant predictor of support for the program. Yet logit equation 1 found no statistically significant relationship between **SUPPORT** and $\mathbf{JOBS_I}$ or $\mathbf{JOBS_N}$. In fact, among Senate Democrats, the

direction of the relationship was opposite of what the parochial imperative would predict (i.e., a positive relationship between SUPPORT and JOBS).

TABLE 5.1: LOGIT EQUATION 1 - SENATE ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	0.00066949 (0.4021)	-0.0106195 (0.2421)	0.00328153 (0.3851)
USMC BASE	0.76991415 (0.0805)	0.76447693 (0.1714)	1.4883373 (0.0758)
NSI	0.00745643 (0.5212)	-0.0106699 (0.6388)	0.05686925 (**0.0419**)
PARTY	0.51478661 (0.2425)		
TTC	2.13775057 (**0.0018**)	1.67510255 (0.0703)	4.68086186 (0.2275)
TTL PAC	0.00016167 (0.1025)	0.00008729 (0.5686)	0.000024219 (0.2714)
PS		-0.0155538 (0.8190)	
FMR. USMC	-0.7356724 (0.3389)	-5.6768258 (0.9372)	-1.4406607 (0.6807)
	R^2 = 0.274517 OBS. = 67	R^2 = 0.368324 OBS. = 38	R^2 = 0.45935 OBS. = 29

p values in parentheses

Multicollinearity between NSI and PS within the Senate and among Republicans.

TABLE 5.2: LOGIT EQUATION 1 - SENATE ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.54306088 (0.1273)	-0.2362221 (0.5311)	0.27565794 (0.4632)
USMC BASE	0.624733 (0.0848)	0.60955936 (0.1894)	0.6436519 (0.3024)
NSI	0.00481569 (0.6020)	-0.0164011 (0.4173)	0.02774184 (0.1605)
PARTY	0.54306088 (0.1273)		
TTC	1.48342348 (**0.0002**)	2.22295554 (**0.0086**)	1.10344109 (**0.0373**)
TTL PAC	0.00010533 (0.1484)	0.00016289 (0.2191)	0.00011835 (0.2412)
PS		0.04941024 (0.4439)	
FMR. USMC	-0.0321433 (0.9502)	0.02591423 (0.9694)	0.07606511 (0.9179)
	R^2 = 0.21394 OBS. = 97	R^2 = 0.272155 OBS. = 55	R^2 = 0.183366 OBS. = 42

p values in parentheses

Multicollinearity between **NSI** and **PS** within the Senate and among Republicans.

The MIC proponents would expect to see a positive and statistically significant relationship between **SUPPORT** and **TTL PAC** if the votes-for-dollars hypothesis is correct. The data contained in Tables 5.1 and 5.2, however, did not support this prediction. While the direction of the relationship was as expected (positive), none of the *p* values were below the .05 level of significance.

The personal preference hypothesis holds that the relationship between **SUPPORT** and **NSI** should be positive in direction and statistically significant. Yet the data obtained via logit equation 1 did not overwhelmingly support this assumption. Only when $\textbf{JOBS}_I$ (Table 5.1) was employed did **NSI** achieve significance within the Republican subpopulation of the Senate. The directional relationship for **NSI** was as predicted with the exception of the Democratic subpopulation of the Senate and was consistent regardless of which coding scheme for employment was used.

Membership in the TTC was statistically significant in both cases for the Senate and for the Democrat and Republican subpopulations when $\textbf{JOBS}_N$ was used in logit equation 1. The direction of the relationship between **TTC** and **SUPPORT** was as anticipated (i.e., positive) in all cases.

Logit equation 2 (Tables B.1 and B.2) added the variable **COMMITTEE** to see if membership on the Senate Armed Services Committee (SASC) or Senate Appropriations Committee (SAC) was a significant predictor of behavior on the V-22.

As in logit equation 1, the parochial theory was not supported by the findings and the directional relationships remained the same. Lack of support for the MIC hypothesis continued and the positive directional relationship was seen in all instances with the exception of the Democratic subpopulation. The significance of **NSI** remained >.05 and the directional relationships displayed in Tables 5.1 and 5.2 were repeated.

Just as in logit equation 1, TTC remained a significant variable in the full Senate and for both Democrats and Republicans when $JOBS_N$ was utilized.

Logit equation 3 (Tables B.3 and B.4) replaced the variable COMMITTEE with the variable SUBCOMMITTEE to determine if membership on the relevant SASC or SAC subcommittees was a significant predictor of behavior on the V-22.

Once again, the parochial hypothesis was not in agreement with the data obtained via logit equation 3. V-22 related employment remained an insignificant predictor of support within the Senate for the program. The directional relationship between $JOBS_I$ and SUPPORT remained consistent but when $JOBS_N$ was utilized in the calculations, the direction shifted from positive to negative for the Republican subpopulation.

The nature of the relationship between TTL PAC and SUPPORT remained unchanged from logit equation 2. Among Republicans when jobsN was used, logit equation 3 showed a positive and statistically significant relationship ($p = 0.0303$) between SUPPORT and TTL PAC. The votes-for-dollars hypothesis was only partially borne out by the data obtained thus far.

The primary indicator of personal preference, NSI, achieved statistical significance within the Republican subpopulation regardless of the level of employment data utilized. Directional relationships continued as in the previous two iterations. To this point, the NSI rating has not proven as effective as past studies have indicated.

A secondary indicator of personal preference, FMR. USMC, failed to achieve significance and the directional relationship to SUPPORT shifted as $JOBS_N$ was substituted for $JOBS_I$ within the three logit equations. Although not statistically significant, one would have anticipated that all 9—as opposed to only 5 out of the nine—former U.S. marines in the Senate would have supported the V-22. The data, however, showed this not to be the case.

Membership on the SAC Defense (DEF) subcommittee was statistically significant for the entire Senate (p = **0.0181**) when jobsN was utilized and echoed the relationship discovered during the bivariate analysis of the Senate (see Appendix A). DEF was also significant among the Republican subpopulation (p = 0.0126) when $JOBS_N$ was utilized in logit equation 3. Of the eight Republicans on the SAC Defense subcommittee, seven of them signed the letter to President Bush supporting the V-22.

Membership on the SASC Defense Industry and Technology (DI & T) subcommittee (p = **0.0102**) also proved to be a statistically significant event only when $JOBS_N$ was utilized in logit equation 3. Of the three Republicans on the DI & T subcommittee, both Senators Mack (FL) and Coats (IN) indicated support for the V-22.

As in the previous equations, TTC remained a significant variable in the full Senate and for both Democrats and Republicans when $JOBS_N$ was utilized.

2. The Senate Armed Services Committee (SASC)

a. SASC Bivariate Analysis

Unlike the full Senate, there were no significant events detected in the SASC bivariate analysis (see Table A.2). The results of logit equation 1 are shown in Tables 5.3 and 5.4 while those of logit equation 3 are found in Appendix C.

TABLE 5.3: LOGIT EQUATION 1 - SASC ($JOBS_I$)

Ind. Var.	*SASC*	*Democrats*	*Republicans*
$JOBS_I$	-0.3425673* (0.9997)		-0.3801923@ (0.9993)
USMC BASE	9.76642679* (0.9994)		
NSI	-0.0214921* (0.9999)		-0.6067632* (0.9987)
PARTY	8.65696242* (0.9995)		
TTC	-----		-----
TTL PAC	0.00462182* (0.9980)		0.00455072* (0.9977)
FMR. USMC			0# 0
	R^2 = 1 OBS. = 11	R^2 = 0 OBS. = 0	R^2 = 1 OBS. = 4

p values in parentheses

* unstable data # zeroed @ biased

Multicollinearity between NSI and PS and $JOBS_I$ and FMR. USMC.

TABLE 5.4: LOGIT EQUATION 1 - SASC ($JOBS_N$)

Ind. Var.	*SASC*	*Democrats*	*Republicans*
$JOBS_N$	0.34091377 (0.7009)	-4.2e-10 (1.0000)	0.29131916 (0.7582)
USMC BASE	-0.1295585* (0.8942)	2.36e-10 (1.0000)	
NSI	-0.0206854* (0.6410)	3.1e-14 (1.0000)	-0.3873416* (0.9792)
PARTY	0.58220578 (0.5215)		
TTC	0.46881207 (0.6495)	-----	-0.1479967 (0.8894)
TTL PAC	0.0000946 (0.5535)	-3.99e-14 (1.0000)	-0.0000987 (0.5764)
FMR. USMC	0.90314106 (0.3734)	19.2028948* (0.9983)	-6.4347814* (0.9770)
	R^2 = 0.214521 OBS. = 20	R^2 = 1 OBS. = 11	R^2 = 0.211033 OBS. = 9

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** and $JOBS_I$ and **FMR. USMC**.

As illustrated by Table 5.3 and Table C.1, interval employment parameter estimates among SASC Democrats could not be obtained due to a unique confluence of constraints on the independent variable and interval level employment data. Of the 11 Democrats on the SASC, only 1 signed the letter. This individual, Sen. John Glenn (D-OH), has an empty data cell in the data base and

thus SUPPORT can only assume one level—0 or No—for the remaining 10 Democrats. This situation unfortunately precludes any analysis of why a member may have supported the V-22.

As noted in the bivariate analysis (see Table A.2), none of the variables such as TTC retained statistical significance during the examination of the SASC via logit equations 1 and 3. Any possible observations concerning the nature of the relationships between support and the other variables must be tempered by the fact that a majority of the data was found to be unstable and that the number of observations was very low.

The relationship between JOBS and SUPPORT for the V-22 did not emerge at the committee level of analysis. The direction of the relationship was mixed and shifted from positive to negative with no discernable pattern in either logit equation 1 or 3.

The directional behavior of the main indicator of the MIC hypothesis, TTL PAC was consistent when the full SASC was evaluated but became less clear when the subpopulations of SASC Democrats and Republicans were examined.

The primary measure of personal preference, NSI, exhibited a consistent negative relationship to SUPPORT which was not anticipated. The performance of FMR. USMC remained mixed and inconclusive.

The statistical significance of membership on the SASC DI & subcommittee also failed to repeat at the committee level of analysis.

3. The Senate Appropriations Committee (SAC)

a. SAC Bivariate Analysis

The SAC bivariate analysis indicated JOBS_N (JOBS_N = SUB.VNDR.) with a value of (p = **0.0212**) and **DEF** (p = **0.0152**) as significant events (see Table A.3).

Membership on the SAC Defense subcommittee, **DEF**, was significant in both the full Senate and the SAC. Of the 18 members, 12 (67%) signed the letter of support for the V-22. Within the SAC, JOBS_N took on statistical significance. Of 28 total members, 10 of the 14 (71%) who had a prime or subcontractor in their state signed the letter of support for the V-22. At this level of analysis, there were strong indications of parochial behavior by members of the SAC.

b. SAC Multivariate Analyses

How well do these two statistically significant findings hold up under multivariate examination? The parameter estimates from logit equation 1 are listed below in Tables 5.5 and 5.6. The data from the logit equation 3 is provided in Appendix D.

TABLE 5.5: LOGIT EQUATION 1 - SAC ($JOBS_I$)

Ind. Var.	*SAC*	*Democrats*	*Republicans*
$JOBS_I$	0.0038754 (0.1624)	0.04158391* (0.9996)	0.01300099* (0.9946)
USMC BASE	2.47324615 (0.1823)	38.8928784* (0.9974)	-----
NSI	0.18066007 (0.1321)	1.28103298* (0.9989)	0.89947489 (0.9892)
PARTY	6.82635177 (0.1635)		
TTC	4.12685606 (0.1436)	-23809508* (0.9989)	9.24222235* (0.9967)
TTL PAC	-0.0001308 (0.5031)	-0.0367369* (0.9985)	-0.00000248 (0.9001)
PS		1.97819695* (0.9994)	
FMR. USMC	-5.838039 (0.9656)	2.15769778* (0.9999)	-----
	R^2 = 0.564659 OBS. = 19	R^2 = 1 OBS. = 10	R^2 = 0.637445 OBS. = 9

p values in parentheses

* unstable data

Multicollinearity between NSI and PS for the SAC and SAC Democrats.

TABLE 5.6: LOGIT EQUATION 1 - SAC ($JOBS_N$)

Ind. Var.	*SAC*	*Democrats*	*Republicans*
$JOBS_N$	0.95103247 (0.1275)	18.3713696* (0.9991)	7.31240278* (0.9826)
USMC BASE	1.5563742 (0.1008)	81.8934989* (0.9973)	-----
NSI	0.03448518 (0.1924)	1.38999914* (0.9984)	0.59103749* (0.9719)
PARTY	1.87584474 (0.0985)		
TTC	0.81905412 (0.3167)	1.42571197* (0.9999)	-6.6854867* (0.9841)
TTL PAC	-0.0000993 (0.4581)	-0.0458021* (0.9967)	0.00013026 (0.5269)
PS		3.14490627* (0.9985)	
FMR. USMC	-4.0895589* (0.9603)	38.6854744* (0.9992)	-----
	R^2 = 0.330119 OBS. = 28	R^2 = 1 OBS. = 16	R^2 = 0.554918 OBS. = 12

p values in parentheses

* unstable data

Multicollinearity between NSI and PS for the SAC and SAC Democrats.

Logit equation 1 employed at the committee level yielded no statistically significant events for either the full SAC or the two political subpopulations.

Although not significant, the consistent positive relationship between **SUPPORT** and $\textbf{JOBS}_I$ and $\textbf{JOBS}_N$ was in accordance with the directional behavior predicted by the parochial hypothesis. The significance of $\textbf{JOBS}_N$ seen in the simple bivariate analysis of the SAC failed to repeat under multivariate conditions. For this reason, the significance of $\textbf{JOBS}_N$ displayed under bivariate conditions must viewed cautiously when applied to a multivariate environment. Generalizations from one level of analysis (bivariate) to another level of analysis (multivariate) based on a single observation must be avoided. This problem is referred to as *ecological fallacy* and can result in misleading and incorrect conclusions.[2]

The behavior of the relationship between **SUPPORT** and **TTL PAC** was the opposite of the anticipated direction in five of the six instances detailed in SAC logit equation 1. The MIC hypothesis contends that contributions by PACs will lead to support (i.e., a positive relationship) but the data at this level failed to support that assertion.

Similar to the behavior of the employment variables, **NSI** retained a positive relationship with **SUPPORT** in all instances under logit equation 1. The behavior of the variable **FMR. USMC** was inconclusive as it shifted from positive in the SAC to negative among Democrats and was not present among Republicans.

Data obtained from logit equation 3 provided no significant events and offered an inconsistent pattern of behavior between **SUPPORT** and the major indices of the three competing explanations for congressional behavior.

4. Senate Subpopulations

Several major subpopulation variants were conducted utilizing the full Senate while controlling for geographic region, such as being a Democrat from the South or a member of the TTC. Analysis was also conducted at the SAC Defense subcommittee level. Finally, the possible motivations for becoming a member of the TTC were explored by replacing the dependent variable **SUPPORT** with **TTC** and utilizing the framework delineated in logit equation 1.

a. Geographic Regions

To detect any possibly statistically significant relationships that may be "masked" by presence of any one region, the United States was divided into the eight geographic regions established in Chapter IV. Logit equation 1 was then run for the nation minus each particular region in turn. To expose any hidden statistically significant events that might have been diluted by viewing the nation as a whole, each region was examined in isolation via logit equation 1. The results of these analyses are found in Appendix E. In all cases, **ADA** and **PS** were found to be collinear with **NSI** and dropped in favor the "hawkishness" rating.

The parochial hypothesis was marginally supported by the finding that the variable **USMC BASE** was significant only when the Southern region of the

nation was excluded from logit equation 1 (see Table E.7). The significance was consistent when data sources for the measure of employment changed from JOBS_I (USMC BASE: $p = 0.0378$) to JOBS_N (USMC BASE: $p = 0.0050$). Of the ten states comprising the Southern region, four (GA, NC, SC, and VA) were coded as hosting U.S. Marine Corps installations. This parochial behavior involving military bases is not all that surprising and expected as noted in Chapter II.

The major indices of the MIC and personal preference—TTL PAC and NSI respectively—did not achieve statistical significance and exhibited no clear cut pattern of behavior regarding the relationship between either variable and SUPPORT.

As noted in earlier analyses—and not in keeping with the anticipated relationship with support—FMR. USMC exhibited a negative relationship with SUPPORT with the exception of only two regional exclusions. The instances of regional exclusion where this did not occur were Mountain (JOBS_N) and Southern (JOBS_N and JOBS_I).

The only consistent statistically significant parameter detected when a region was excluded via logit equation 1 was TTC. In all cases where the region was excluded—with the exception of the Southern region where TTC approached statistical significance ($p = 0.0618$) but did not achieve it—TTC was consistently significant regardless of the level of employment data utilized. The usage of JOBS_N, however, provided lower p values TTC.

There was no consistent pattern detected in unanticipated directional relationships when each region was viewed in isolation.

b. Southern Democrat Analysis

The full Senate was examined to control for the influence of the "Dixiecrats." Southern Democrats are often more "hawkish" than other Democrats and tend to be pro-defense. In the 102nd Senate, the average NSI rating for the Southern Democrats was **69** while the remaining Democrats averaged **26**. Logit equations 1, 2, and 3 were utilized to determine if any statistically significant events were present that examinations of the full Senate may have missed due to the presence of the "hawkish" Southern Democrats. The findings of logit equation 1 are given in Tables 5.7 and 5.8. Appendix F contains the results of logit equations 2 and 3.

The parochial hypothesis was again thwarted as neither **JOBS$_I$** or **JOBS$_N$** achieved significance. The directional relationship patterns were consistent showing positive relationships across all three models when Southern Democrats were excluded and when Southern Democrats were examined in isolation. When the remaining Democrats (i.e., Non-Southern Democrats) were examined, the relationship between **SUPPORT** and **JOBS$_I$** and **JOBS$_N$** becomes negative.

The variable **USMC BASE** did achieve significance (p = **0.0487**) only under equation 2 for the Senate when the Southern Democrats were excluded and **JOBS$_I$** was used to measure employment. Again the parochial nature of bases was not unexpected.

TABLE 5.7: LOGIT EQUATION 1
SOUTHERN DEMOCRATIC SENATORS ($JOBS_I$)

Ind. Var.	*Southern Dems Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	0.00015551* (0.8754)	-0.0113746 (0.2226)	6.27e-13 (1.0000)
USMC BASE	0.92588059 .	1.15745665 (0.0937)	-4.65e-10 (1.0000)
NSI	0.00895003 (0.5393)	-0.0337057 (0.2308)	-2.11e-11 (1.0000)
PARTY	0.554744571 (0.3367)		
TTC	1.47932865 (**0.0226**)	1.43324712 (0.1730)	19.2028948* (0.9981)
TTL PAC	0.0002532 (0.0505)	0.00017577 (0.4379)	9.48e-14 (1.0000)
PS		0.0174493* (0.8276)	
FMR. USMC	0.08867912* (0.9264)	-----	3.18e-11 (1.0000)
	R^2 = 0.234583 OBS. = 57	R^2 = 0.307008 OBS. = 28	R^2 = 1 OBS. = 10

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** for the exclusion of Non-Southern Democrats and Southern Democrats.

TABLE 5.8: LOGIT EQUATION 1
SOUTHERN DEMOCRATIC SENATORS ($JOBS_N$)

Ind. Var.	*Southern Dems Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	0.00842167* (0.9755)	-0.3760927 (0.4504)	33.5315714* (0.9997)
USMC BASE	0.66245293 (0.1247)	0.91137102 (0.1757)	3.09929369 (1.0000)
NSI	0.0012356 (0.9166)	-0.0291873 (0.2619)	0.72051095* (0.9990)
PARTY	0.44896621 (0.3329)		
TTC	1.16650204 (**0.0045**)	1.71854783 (0.2619)	41.9171565* (0.9981)
TTL PAC	0.00015067 (0.0806)	0.00028459 (0.1901)	0.00013371* (1.0000)
PS		0.06810075 (0.3472)	
FMR. USMC	0.59355774 (0.3966)	4.95171261 (0.9208)	-1.049745* (0.9999)
	R^2 = 0.189487 OBS. = 84	R^2 = 0.293631 OBS. = 42	R^2 = 1 OBS. = 13

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** for the exclusion of Non-Southern Democrats and Southern Democrats.

TTL PAC came very close to achieving statistical significance within the Senate when Southern Democrats were excluded and $JOBS_I$ is utilized to

measure employment benefits (p = 0.0505). However, the lack of statistical significance of **TTL PAC** to this point continued to diminish the credibility of the MIC proponents. The relationship between **TTL PAC** and **SUPPORT** was positive across all three equations with the exception of the subpopulation non-Southern Democrats when $\textbf{JOBS}_I$ was used in equations 2 and 3.

The performance of the main personal preference indicator, **NSI**, was erratic from equation to equation and no clear pattern emerged regarding the relationship between **NSI** and **SUPPORT** at this level of analysis.

Common to both Table 5.7 and 5.8 was the statistical significance of **TTC** when Southern Democrats were excluded from logit equation 1. The significance of this variable continued in equations 2 and 3 regardless of whether $\textbf{JOBS}_I$ or $\textbf{JOBS}_N$ was used.

The significance of **DEF** (p = **0.0074**) was repeated in equation 3 when $\textbf{JOBS}_N$ was utilized for employment measurement. The elimination of Southern Democrats had no effect on the members of the SAC Defense subcommittee that were signatories to the 4 June 1992 letter to President Bush supporting the V-22.

c. TTC Membership

Since the parameter **TTC** has been so significant in the full Senate models, the possibility existed of this event masking the influence of other parameters such as **JOBS** or **TTL PAC**. To see if this was indeed the case, membership in the TTC was controlled and logit models I, II, and III run for both

members and non-members. Coincident with these calculations, the effect of party was investigated. The first sets of data, Tables 5.9 and 5.10, deal with those senators (21: 13R - 8D) that are members of the TTC. The corresponding data for logit equations 2 and 3 can be found in Appendix G.

TABLE 5.9: LOGIT EQUATION 1 - SENATE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*TTC Senators*	*TTC Democrats*	*TTC Republicans*
$JOBS_I$	0.04432067* (0.9976)	0.01163702* (0.9990)	0.01678097* (0.9988)
USMC BASE	-4.2391286* (0.9998)	14.1312012* (0.9983)	----
NSI	-1.1859809* (0.9973)	-0.7044416* (0.9974)	1.34186129* (0.9984)
PARTY	-7.1874826* (0.9995)		
TTL PAC	0.00481789* (0.9975)	0.00082315* (0.9992)	
FMR. USMC	-33.200437* (0.9985)	-----	-0.5955591* (1.0000)
	R^2 = 1 OBS. = 14	R^2 = 1 OBS. = 7	R^2 = 1 OBS. = 7

p values in parentheses

* unstable data

Multicollinearity between **TTL PAC** and **$JOBS_I$** among Republicans

TABLE 5.10: LOGIT EQUATION 1 - SENATE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*TTC Senators*	*TTC Democrats*	*TTC Republicans*
$JOBS_N$	5.63725927* (0.9754)	11.686309* (0.9991)	-63.421995* (0.9672)
USMC BASE	4.94888688* (0.9831)	3.2017384* (0.9998)	-5.8524156 (0.9753)
NSI	-0.0580768 (0.2265)	-0.7243801* (0.9979)	0.56710554* (0.9705)
PARTY	-7.6467163* (0.9666)		
TTL PAC	0.00010423 (0.4470)	0.00083414* (0.9993)	0.00003805 (0.7998)
FMR. USMC	11.9365761* (0.9646)	-----	
	R^2 = 0.314282 OBS. = 19	R^2 = 1 OBS. = 8	R^2 = 0.273861 OBS. = 11

p values in parentheses

* unstable data

Multicollinearity between **FMR. USMC** and **NSI** among Republicans

The evaluation of the TTC members of the Senate failed to yield statistical significance for either measure of employment across all three equations. The nature of the relationship between **SUPPORT** and $JOBS_I$ and $JOBS_N$ was generally positive for equation 1. This relationship became more unpredictable in equations 2 and 3.

The variable TTL PAC, while it failed to achieve significance in support of the MIC hypothesis, exhibited highly predictable behavior. The relationship to support was positive in all instances across equations 1, 2, and 3 with the exception of Republicans when equation 2 and $JOBS_N$ were brought together.

The personal preference hypothesis failed to emerge as the dominant explanation as NSI and other secondary indicators did not achieve significance. The relationship between NSI and Republicans was positive and consistent in all three equations. The relationship between NSI and SUPPORT was consistent across all three equations for the TTC member senators and for the subpopulation of Democrats. The problem is that it was in the wrong direction.

Committee and subcommittee membership did not attain statistical significance via equations 2 and 3 respectively and directional relationships were inconsistent.

The second set of data tables associated with controlling for the influence of membership in the TTC were the calculations involving those members of the Senate who had not joined the TTC. Tables 5.11 and 5.12 provide the results of the calculations done via logit equation 1. The data for logit equations 2 and 3 for non-TTC Senators can be found in Appendix H.

The leading indicator thus far of any type of parochial behavior on the part of senators and support for the V-22 is not JOBS but USMC BASE. The directional relationships between SUPPORT and JOBS was inconsistent within and

across models 1, 2, and 3. USMC BASE was significant ($p = 0.0314$) in logit equation 2 when $JOBS_I$ was utilized to measure employment.

TABLE 5.11: LOGIT EQUATION 1 - SENATE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Non-TTC Senators*	*Non-TTC Democrats*	*Non-TTC Republicans*
$JOBS_I$	0.08930421 (0.7441)	-0.0093409 (0.2442)	-0.002778 (0.7715)
USMC BASE	0.69739114 (0.0751)	0.7381525 (0.2089)	1.32647072 (0.0899)
NSI	0.007467 (0.4651)	-0.0172488 (0.4870)	0.04016648 (0.1729)
PARTY	0.74068793 (0.0701)		
TTL PAC	0.00011715 (0.2707)	0.00007067 (0.7649)	0.00013345 (0.5445)
FMR. USMC	-0.1775156 (0.9985)	-5.3790976* (0.9398)	-4.9726241* (0.9517)
	R^2 = 0.078737 OBS. = 78	R^2 = 0.18566 OBS. = 31	R^2 = 0.252948 OBS. = 22

p values in parentheses

* unstable data

TABLE 5.12: LOGIT EQUATION 1 - SENATE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Non-TTC Senate*	*Non-TTC Democrats*	*Non-TTC Republicans*
$JOBS_N$	-0.0084074 (0.1662)	-0.3560051 (0.3746)	0.63108865 (0.1477)
USMC BASE	0.90766938 (**0.0455**)	0.75070079 (0.1451)	1.06505468 (0.1277)
NSI	0.00511488 (0.7083)	-0.0250637 (0.2632)	0.02389039 (0.2344)
PARTY	0.39042887 (0.4673)		
TTL PAC	0.00003654 (0.7726)	0.00015548 (0.4717)	0.00002963 (0.8335)
FMR. USMC	-5.4042619* (0.9309)	0.18590278 (0.7881)	-5.4601818* (0.9127)
	R^2 = 0.178307 OBS. = 53	R^2 = 0.12195 OBS. = 47	R^2 = 0.144336 OBS. = 31

p values in parentheses

* unstable data

The variable **TTL PAC** was consistent with regard to the direction of its relationship to **SUPPORT** only within equation 1 (Tables 5.11 and 5.12) and quickly became erratic in equations 2 and 3.

The **NSI** indicator of personal preference was inconsistent with regard to the direction of its relationship to **SUPPORT** not only within equation 1 (Tables 5.11 and 5.12) but also in equations 2 and 3. Only among non-TTC senators was **NSI** normally in the anticipated direction (i.e., positive) with the

exception being seen in equation 3 when $\mathbf{JOBS_1}$ was used to measure employment (Table H.3).

Further exploration into the TTC led to the utilization of a variation of logit equation 1 to search for events that may have statistical significance and could explain why a member might join the TTC. Logit equation 5 is given below.

$$\text{TTC} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + e$$

(Equation 5)

The results of this investigation are provided below in Tables 5.13 and 5.14.

The variable of jobs continued to be statistically insignificant. It appears that employment-related reasons were not a suitable predictor for a member to join the TTC. In fact, in Table 5.13, $\mathbf{JOBS_1}$ was negatively related to membership in the TTC!

With regard to the TTC being an outgrowth of the MIC, the statistical significance of **TTL PAC** (p = **0.0260**) among Democrats when $\mathbf{JOBS_1}$ was used in equation 4, appears to be convincing evidence of this phenomenon. The problem lies in the negative relationship between being a member of the TTC and the receipt of PAC money from the two prime contractors. Further analysis indicated that the lack of PAC receipts from Textron (-0.0006028 / p = **0.0276**) and not Boeing (0.00029344 / p = **0.4873**) was a significant predictor of a

congressman joining the TTC! Surely the TTC, by this yardstick, is not a mere manifestation of the nefarious MIC.

TABLE 5.13: LOGIT EQUATION 4 - SENATE TTC INVESTIGATION ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	-0.0024534 (0.0856)	-0.0026927 (0.1834)	-0.0151963 (0.4703)
USMC BASE	-0.0207719 (0.9655)	1.07010877 (0.0868)	-11.30002* (0.9534)
NSI	0.00425435 (0.7243)	0.00615382 (0.7262)	-0.0926064 (0.4719)
PARTY	0.10123268 (0.8215)		
TTL PAC	-0.0000779 (0.3310)	-0.0003028 (**0.0260**)	0.00037676 (0.6531)
FMR. USMC	0.81519473 (0.0752)	-4.8124017* (0.9493)	8.12788923* (0.9466)
	R^2 = 0.187305 OBS. = 67	R^2 = 0.32532 OBS. = 38	R^2 = 0.646838 OBS. = 29

p values in parentheses

* unstable data

TABLE 5.14: LOGIT EQUATION 4 - SENATE TTC INVESTIGATION ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.28954199 (0.2851)	-0.2249847 (0.5896)	06.68920792* (0.9499)
USMC BASE	-0.2208459 (0.6346)	0.53521193 (0.2932)	-20.214963* (0.9480)
NSI	0.00027077 (0.9784)	0.00720475 (0.6010)	-0.0397211 (0.3755)
PARTY	0.33751305 (0.3631)		
TTL PAC	-0.0000881 (0.1773)	-0.000193 .	-0.0001018 (0.4763)
FMR. USMC	0.58344818 (0.1661)	-4.6316101 (0.9443)	13.6502471* (0.9480)
	R^2 = 0.06798 OBS. = 97	R^2 = 0.132482 OBS. = 55	R^2 = 0.513325 OBS. = 42

p values in parentheses

* unstable data

What then is the TTC? The TTC represents a V-22 unique forum for members to pursue what see believe is good policy. As noted above, it is not a club for pursuing parochial interests nor is it a coalition to seek increased PAC contributions from the prime contractors. The TTC provides a physical framework for a member to advance his or her personal preference for the continued development of tiltrotor technology. As such, membership is a result of personal choice, not parochial or industry pressures.

While the NSI parameter did not achieve statistical significance, the directional relationship was positive among the Senate and among Democrats. The relationship was reversed among Republicans regardless of what measure of employment was used.

d. SAC Defense Subcommittee

The final subpopulation to be examined in the Senate is the SAC Defense subcommittee. A bivariate analysis found that JOBS_N was the sole statistically significant event (p = **0.0027**). Of the nine members that had either a prime contractor or subcontractor in their state, all nine (100%) signed the letter of support to President Bush. Of these nine members only four (44%) were members of the TTC. Would the connection between JOBS_N and SUPPORT be repeated in the multivariate analysis?

Since DEF was a significant parameter, the members of the SAC Defense subcommittee were evaluated via logit model I. Tables 5.15 and 5.16 provide the results of this investigation. Appendix I provides the results of the investigation of the influence of the TTC at the SAC Defense subcommittee level. Only results for non-members of the TTC can be obtained since all TTC members on the SAC Defense subcommittee signed the letter urging President Bush to continue the V-22 program.

TABLE 5.15: LOGIT EQUATION 1
SAC DEF. SUBCOMMITTEE MEMBER ($JOBS_I$)

Ind. Var.	*Def. Subcomm.*	*Democrats*	*Republicans*
$JOBS_I$	-0.1078157* (0.9990)	-0.0144187* (0.9999)	-0.0081314 (0.9995)
USMC BASE	38.4310577* (0.9983)	54.7580236* (0.9987)	-----
NSI	1.89482335* (0.9984)	-0.7281607* (0.9996)	-0.241366 (0.9998)
PARTY	118.927832* (0.9979)		
TTC	107.015917* (0.9979)		-11.458448 (0.9994)
PS		10.7627815* (0.9992)	
TTL PAC	0.00462945* (0.9988)	-0.0147113* (0.9989)	0.000451833 (0.9985)
FMR. USMC	-1.6268535 (1.0000)	15.5282667* (0.9994)	-----
	R^2 = 1 OBS. = 13	R^2 = 1 OBS. = 8	R^2 = 1 OBS. = 5

p values in parentheses

* unstable data

TABLE 5.16: LOGIT EQUATION 1
SAC DEF. SUBCOMMITTEE MEMBER ($JOBS_N$)

Ind. Var.	*Def. Subcomm.*	*Democrats*	*Republicans*
$JOBS_N$	22.9440282* (0.9985)	4.63325507* (0.9998)	-2.3157816* (0.9998)
USMC BASE	38.1147941* (0.9982)	52.5797798* (0.9984)	-----
NSI	1.88689186* (0.9983)	-0.5339405* (0.9998)	0.33969775* (0.9999)
PARTY	117.96756* (0.9978)		
TTC	106.136018* (0.9977)		-7.7114691* (0.9997)
TTL PAC	0.00456468* (0.9987)	-0.0138868* (0.9986)	0.00445857* (0.9984)
PS		9.6152711* (0.9992)	
FMR. USMC	-1.8286316 (1.0000)	13.8918052* (0.9996)	-----
	R^2 = 1 OBS. = 18	R^2 = 1 OBS. = 10	R^2 = 1 OBS. = 8

p values in parentheses

* unstable data

No one parameter achieved statistical significance during the analysis of the SAC Defense subcommittee and its associated subpopulations of Democratic and Republican members. The major indicator of the parochial theory, employment, showed a negative directional relationship with **SUPPORT** in all cases

when $JOBS_I$ was utilized. When $JOBS_N$ was utilized to measure employment, only among Republicans was this negative relationship repeated. The significance displayed during bivariate analysis failed to re-emerge under multivariate conditions.

The major indicator of the influence of the MIC, TTL PAC, was in the anticipated direction—with the exception of Democrats—regardless of which measurement of employment was utilized. As in the case above, however, the MIC parameter, TTL PAC, did not achieve statistical significance for either the overall subcommittee model or the party subpopulations.

The major indicator of ideology, NSI, was also in the anticipated direction for the overall subcommittee. Among the subpopulation of Democrats, the direction was reversed from the expected direction regardless of which measure of employment was used. Among Republicans, the direction of the relationship between NSI and SUPPORT was inconsistent from $JOBS_I$ to $JOBS_N$.

5. Overall Senate Assessment

Within the Senate, the parochial hypothesis that members will support local defense expenditures in the form of jobs to satisfy the perceived demand from their constituents was not borne out by any of the multivariate analyses. The only time employment was significant was during the bivariate test for the SAC and involved only 28 (28%) of the entire Senate. Its failure to re-emerge under multivariate logit testing makes the applicability of its bivariate significance questionable.

The MIC hypothesis fares just as poorly, with **TTL PAC** never achieving statistical significance when the dependent variable was **support**. On only one occasion did **TTL PAC** come close (p = 0.0505) and that was when logit equation 1 was run for entire Senate with the exception of the Southern Democrats. Since membership in the TTC was not a result of the influence of the MIC, this hypothesis clearly lacks applicability in the Senate.

The last remaining explanation is personal preference. It is not, however, as powerful a predictor of support for the V-22 as past studies which have used the NSI rating appear to indicate. Within the Senate **NSI** was positively correlated with **SUPPORT** in most cases, however, it rarely achieved statistical significance. One possible reason is the waning effectiveness of this and other similar scales of predicting congressional defense voting behavior.

If membership in the TTC is an extension of personal policy as argued, then the personal preference hypothesis achieves a great deal of significance and serves as a powerful predictor for determining support for the V-22 program. Yet, because of the V-22 specific nature of this measure of personal preference, no general statements about the overall predictive power of the personal preference hypothesis are possible.

Finally, membership on the SAC Defense subcommittee and its significance in predicting support can be viewed as a confluence of geographic good fortune and presence on a committee that allows the members to pursue their personal policy goals. States such as Texas, Pennsylvania, New York, and

New Jersey are home to many firms in the aerospace industry. That some subcontractor in their state would be awarded V-22 related work is not all that unusual.

As detailed in Chapter II, many members seek positions on committees and subcommittees for reasons such as constituency service or policy pursuit. As a product of the state which he or she represents, the senator will more than likely be an accurate reflection of his or her electoral constituency. For example, if defense issues are important to the constituents that elected the senator, it is likely that he or she personally believes in a strong defense. As such, membership on one of the military committees may represent the best solution to satisfying constituency demands while pursuing personal policy goals.

At the bivariate level, however, it is clear that a strong and significant relationship exists between employment measured at the nominal level ($JOBS_N$) and support for the V-22. That this relationship did not repeat under multivariate conditions (Table 5.16) highlights the importance of examining all of the factors influencing a member's decision to support the V-22 as opposed to only one variable. Had this not been the done, an incorrect conclusion could have been reached.

Overall, data obtained from the 102nd Senate did not clearly support any of the three major hypotheses. Only weak support for the personal preference hypothesis was indicated via the variable NSI. Thus, the logit model presented in

Chapter IV fails to accurately account for what (if any one factor) motivated Senators to support the continuation of the V-22.

C. FINDINGS: 102nd HOUSE OF REPRESENTATIVES (1991-92)

The focus of this study now turns to an examination of the House of Representatives. Will the logit model be more successful among House members? Will parochial pressures be more evident among House members given their narrower constituency? Will PAC contributions be more important given the increased frequency of costly reelection campaigns as a result of the member's two year terms? Or will personal preference prove to be the power predictor as noted in previous literature?

1. The House

a. House Bivariate Analysis

The bivariate relationships between support for the V-22 and the full House, House Armed Services Committee (HASC), and the House Appropriations Committee (HAC) can be found in Appendix J.

Statistically significant events detected by this bivariate analysis in the House (Table J.1) were the member's National Security Index or NSI (p = **0.0270**) and membership in the Tiltrotor Technology Coalition or TTC (p = **0.0000**). Campaign contributions from the BOEING PAC (p = **0.0003**) and TEXTRON PAC (p = **0.0000**) were in their own right significant as was the resultant variable of Total

PAC or **TTL PAC** (p = **0.0000**). Being a former member of the U.S. Marine Corps or **FMR. USMC** (p = **0.00001**) was also a significant event.

Membership on the **HASC** (p = **0.0000**) and its subcommittees of Procurement and Military Nuclear Systems or **PROC** (p = **0.0004**), Research and Development or **R & D** (p = **0.0121**), Seapower and Strategic and Critical Materials or **SPWR** (p = **0.0013**), and Readiness or **RDNS** (p = **0.0004**) all proved to be significant events. Membership on the HAC subcommittee for Defense or **DEF** (p = **0.0114**) was the final significant event in the bivariate analysis of the entire House.

Within the House, **NSI** was significant but the direction of the relationship with support was not as anticipated. The parameter estimate (-0.0057935) indicated that as a member's NSI rating increased, the probability of that member supporting the V-22 decreased. This may have been caused by the 144 Democrats (66%) that signed the letter of support. The average NSI rating for these representatives was **41** which was below the average NSI of **54** for the entire House. The average NSI score for the 74 Republican members (34%) that signed the letter was **92** and is above the average NSI score for the entire House. The sheer number of Democrats, however, skewed the direction of the relationship between **SUPPORT** and **NSI**. This phenomenon remained consistent in all cases whether at the House level or committee level (entire population).

The variable **TTC** was strongly significant for the House. Of the 126 members, 112 (89%) signed the 22 September 1992 letter of support for the V-22

to President Bush. This degree of support exceeded the random chance occurrence of this event. Just as in the earlier analyses involving the Senate, TTC continued to be a significant variable in many of the following multivariate analyses and was consistent in its anticipated positive relationship with SUPPORT.

The Boeing PAC and Textron PAC contributions were significant both when viewed in isolation and when examined in the aggregate as represented by TTL PAC. The direction was as predicted in the case of the Boeing PAC but was negative for both the Textron PAC and for TTL PAC. The circumstances that affected the direction of the relationship between NSI and SUPPORT also affected the directional relationships between SUPPORT and TEXTRON PAC and TTL PAC.

The variable FMR. USMC was significant because of the 20 Representatives that were in the U.S. Marine Corps, 18 (90%) of them signed the letter supporting the V-22 Osprey. This high rate of support far exceeded what random chance alone would have produced.

Membership on the HASC and its V-22 germane subcommittees PROC, R & D, SPWR, and RDNS was a very significant statistical event. Of the 54 representatives of the HASC, 44 members (82%) were signatories to the letter advocating continuation of the V-22 program. This large percentage is greater than that achieved by chance alone. For the PROC subcommittee, 18 of the 21 members (86%) signed the letter.[3] Of the 21 members assigned to the R & D subcommittee, 16 members initialed the letter of support. For the members of the

SPWR, 14 of the 16 members (87%) signed the letter supporting the V-22. The final HASC subcommittee considered, **RDNS**, yielded 13 of the 14 members (93%) as signatories to the V-22 letter of support.

The last significant event in the House—just as in the case of the Senate—was membership on the HAC **DEF** subcommittee. Of the 13 representatives on this subcommittee, 10 (77%) indicated support for the V-22 program.

b. House Multivariate Analyses

The three logit equations detailed in the previous chapter were run for the full House and with a control for political party affiliation. The detailed results of the first logit equation are shown below in Table 5.17. The results of the second logit equation which incorporates membership on the HASC or HAC and the third logit equation which tests for the significance of membership on V-22 cognizant HASC or HAC subcommittees can be found in Appendix B. As was the case in the Senate, iterations for both the interval measurement of employment (**JOBS**$_I$) and the nominal measurement of employment (**JOBS**$_N$) were conducted.

TABLE 5.17: LOGIT EQUATION 1 - HOUSE ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	-0.0009817* (0.8484)	-0.017336 (0.5559)	-0.0010117 (0.8774)
USMC BASE	-0.3971106 (0.4296)	-0.6926282 (0.2295)	3.56150103 (0.9172)
NSI	-0.0171584 (**0.0028**)	-0.0216954 (**0.0009**)	-0.0154792 (0.3988)
PARTY	-0.9044956 (**0.0001**)		
TTC	1.14429758 (**0.0000**)	0.99336569 (**0.0000**)	1.33019071 (**0.0000**)
TTL PAC	-0.0002053 (**0.0486**)	-0.0002167 (0.1485)	-0.0001463 (0.3381)
PS			0.032133448 (0.2306)
FMR. USMC	0.96907085 (**0.0205**)	4.99130304* (0.8480)	0.49347288 (0.3433)
	R^2 = 0.243043 OBS. = 294	R^2 = 0.240608 OBS. = 184	R^2 = 0.277239 OBS. = 110

p values in parentheses

* unstable data

Multicollinearity between NSI and PS within the House and among Democrats.

TABLE 5.18: LOGIT EQUATION 1 - HOUSE ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.32250091 **(0.0264)**	0.19684613 (0.2911)	0.43999598 (0.0672)
USMC BASE	-0.0048212* (0.9917)	-0.777857 (0.1855)	4.55206279* (0.8918)
NSI	-0.0197373 **(0.0002)**	-0.0240948 **(0.0001)**	-0.009445 (0.5203)
PARTY	-0.9358494 **(0.0000)**		
TTC	1.25119783 **(0.0000)**	1.14375484 **(0.0000)**	1.38499687 **(0.0000)**
TTL PAC	-0.0002333 **(0.0198)**	-0.0002247 (0.1087)	-0.0001999 (0.1676)
PS			0.01104035 (0.5970)
FMR. USMC	1.1035108 **(0.0067)**	4.97388648* (0.8275)	0.71187219 (0.1394)
	R^2 = 0.276815 OBS. = 384	R^2 = 0.271824 OBS. = 237	R^2 = 0.329127 OBS. = 147

p values in parentheses

* unstable data

Multicollinearity between NSI and PS within the House and among Democrats.

According to the parochial hypothesis, one would expect the presence of V-22 related employment to be a significant predictor of support for the program. Yet logit equation 1 found no statistically significant relationship between SUPPORT and $JOBS_I$. When the smaller sample size generated by JOBSI

was used, the direction of the relationship was opposite of what the parochial imperative would predict (i.e., a positive relationship between SUPPORT and JOBS).

However, when $JOBS_N$ was used to measure assumed V-22 employment benefits, the variable became statistically significant. Thus it would appear the parochial imperative hypothesis is supported when the larger sample size provided by $JOBS_N$ was used in logit equation 1. The significance of $JOBS_N$ ceased among the two subpopulations. The directional relationship between SUPPORT and $JOBS_N$ was positive across all cases as predicted by the parochial explanation for congressional voting on defense.

The MIC proponents would expect to see a positive and statistically significant relationship between SUPPORT and TTL PAC if the votes-for-dollars hypothesis was correct. The data contained in Tables 5.17 and 5.18 only partially supported this prediction when the entire House was examined via logit equation 1. While its statistical significance was an interesting discovery, the direction of the relationship was not as expected. The negative relationship between TTL PAC and SUPPORT contradicted the generally positive relationship between these two variables in the Senate. This directional relationship repeated for the subpopulations of Democrats and Republicans and weakened applicability of the MIC hypothesis to the House.

The personal preference hypothesis holds that the relationship between SUPPORT and NSI should be positive in direction and statistically significant. While the data obtained via logit equation 1 found NSI to be

significant within the entire House and among House Democrats, the direction of the relationship between **SUPPORT** and **NSI** was negative. The data, however, did not support the assumptions of the personal preference hypothesis. While it correctly predicted the significance of ideology—as measured by **NSI**—it failed to accurately predict the negative (or inverse) relationship between **SUPPORT** and **NSI**.[4]

TTC, a secondary and V-22 unique measure of personal preference, was statistically significant in both iterations of logit equation 1 for the House and for the Democrat and Republican subpopulations. The direction of the relationship between **TTC** and **SUPPORT** was as anticipated (i.e., positive) in all cases.

FMR. USMC, another secondary indicator of personal preference, proved to be significant in both variations of logit equation 1 only in the case of the entire House. The positive directional relationship was as expected (i.e., that a former member of the U.S. Marine Corps would support a primarily USMC program such as the V-22).

PARTY also proved to be significant in the case of the entire House for both iterations of logit equation 1. The relationship between **SUPPORT** and **PARTY** was negative due to the largely Democratic V-22 support coalition (144 Democrats or 66% and 74 Republicans or 34%).

Logit equation 2 (Tables K.1 and K.2) added the variable **COMMITTEE** to see if membership on the House Armed Services Committee

(HASC) or House Appropriations Committee (HAC) was a significant predictor of behavior on the V-22.

As in logit equation 1, support for the parochial theory was mixed depending on how V-22 employment benefits were measured. The directional relationships remained the same. Lack of support for the MIC hypothesis continued and the negative directional relationship was seen in all instances when **JOBS$_I$** was used to measure V-22 direct employment benefits. As in logit equation 1, **JOBS$_N$** was significant only for the entire House and the positive relationship between **SUPPORT** and **JOBS$_N$** this relationship continued for all cases.

The significance of **TTL PAC** ceased when logit equation 2 was used to predict support for the V-22 program. This casts some doubt on the strength of the main tenet of the MIC hypothesis. The negative directional relationship between **SUPPORT** and **TTL PAC** remained unchanged.

The significance of **NSI** continued for both variants of logit equation 2 in the case of the entire House and for the subpopulation of House Democrats. The directional relationships displayed in Tables 5.17 and 5.18 were repeated.

Just as in logit equation 1, **TTC** remained a significant variable in the full House and for both Democrat and Republican subpopulations regardless of the measure of employment benefits utilized.

FMR. USMC, continued to be significant in both iterations of logit equation 2 but, as in logit equation 1, was only so when the entire House was examined. The positive directional relationship was repeated.

PARTY also proved to be significant in the case of the entire House for both iterations of logit equation 2. The relationship between **SUPPORT** and **PARTY** continued in the negative direction.

Membership on the **HASC** proved to be significant when $\textbf{JOBS}_N$ was utilized in logit equation 2 for both the entire House and for House Democrats. Even in those cases where the variable did not prove to be statistically significant, the directional relationship between **HASC** and **SUPPORT** was positive.

Logit equation 3 (Tables K.3 and K.4) replaced the variable **COMMITTEE** with the variable **SUBCOMMITTEE** to determine if membership on the relevant HASC or HAC subcommittees was a significant predictor of behavior on the V-22.

Iterations of logit equation 3 yielded no change in statistically significant events or the directional relationships determined via logit equation 2.

Membership on the HASC and HAC subcommittees which was so significant in the bivariate analysis of the House failed to emerge in the multivariate analysis calculations of logit equation 3. None of the subcommittee variables even approached significance ($p \leq .05$) and the directional relationships were generally positive as anticipated. Some of the relationships were negative, however, no clear pattern was detected.

2. The House Armed Services Committee (HASC)

a. HASC Bivariate Analysis

The significant events in the HASC bivariate analysis were jobs measured at the nominal level or $\textbf{JOBS}_{\textbf{N}}$ (represented by SUB.VNDR.) with a value of p = **0.0175**, political party affiliation or **PARTY** (p = **0.0267**), membership in the **TTC** (p = **0.0004**), and a member's Presidential Support rating or **PS** (p = **0.0293**).

Bivariate analysis at the committee level for the members of the HASC (Table J.2) found that $\textbf{JOBS}_{\textbf{N}}$ was statistically significant. Of the 54 HASC members, 12 representatives (22%) had a prime contractor or subcontractor that were assumed to provide V-22 related jobs. All of these 12 members (100%) signed the letter of support for the V-22. Of the remaining 42 members without V-22 related employment benefits for their constituents, 32 (76%) still indicated support for the program by signing the letter to President Bush.

A member's political party affiliation was also significant within the HASC. Of the 21 Republican members (Avg. NSI = **97**)—Rep. Blaz was not included—on the committee, 14 (67% - avg. NSI = **96**) signed the letter of support. This figure is greater than that of pure chance (i.e., 50%) and not too surprising as it was assumed and true that Republicans were more pro-defense or "hawkish" than their Democratic counterparts as indicated by the NSI scores. It is among the 33 Democrats on the HASC (Avg. NSI = **49**) that the significance of **PARTY** becomes apparent. 30 (91%) of the HASC Democrats (Avg. NSI = 50) signed the

letter of support for the V-22. Since it was assumed that Democrats were more "dovish" on defense, this finding was significant.

Closely tied to this finding was the significance of PS among members of the HASC. It was assumed that the president has a certain degree of influence over defense issues and, as such, a member's PS rating might provide some insight into potential behavior on an issue. As noted in Chapter III, the Bush Administration lobbied hard against the continuation of the V-22 Osprey.

It was anticipated that members with a high PS rating would endorse the president's position and not lend their support to the V-22 program. Yet the findings (parameter estimate = 0.04515711) did not support this assumption. The event was statistically significant but the direction of the relationship between PS and SUPPORT was opposite of what one would expect. Member's with a high PS rating should oppose the continuation of the V-22 program. This was not the case and as a member's PS rating increased, the probability of that member going against the president's position also increased. At the defense committee level, the influence of the Executive appears to be limited.

The final statistically significant event for the HASC was TTC. Of the 54 total members, 23 are members of the TTC and all 23 (100%) signed the letter urging President Bush to continue the V-22 program. Of the 31 remaining non-TTC members of the HASC, 21 (68%) were signatories to the V-22 support

letter. Both of these percentage rates exceed what would be expected from pure chance.

b. HASC Multivariate Analyses

The results of logit equation 1 are shown in Tables 5.19 and 5.20 while those of logit equation 3 are found in Appendix L.

TABLE 5.19: LOGIT EQUATION 1 - HASC ($JOBS_I$)

Ind. Var.	*HASC*	*Democrats*	*Republicans*
$JOBS_I$	0.09251682* (0.9416)	46.3412041* (0.994)	0.02927137* (0.9993)
USMC BASE	-77.510613* (0.8261)	-89.119462* (0.9972)	-12.286692* (0.9993)
NSI	-1.9007207* (0.8189)	1.97917444* (0.9987)	0.82125636@ (0.9995)
PARTY	-92.990972* (0.8147)		
TTC	85.8382134* (0.9239	54.9654092* (0.9985)	32.6564857* (0.9979)
TTL PAC	-0.0007267 (0.3224)	-0.0065994* (0.9996)	0.00061181* (0.9999)
PS		-11.069452* (0.9978)	1.6959714 (0.9981)
FMR. USMC	28.482833* (0.9420)	36.5911368* (0.9992)	7.70316742# 0
	R^2 = 0.915713 OBS. = 40	R^2 = 1 OBS. = 25	R^2 = 1 OBS. = 15

p values in parentheses

* unstable data # zeroed data @ biased data

Multicollinearity between **NSI** and **PS** and $JOBS_I$ and **FMR. USMC**.

TABLE 5.20: LOGIT EQUATION 1 - HASC ($JOBS_N$)

Ind. Var.	*HASC*	*Democrats*	*Republicans*
$JOBS_N$	11.2286964* (0.9965)	-37.912842* (0.9989)	19.046477* (0.9989)
USMC BASE	-106.33938* (0.9761)	-89.099027* (0.9971)	-11.937974* (0.9996)
NSI	-2.6204061* (0.9749)	1.99685312* (0.9988)	3.03209045* (0.9997)
PARTY	-127.46947* (0.9743)		
TTC	116.710898* (0.9761)	48.8362563* (0.9990)	32.9741988* (0.9980)
TTL PAC	-0.0008025 (0.2946)	-0.0105002* (0.9997)	0.00076181* (0.9999)
PS		-11.062021* (0.9978)	1.74092205* (0.9985)
FMR. USMC	37.7757094* (0.9927)	36.5281432* (0.9992)	-14.224366* (0.9999)
	R^2 = 0.921453 OBS. = 49	R^2 = 1 OBS. = 30	R^2 = 1 OBS. = 19

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** and $JOBS_I$ and **FMR. USMC**.

The relationship between **JOBS** and **SUPPORT** for the V-22 did not emerge under multivariate conditions at the committee level of analysis. The significance of $JOBS_N$ detected under bivariate conditions was not repeated when logit equation 1 was applied to the HASC membership. The power of the

parochial hypothesis as an adequate explanation for institutional behavior on defense voting was absent from the HASC committee findings. While the direction of the relationship between **SUPPORT** and **JOBS** was positive, any conclusions drawn from this data must be viewed caution as all six parameter estimates were evaluated as unstable.

The significance of the main indicator of the MIC hypothesis, **TTL PAC** ceased when the full HASC was evaluated via logit equation 1. The negative relationship between **SUPPORT** and **TTL PAC** continued through both iterations of logit equation 1 for the entire HASC and for HASC Democrats but was reversed in the case of HASC Republicans. Again, much of the data was evaluated as unstable and any observations must be made with caution. As was the case with the parochial hypothesis, support for the MIC proponents failed to appear in the examination of the HASC via logit equation 1.

The primary measure of personal preference, **NSI**, lost its statistical significance as did the other secondary indicators of personal preference—**TTC** and **FMR. USMC**—when the population was restricted to only HASC members. **NSI** and **SUPPORT** exhibited a consistent negative relationship for both iterations of logit equation 1 while positive relationships emerged when the two subpopulations were examined.

TTC maintained a steady positive relationship to **SUPPORT** as did **FMR. USMC** with the exception of the Republican subpopulation when $\textbf{JOBS}_N$ was

used to measure employment benefits. Again, the data was unstable in almost every instance.

PARTY also lost its statistical significance as the scope of the analysis narrowed to the HASC. While the negative relationship that was detected in the full House was repeated, the parameter estimates were very large and classified as unstable.

Analysis of the HASC via logit equation 3 failed to yield any statistically significant events. The relationship between **JOBS** and **SUPPORT** was mixed. The negative relationship between **TTL PAC** and **SUPPORT** for all cases continued through both iterations of logit equation 3. The relationship between **NSI** and **SUPPORT** was negative in all cases through both iterations of logit equation 3 with the exception of the Republican subpopulation when $\mathbf{JOBS_I}$ was used to measure employment benefits.

The relationships between **TTC** and **FMR. USMC** and **SUPPORT** continued as in logit equation 1. The negative relationship between **PARTY** and **SUPPORT** was reversed as the measure of employment benefits shifted from jobsI to $\mathbf{JOBS_N}$. All data was unstable.

3. The House Appropriations Committee (HAC)

a. HAC Bivariate Analysis

The HAC bivariate analysis (Table J.3) indicated NSI (p = **0.0342**), TTC (p = **0.0000**), BOEING PAC (p = **0.0162**), TEXTRON PAC (p = **0.0181**) and TTL PAC (p = **0.0105**) as significant events.

The bivariate analysis of the HAC found that NSI repeated as a significant event. As in the House, the direction of the relationship between NSI and SUPPORT was negative (parameter estimate = -0.0148801). This is contrary to the initial assumption that members with high NSI ratings would favor the continuation of the V-22 program. For example, the probability of HAC members with an NSI of 100 (the highest score possible) supporting the V-22 was only 33 percent.

Membership in the TTC also proved to be a significant event. Of the 59 members of the HAC, 20 representatives were affiliated with the TTC. Of these 20 ttc members, 18 (90%) signed the letter supporting the V-22.

Campaign contributions by the two prime contractors—whether viewed in isolation or in the aggregate (TTL PAC)—were the final significant events in the bivariate analysis of the HAC. The directional relationships for all three events were negative which is the opposite of what was predicted by the Military-Industrial Complex (MIC) proponents that believe money "buys" support. The data, however, found the opposite to be true. As the amount of money

received increased, the probability of a member supporting the V-22 decreased. For example, as Boeing PAC receipts increased from $1000 to $3500, the probability of support dropped from 40% to approximately 10%.

b. HAC Multivariate Analyses

The parameter estimates from logit equation 1 are listed below in Tables 5.21 and 5.22. The data from the logit equation 3 is provided in Appendix M.

Logit equation 1 employed at the committee level found two events of three statistically significant events detected via bivariate analysis—NSI and TTC—to be present under multivariate conditions.

Although not significant, the consistent positive relationship between SUPPORT and $JOBS_N$ was in accordance with the directional behavior predicted by the parochial hypothesis. The directional relationship when $JOBS_I$ was used to measure employment benefits negative for both the HAC and HAC Democratic subpopulation. The strength of the parochial imperative continued to weaken from its initial strong showing in the full House.

The relationship between SUPPORT and TTL PAC continued to be negative in all cases across both iterations of logit equation 1. The data at this level failed to support the main tenet of the MIC hypothesis.

TABLE 5.21: LOGIT EQUATION 1 - HAC ($JOBS_I$)

Ind. Var.	*HAC*	*Democrats*	*Republicans*
$JOBS_I$	-0.0516941 (0.6715)	-0.2043081* (0.9799)	0.27327362* (0.9965)
NSI	-0.0330743 (0.0519)	-0.0472817 (**0.0499**)	0.74235012* (0.9182)
PARTY	-1.1137352 (0.0922)		
TTC	1.09575693 (**0.0295**)	1.07212623 (0.1071)	4.25981214 (0.3331)
TTL PAC	-0.000552 (0.0898)	-0.0003231 (0.3453)	-0.007375 (0.4530)
PS			-1.7941937 (0.3512)
FMR. USMC	4.82936726* (0.9288)	5.7037954* (0.9581)	-3.7017443* (0.9968)
	R^2 = 0.381972 OBS. = 44	R^2 = 0.44459 OBS. = 27	R^2 = 0.787974 OBS. = 17

p values in parentheses No **USMC BASE** presence

* unstable data

Multicollinearity between **NSI** and **PS** for the HAC and HAC Democrats.

TABLE 5.22: LOGIT EQUATION 1 - HAC ($JOBS_N$)

Ind. Var.	*HAC*	*Democrats*	*Republicans*
$JOBS_N$	0.37272881 (0.4116)	0.21992048 (0.7059)	1.61053838 (0.2512)
USMC BASE	5.47845572* (0.9677)	-----	3.98329026* (0.9765)
NSI	-0.0438115 (**0.0159**)	-0.0563913 (**0.0352**)	-0.0019698 (0.9684)
PARTY	-1.2801496 (0.0612)		
TTC	1.3641514 (**0.0047**)	1.3684996 (**0.0296**)	1.24126068 (0.1680)
TTL PAC	-0.0005348 (0.0680)	-0.0003749 (0.2496)	-0.0025809 (0.2477)
PS			-0.1448381 (0.2602)
FMR. USMC	5.00288773* (0.9249)	5.2192535* (0.9335)	0.84249458* (0.9950)
	R^2 = 0.435596 OBS. = 58	R^2 = 0.494554 OBS. = 36	R^2 = 0.498168 OBS. = 22

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** for the HAC and HAC Democrats.

NSI achieved statistical significance when $JOBS_I$ was used in logit equation 1 in the case of HAC Democrats (**NSI** was very close to significance in the HAC $p = 0.0519$). When $JOBS_N$ was utilized, the significance of **NSI** spread to the entire HAC. The directional relationship between support and **NSI** was

negative in all significant cases and negative for non-significant cases with the exception of HAC Republicans when $JOBS_I$ is utilized. The personal preference explanation for congressional voting behavior on defense issues is strengthened by these findings.

Further reinforcing the personal preference explanation is the statistical significance of TTC for the HAC in the case of $JOBS_I$ utilization and for the full HAC and HAC Democrats when $JOBS_N$ is utilized in logit equation 1. The relationship between TTC and SUPPORT is positive in all cases through both iterations of logit equation 1.

Data obtained from logit equation 3 yielded the same significant events. However, the absolute number of cases in which they appeared decreased.

NSI was found to be significant only when $JOBS_N$ was used in logit equation 3. The directional relationship between NSI and SUPPORT continued as in logit equation 1.

TTC significance pattern continued as in logit equation 1. The relationship between TTC and SUPPORT is positive in all cases through both iterations of logit equation 3.

4. 102nd House Subpopulations

Several major subpopulation variants were conducted utilizing the full Senate while controlling for geographic region, such as being a Democrat from the South or a member of the TTC. Analysis was also conducted at the SAC Defense subcommittee level. Finally, the possible motivations for becoming a member of

the TTC were explored by replacing the dependent variable SUPPORT with TTC and utilizing the framework delineated in logit equation 1.

a. Geographic Regions

As with the Senate, the House was divided up into eight geographic regions to detect any statistically significant events that may have been "masked" by the presence of any one region or diluted by the presence of the rest of the nation. Tables 5.23 and 5.24 list only statistically significant events and provide the direction (+/-) of the relationship with SUPPORT. Full data tables for each variation can be found in Appendix N.

TABLE 5.23: REGIONAL COMPARISONS ($JOBS_I$)

REGION	$JOBS_I$	BASE	NSI	PARTY	TTC	TTLPAC	FMR.
Border			-	-	+	-	+
EN Cent			-	-	+		+
Mid-Atl			-	-	+	-	+
Mtn			-	-	+		
N.East			-	-	+		+
Pacific			-	-	+		+
South			-	-	+	-	+
WN Cent			-	-	+		+

BASE: USMC BASE **FMR.**: FMR. USMC

TABLE 5.24: REGIONAL COMPARISONS ($JOBS_N$)

REGION	$JOBS_N$	BASE	NSI	PARTY	TTC	TTLPAC	FMR.
Border	+		-	-	+		+
EN Cent			-	-	+		+
Mid-Atl			-	-	+	-	+
Mtn			-	-	+	-	
N. East	+		-	-	+	-	+
Pacific			-	-	+		+
South			-	-	+	_	+
WN Cent	+		-	-	+	-	+

BASE: USMC BASE **FMR.**: FMR. USMC

As made clear by Table 5.23, the regional exclusion variations examined via logit equation 1 and jobsI found no support for the parochial hypothesis. Even when $JOBS_N$ was used (Table 5.24), only three regions found a significant and positive relationship between the nominal level of employment, $JOBS_N$, and **SUPPORT**.

The primary indicator of the MIC, **TTL PAC**, was only found consistently in the Mid-Atlantic and Southern regional exclusion variations. The relationship of **SUPPORT** and **TTL PAC** was negative in both statistically significant instances and in all other cases.

The presence of the primary index of the personal preference hypothesis, **NSI**, was present in every case regardless of whether $JOBS_I$ or $JOBS_N$

was used in logit equation 1. It directional relationship, as noted in earlier findings continued to be negative.

The uniquely V-22 indicator of personal preference, **TTC**, was present and significant in every case of the regional exclusions. Its direction indicated a positive relationship with support.

The variable **FMR. USMC** is present and statistically significant in all of the eight regional variations with the exception of the one involving the Mountain region. As with **TTC**, the relationship between **SUPPORT** and **FMR. USMC** was positive.

Also present and significant in every case was **PARTY**. Like **NSI**, its relationship with **SUPPORT** continued to be negative.

Tables N.9 and N.10 provide the same type of information on each individual region. Unlike the exclusion variations, there were only 11 significant events. **NSI** was involved in two (1 region), **PARTY** in four (2 regions) and **TTC** in five cases (4 regions).

Neither the parochial or MIC explanations were supported by the individual regional data.

b. Southern Democrat Analysis

The full House was examined to control for the influence of the "Dixiecrats." As previously noted, Southern Democrats are often more "hawkish" than other Democrats and tend to be pro-defense. In the 102nd House, the average NSI rating for the Southern Democrats was **61** while the remaining Democrats

averaged 20. Logit equations 1, 2, and 3 were utilized to determine if any statistically significant events were present that examinations of the full House may have missed due to the presence of the "hawkish" Southern Democrats. The findings of logit equation 1 are given in Tables 5.25 and 5.26. Appendix N contains the results of logit equations 2 and 3.

The parochial hypothesis was again thwarted as neither JOBS_I or JOBS_N achieved significance. The directional relationship patterns were mixed. Positive relationships were exhibited across all three cases when JOBS_N was utilized in logit equation 1. The direction of this positive relationship shifted when Southern Democrats were excluded and when Southern Democrats were examined in isolation while using JOBS_I.

The statistical significance of TTL PAC in the case of Southern Democrats being excluded from the rest of the House was consistent through both iterations of logit equation 1. This finding may add some credence to the beliefs of the MIC proponents. The relationship between TTL PAC and SUPPORT was negative in the significant case and in the case of non-southern Democrats regardless of the employment measurement used. The direction of this relationship shifted in both cases for the Southern Democrats.

TABLE 5.25: LOGIT EQUATION 1 - SOUTHERN DEMOCRATIC REPS. ($JOBS_I$)

Ind. Var.	*House Southern Dems Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	-0.0001217 (0.9750)	0.00280141 (0.9400)	-0.3655418* (0.9390)
USMC BASE	2.92273881 (0.8851)	------	-0.5479766 (0.3144)
NSI	-0.0193792 (**0.0329**)	-0.0360214 (0.0716)	-0.0147881 (0.1483)
PARTY	-1.0065815 (**0.0063**)		
TTC	1.27102357 (**0.0000**)	1.21040451 (**0.0001**)	0.65476722 (0.0675)
TTL PAC	-0.0002514 (**0.0289**)	-0.0003492 (0.0720)	0.00016031 (0.5409)
PS		0.01543229 (0.7438)	
FMR. USMC	0.95462575 .	5.09775147* (0.8500)	6.98991325 (0.9944)
	R^2 = 0.271776 OBS. = 239	R^2 = 0.304901 OBS. = 129	R^2 = 0.129771 OBS. = 55

p values in parentheses

* unstable data

Multicollinearity between NSI and PS for the exclusion of Non-Southern Democrats and Southern Democrats.

TABLE 5.26: LOGIT EQUATION 1
SOUTHERN DEMOCRATIC REPS. ($JOBS_N$)

Ind. Var.	*House Southern Dems Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	0.28108206 (0.0763)	0.12227978 (0.3283)	0.77724596 (0.1953)
USMC BASE	4.04921452* (0.8382)	------	-0.5707871 (0.2999)
NSI	-0.0207914 (**0.0129**)	-0.0465498 (**0.0097**)	-0.0166649 (0.0853)
PARTY	-1.0161813 (**0.0028**)		
TTC	1.381612 (**0.0000**)	1.37105815 (**0.0000**)	0.71960919 (**0.0422**)
TTL PAC	-0.000268 (**0.0153**)	-0.0003435 (0.0533)	0.00005644 (0.7884)
PS		0.04282225 (0.2676)	
FMR. USMC	1.11383589 (**0.0069**)	5.03167349* (0.8289)	3.96469403* (0.9366)
	R^2 = 0.300832 OBS. = 320	R^2 = 0.313119 OBS. = 173	R^2 = 0.158861 OBS. = 64

p values in parentheses

* unstable data

Multicollinearity between NSI and PS for the exclusion of Non-Southern Democrats and Southern Democrats.

The performance of the main personal preference indicator, NSI, was significant in the case of the Southern Democrats being excluded from the

rest of the House. This significance was repeated in the case of non-Southern Democrats when **JOBS$_N$** was used to measure employment benefits from the V-22. The negative relationship between **NSI** and **SUPPORT** was consistent across all cases and through both iterations of logit equation 1.

TTC achieved significance in five of the six cases with the only exception being Southern Democrats when **JOBS$_I$** is used in logit equation 1. The positive direction of the relationship with **SUPPORT** was present in all cases regardless of which measure of employment benefits were used.

Another secondary measure of the personal preference hypothesis, **FMR. USMC**, gained significance in the case of the Southern Democrats being excluded from the rest of the House. The positive relationship between **SUPPORT** and **FMR. USMC** was present in the significant and the other five cases examined via logit equation 1.

One final variable that gained significance regardless of which measure of employment was used was **PARTY**. As in previous instances, the relationship with **SUPPORT** was negative and not in the initially assumed direction.

Examination of this subpopulation within the House via logit equations 2 and 3 found very similar results to those obtained under logit equation 1. Once again, support for the parochial hypothesis was absent in all cases.

In defiance of the applicability of the MIC hypothesis, **TTL PAC** lost statistical significance under logit equations 2 and 3. The nature of the

relationship between **TTL PAC** and **SUPPORT** remained unchanged from logit equation 1.

The primary index of the personal preference explanation for congressional defense voting behavior, **NSI**, and the secondary indices of **TTC** and **FMR. USMC** maintained their significance and directional relationships with **SUPPORT** through both iterations of logit equations 2 and 3. The variable **FMR. USMC** actually gained significance in one case—Southern Democrats excluded from the rest of the House—for both logit equations 2 and 3.

c. TTC Membership

Since the parameter **TTC** has been so significant in many of the House models, the possibility existed of this event masking the influence of other parameters such as **JOBS** or **TTL PAC**. To see if this was indeed the case, membership in the TTC was controlled and logit equations 1, 2, and 3 run for both members and non-members. Coincident with these calculations, the effect of **PARTY** was investigated. The first sets of data, Tables 5.27 and 5.28, deal with those representatives (126: 75D - 51R) that are members of the TTC. The corresponding data for logit equations 2 and 3 can be found in Appendix O.

TABLE 5.27: LOGIT EQUATION 1 - HOUSE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*TTC Reps.*	*TTC Democrats*	*TTC Republicans*
$JOBS_I$	-3.6350248* (0.9237)	-4.0740553* (0.9394)	-0.0061172* (0.9930)
USMC BASE	8.61328096* (0.9980)	8.72598839* (0.9987)	5.95849786* (0.9980)
NSI	-0.0072345 (0.5483)	-0.0195417* (0.1981)	0.88017334* (0.9563)
PARTY	-0.2825681 (0.5327)		
TTL PAC	-0.0001135 (0.5665)	0.00013624 (0.5465)	-0.0003358 (0.4479)
PS			-0.0009139 (0.9877)
FMR. USMC	8.59978504* (0.9970)	17.1799297* (0.9940)	5.89718* (0.9816)
	R^2 = 0.10385 OBS. = 89	R^2 = 0.130953 OBS. = 57	R^2 = 0.238175 OBS. = 32

p values in parentheses

* unstable data

Multicollinearity between TTL PAC and $JOBS_I$ among Republicans

TABLE 5.28: LOGIT EQUATION 1 - HOUSE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*TTC Reps.*	*TTC Democrats*	*TTC Republicans*
$JOBS_N$	1.03923478 (0.0519)	5.94022728* (0.9380)	0.44399423 (0.4679)
USMC BASE	4.95077651* (0.9539)	5.7251822* (0.9823)	5.97373257* (0.9835)
NSI	-0.0048406 (0.6792)	-0.0195417 (0.1981)	0.94946555* (0.9457)
PARTY	-0.3224868 (0.4589)		
TTL PAC	-0.0001673 (0.3899)	0.00013624 (0.5465)	-0.0004776 (0.2856)
PS			-0.0007823 (0.9894)
FMR. USMC	5.01111971* (0.9330)	14.0246197* (0.8869)	5.83641243* (0.9777)
	R^2 = 0.137009 OBS. = 121	R^2 = 0.200043 OBS. = 72	R^2 = 0.276761 OBS. = 49

p values in parentheses

* unstable data

The evaluation of the TTC members of the Senate failed to yield statistical significance for either measure of employment across equation 1. The nature of the relationship between **SUPPORT** and $JOBS_I$ was negative for equation 1. This relationship was reversed when $JOBS_N$ was utilized in logit equation 1.

The variable **TTL PAC** failed to achieve significance in support of the MIC hypothesis exhibited mixed behavior across logit equation 1. The relationship to support was positive only in the case of TTC Democrats.

The personal preference hypothesis failed to emerge as the dominant explanation as **NSI** and other secondary indicators did not achieve significance. The relationship between **NSI** and **SUPPORT** for Republicans was positive and but reversed its direction in the other cases. This pattern was consistent through both iterations of logit equation 1.

The parochial hypothesis fared slightly better under logit equations 2 and 3. The positive relationship with **SUPPORT** was repeated for all cases when $\textbf{JOBS}_N$ was used as the measure of V-22 related employment. Using this measure, $\textbf{JOBS}_N$ actually achieved statistical significance when calculated via logit equation 3 (p = **0.0481**). When $\textbf{JOBS}_I$ was used, no significance was detected and the relationship with **SUPPORT** was generally negative in direction.

Neither the primary indicator of the MIC hypothesis, **TTL PAC**, or the major indicator of the personal preference hypothesis, **NSI**, or any of the secondary indicators—**TTC** or **FMR. USMC**—achieved statistical significance under logit equations 2 or 3.

Committee and subcommittee membership did not attain statistical significance via equations 2 and 3 respectively and directional relationships were inconsistent.

The second set of data tables associated with controlling for the influence of membership in the TTC were the calculations involving those members of the House who had not joined the TTC. Tables 5.29 and 5.30 provide the results of the calculations done via logit equation 1. The data for logit equations 2 and 3 for non-TTC Representatives can be found in Appendix P.

TABLE 5.29: LOGIT EQUATION 1 - HOUSE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Non-TTC Representatives*	*Non-TTC Democrats*	*Non-TTC Republicans*
$JOBS_I$	0.00844164 (0.6388)	-0.008905 (0.8040)	0.00626908 (0.8104)
USMC BASE	-4.4756523* (0.8340)	-5.4502429* (0.9252)	-----
NSI	-0.0222356 **(0.0012)**	-0.0236194 **(0.0016)**	-0.027204 (0.2270)
PARTY	-1.1626973 **(0.0000)**		
TTL PAC	-0.0002174 (0.0735)	-0.0003573 **(0.0500)**	-0.0000724 (0.6840)
PS			0.03260164 (0.2984)
FMR. USMC	0.85968093 (0.0562)	5.52504214* (0.9045)	0.26849199* (0.6708)
	R^2 = 0.119306 OBS. = 205	R^2 = 0.161433 OBS. = 127	R^2 = 0.028463 OBS. = 78

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for non-TTC Representatives and for non-TTC Democrats.

TABLE 5.30: LOGIT EQUATION 1 - HOUSE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Non-TTC Representatives*	*Non-TTC Democrats*	*Non-TTC Republicans*
$JOBS_N$	0.22480618 (0.1708)	0.06796166 (0.7460)	0.4013864 (0.1416)
USMC BASE	-0.517514 (0.4288)	-5.5272643* (0.9241)	4.30538491* (0.8867)
NSI	-0.0238345 **(0.0001)**	-0.0259543 **(0.0002)**	-0.0175088 (0.3115)
PARTY	-1.129421 **(0.0000)**		
TTL PAC	-0.0002306 **(0.0446)**	-0.0003302 **(0.0500)**	-0.0001008 (0.5503)
PS			0.00417164 (0.8581)
FMR. USMC	1.03077395 **(0.0147)**	5.49936007* (0.8910)	0.57046149* (0.2769)
	R^2 = 0.112269 OBS. = 263	R^2 = 0.164483 OBS. = 165	R^2 = 0.065834 OBS. = 98

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for non-TTC Representatives and for non-TTC Democrats.

The parochial hypothesis did not benefit from the exclusion of TTC members. While the direction of the relationship with SUPPORT was positive in all cases (with the exception of non-TTC Democrats when jobsI is used) and consistent through all iterations of logit equation 1, at no time did either measure of employment approach statistical significance.

The MIC hypothesis fared much better under controlled conditions for TTC membership. The multivariate analysis of logit equation 1 found **TTL PAC** to be significant in both iterations for the case of non-TTC Democrats. When **$JOBS_N$** was used, **TTL PAC** gained significance for the entire House (minus the TTC members). The directional relationship with **SUPPORT** was negative in all cases.

The personal preference hypothesis also found support under the TTC membership controlled conditions. Under logit equation 1, **NSI** was significant for both House non-TTC representatives and non-TTC Democrats. The relationship between **SUPPORT** and **NSI** remained consistently negative across all cases and iterations of logit equation 1.

A secondary measure of personal preference, **FMR. USMC**, was significant for House non-TTC members when **$JOBS_N$** was used in logit equation 1. The direction of the relationship to **SUPPORT** was positive as expected for this variable.

One additional variable achieving significance was **PARTY** under both iterations of logit equation 1. In both cases, the relationship with **SUPPORT** was negative.

Subsequent evaluations of this controlled data set via logit equations 2 and 3 revealed similar significance and directional relationship patterns for the variables **NSI**, **FMR. USMC**, and **PARTY**. The statistical significance of **TTL PAC** failed to repeat under the conditions of logit equations 2 and 3.

Under logit equation 2, membership on the **HASC** was a significant event (p = **0.0444** when **JOBS$_I$** utilized and p = **0.0369** when **JOBS$_N$** utilized) only in the case on non-TTC Democrats. Its relationship with **SUPPORT** was positive in this significant case.

Neither the HAC or any of the HASC and HAC related subcommittees achieved statistical significance under logit equations 2 and 3 respectively.

Further exploration into the TTC led to the utilization of a variation of logit equation 1 to search for events that may have statistical significance and could explain why a member might join the TTC. Logit equation 5 is given below.

$$\text{TTC} = a_1 + b_2\,(\text{Jobs}) + b_3\,(\text{USMC Base}) + b_4\,(\text{ADA}) + b_5\,(\text{NSI}) + b_6\,(\text{Party}) + b_8\,(\text{Pres.Support}) + b_9\,(\text{PAC}) + b_{10}\,(\text{Fmr. USMC}) + e$$

(Equation 5)

The results of this investigation are provided below in Tables 5.31 and 5.32.

The variable of **JOBS** continued to be statistically insignificant although in the case of **JOBS$_N$** it approached statistical significance (p = 0.0512). It appears that employment-related reasons were not a suitable predictor for a member to join the TTC. The directional relationship between support and jobs was split. It was positive for the cases of **JOBS$_N$**, and negative for all cases using **JOBS$_I$**.

TABLE 5.31: LOGIT EQUATION 5 - HOUSE TTC INVESTIGATION ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	-0.0028141* (0.7373)	-0.0290781 (0.2186)	-0.0011419 (0.7581)
USMC BASE	0.63061007 (0.1638)	0.27899652 (0.5957)	4.8430214* (0.8902)
NSI	-0.0083704* (0.1026)	-0.0114805 (**0.0402**)	0.00147764 (0.9062)
PARTY	-0.3069521* (0.1269)		
TTL PAC	-0.0002738* (**0.0020**)	-0.000212 (0.0751)	-0.0003351 (**0.0139**)
FMR. USMC	0.60142389 (**0.0416**)	0.62296382 (0.1440)	0.5335661 (0.2168)
	R^2 = 0.080903 OBS. = 294	R^2 = 0.077594 OBS. = 184	R^2 = 0.117252 OBS. = 110

p values in parentheses

* unstable data

TABLE 5.32: LOGIT EQUATION 5 - HOUSE TTC INVESTIGATION ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.25292513 (0.0512)	0.15418105 (0.3678)	0.37738659 (0.0639)
USMC BASE	0.60925833 (0.0996)	0.31189278 (0.5555)	0.84158226 (0.1432)
NSI	-0.0096736 (**0.0342**)	-0.0109821 (**0.0280**)	-0.0051529 (0.6453)
PARTY	-0.2423366 (0.1747)		
TTL PAC	-0.0003317 (**0.0000**)	-0.0002844 (**0.0044**)	-0.000398 (**0.0021**)
FMR. USMC	0.59223252 (**0.0194**)	0.61667219 (0.0948)	0.55169906 (0.1187)
	R^2 = 0.095694 OBS. = 384	R^2 = 0.085655 OBS. = 237	R^2 = 0.119532 OBS. = 147

p values in parentheses

* unstable data

With regard to the TTC being an outgrowth of the MIC, the statistical significance of **TTL PAC** among all House members and House Republicans when $JOBS_I$ was used and in all three cases utilizing $JOBS_N$ in equation 4, appears to be convincing evidence of this phenomenon. The problem lies in the negative relationship between being a member of the TTC and the receipt of PAC money from the two prime contractors. As was the case earlier in the Senate, the lack of PAC receipts was a significant predictor of a congressman

joining the TTC! This data only further discredits the votes-for-dollars theorists. If this assertion were true, then the relationship between PAC dollars and membership in an organization such as the TTC should be positive not negative.

The TTC may represent a forum for members to pursue what see believe is good policy. Through a structured organization, members of Congress can efficiently work to develop tiltrotor technology whether they believe it makes sound military sense or good long term economic sense.

Strong support for this interpretation of the ideological nature of membership in the TTC was the statistical significance of NSI among Democrats regardless of employment measure used and among the entire House when $JOBS_N$ was utilized in logit equation 5.

Lending additional credence to this interpretation of the TTC was the significance of FMR. USMC—a secondary measure of personal preference—for the entire House regardless of what measure of V-22 employment was used. The direction of the relationship between FMR. USMC and SUPPORT was positive in all cases through both iterations of logit equation 5.

5. Overall House Assessment

Within the House, the parochial hypothesis that members will support local defense expenditures at the expense of other national interests was supported by one of the bivariate and several of the multivariate studies conducted for this body. While $JOBS_N$ was significant at the bivariate level of analysis for the HASC, this finding should be viewed with some skepticism. If

JOBS$_N$ was the only factor influencing a member's decision then the finding would have merit.

The significance that **JOBS$_N$** achieved within the full House for all three logit equations supported the parochial assumption that members would support the V-22 if a subcontractor was located in or near their district. In further support of the parochial hypothesis was the fact that all three significant events for the full House were positively related to **SUPPORT** for the V-22. The fact that **JOBS$_N$** was both significant and positively related to **SUPPORT** confirmed the predictions of the parochial hypothesis.

The performance of the MIC hypothesis was mixed. **TTL PAC** achieved statistical significance in two of the bivariate analyses and in several of the multivariate studies. For examples see Tables 5.17 and 5.18 or 5.29 and 5.30. In all cases, however, the direction of the relationship was the opposite of what was anticipated. Instead of being positively related to **TTL PAC**, the relationship was negative and indicated that as PAC contributions rose, the probability of a member supporting the V-22 decreased.

The last remaining explanation is personal preference. It is primarily represented by **NSI**, a powerful predictor and explanation of support on defense as the previously cited studies in Chapter II indicated. Within the House, **NSI** consistently achieved statistical significance. Similar to the directional relationship experienced with both **JOBS$_N$** and **TTL PAC**, **NSI** was inversely related to **SUPPORT**. In spite of its statistical significance, **NSI** fails to accurately explain a member's

support for the V-22. Thus the personal preference hypothesis finds only limited support among secondary indicators of this hypothesis.

One such indicator is **FMR. USMC**. As seen in Tables J.1, 5.17, and 5.18, **FMR. USMC** is significant and positively related to support for the V-22 under both bivariate and multivariate conditions. The commonly held belief that "there is no such thing as a former Marine" certainly appears to be the case among those members of the House that had served in the Marine Corps.

If membership in the TTC is an extension of personal policy, as previously argued in the assessment of the Senate, then the personal preference hypothesis achieves a great deal of significance. **TTC** serves as a powerful predictor for determining support for the V-22 program in the House and in the Senate.

Membership on any of the defense related committees or subcommittees had very little significance to support for the V-22 Osprey in terms of multivariate analyses. When evaluated on a bivariate basis, these committees and subcommittees become very important.

One final variable that was significant in several of the analyses was **PARTY**. Political party affiliation can be thought of as the broadest manifestation of ideology. A member chooses to be a Republican or Democrat because of the party's overall philosophy on the role and purpose of the federal government and approach to domestic and international issues. Because various subpopulations—such as pro-defense Democrats—can exist within this large a

group, its usefulness an a consistent predictor is limited and thus is treated separately from personal preference.

Overall, data obtained from the 102nd House provided strong support for the parochial hypothesis when the nominal level of employment, jobsN, was used in the examination of the full House via all three logit equations. Thus far, this has been the only situation in which a variable has achieved statistical significance and was positively correlated with **SUPPORT** for the V-22 within the entire House or Senate.

The data provided no support for the MIC hypothesis. Even though **TTL PAC** was significant in many instances, its relationship to **SUPPORT** was the opposite of the anticipated direction.

The personal preference hypothesis was not fully supported by its primary indicator. Although some support was found among secondary indicators, they are too specific to the V-22 (a primarily U.S Marine Corps program or tiltrotor technology) to be applied to other case studies. As in the Senate, the "classic" explanations for congressional behavior on defense issues found no support within the House.

D. FINDINGS FROM THE HASC PROCUREMENT SUBCOMMITTEE MARKUP - FY90

As detailed in Chapter III, the summer of 1989 was a critical point in the V-22 program. It was during the June 1989 mark-up session for the House version of the FY 90 Defense Authorization bill that Rep. Les Aspin (D-WI) successfully

led a Republican dominated coalition over subcommittee Democrats in an effort to restore the procurement section of the revised Executive budget submission thus eliminating funds for the V-22.

1. Bivariate Analysis

A simple bivariate analysis of this vote found **PARTY** (p = **0.0066**) and **PS** (p = **0.0293**) to be significant events for this subcommittee vote.

PARTY was significant because of the eight Republicans on the 101st **PROC** subcommittee, seven (87%) voted against increased defense spending which would have funded the V-22. This went against the general assumption that Republicans favor higher defense spending. Of the eleven Democrats, eight (73%) voted to restore funding to the Osprey. This also went against the conventional wisdom that Democrats were "dovish" on defense.

The strength of a popular president was seen in the significance between voting to restore the executive's revised procurement budget request and the **PS** rating. President Bush had recently entered office and his popularity was strong enough to convince a sufficient number of Democrats to vote in favor of his proposal for procurement which did not include the V-22.

2. Multivariate Analyses

Table 5.33 provides the results of the analysis of this vote under the multivariate conditions of logit equation 4.

The results of the multivariate analysis in this case are inconclusive as the data is unstable. None of the major explanations for congressional behavior can be supported or refuted in this instance. Perhaps the best indicator was **PARTY** as the vote essentially went along political party lines in favor of the new Republican president.

TABLE 5.33: LOGIT EQUATION 4 - PROCUREMENT FY90 MARK-UP ($JOBS_N$)

Ind. Var.	*Procurement*	*Democrats*	*Republicans*
$JOBS_N$	-0.456812 (0.6879)	290.251271* (0.9982)	-1.133359* (0.9999)
NSI	-0.017731 (0.5886)	5.95453364* (0.9979)	0.03829111* (1.0000)
PARTY	-0.5089512 (0.5822)		
TTL PAC	0.00013956 (0.6812)	0.06497599* (0.9979)	-0.0040595* (0.9988)
PS	0.11615687 (0.2464)	-11.300021* (0.9981)	-0.13558096* (0.9999)
FMR. USMC	0.45033496 (0.6718)	-210.47352* (0.9983)	0# 0
	R^2 = 0.362846 OBS. = 18	R^2 = 1 OBS. = 11	R^2 = 1 OBS. = 8

p values in parentheses

* unstable data # zeroed data

ENDNOTES FOR CHAPTER V.

1. The study cited in Chapter II was Douglas Nelson and Eugene Silberg, "Ideology and Legislator Shirking," *Economic Inquiry*, Vol. 25, No. 1 (January 1987), pp. 15-25. The critique of this study can be found in James Lindsay, *Congress and Nuclear Weapons* (Baltimore: John Hopkins University Press, 1991), p. 127.

2. For more on the problems of ecological fallacy, see Jarol B. Manheim and Richard C. Rich, *Empirical Political Analysis: Research Methods in Political Science*, 3rd ed., (New York: Longman Publishing Group, 1991), pp. 197-8.

3. Rep. Ben Blaz (R - Guam) was not included in the calculation for the House as he does not vote on the floor. He was, however, a signatory to the 22 September letter which would have made the findings even more significant with 19 of 22 members (86%) indicating support for the program.

4. It was noted early on in this chapter that the ADA rating was inversely collinear with the NSI score. If the ADA rating would have been used, the relationship with **SUPPORT** would have been positive and the related events statistically significant. However, utilization of the ADA rating would have not been in keeping with the personal preference hypothesis as members with higher scores are classified as liberal and assumed to not favor defense spending.

VI. CONCLUSIONS

The findings of this study of congressional support for the V-22 Osprey aircraft did not fully support any of the three proposed explanations for institutional behavior on defense issues. At the same time, however, this study allowed for a side-by-side comparison of both chambers of the legislature on a controversial, multi-billion dollar weapon system. What differences or similarities were detected as a result of the analyses conducted on the Senate and House?

A. SENATE AND HOUSE COMPARISONS

The following section compares the Senate and House findings as they relate to the three major explanations—parochialism, Military-Industrial Complex (MIC), and personal preference—for congressional behavior on defense issues.

1. Parochial Hypothesis

The first explanation for institutional—not individual—behavior on support for defense issues such as the V-22 was parochialism. Parochialism was defined in Chapter II as an excessive preoccupation with the local impact of spending decisions at the expense of the national interest. The parochial hypothesis predicted that those members with prime contractors or first tier subcontractors in their state (for senators) or district (for representatives) would support the continuation of the V-22 because of the economic benefits it provided

to their respective state or district. As such, the bivariate and multivariate analyses should detect statistically significant and positive relationships between employment (jobs) and support for the V-22.

The bivariate analyses for the Senate and the House both detected a significant relationship between **JOBS** and **SUPPORT** for the Senate Appropriations Committee (SAC) and the House Armed Services Committee (HASC) when the nominal measurement of employment ($\mathbf{JOBS_N}$) was utilized. Only at the committee level was a relationship between $\mathbf{JOBS_N}$ and **SUPPORT** present.

The multivariate analyses for the Senate found no statistically significant relationship between jobs (regardless of whether the interval or nominal measure of employment was used) and support. Additionally, among Senate Democrats, the relationship to employment was consistently negative. This observation clearly contradicted the anticipated relationship between **JOBS** and **SUPPORT** according to the parochial hypothesis.

The multivariate analyses for the House, on the other hand, found a different situation. When the less descriptive measure of $\mathbf{JOBS_N}$ was used, the nominal measure of employment achieved significance in the full House for logit equations 1, 2, and 3. Also in support of the parochial hypothesis the directional relationship with **SUPPORT** was positive in every case when $\mathbf{JOBS_N}$ achieved significance. In those case where $\mathbf{JOBS_N}$ was not significant, the relationship to **SUPPORT** remained positive in almost every case.

As noted in Chapter II, constituents do not hold their senators strictly accountable for their voting actions unless they stray too far from the constituency mainstream. Unfortunately no equivalent study for representatives was found. Given the significance of the possibility of V-22 direct employment within a representative's district, perhaps members of the House did more than "think about constituent economic level consequences" when they decided to lend their support to the V-22.[1] Perhaps just the knowledge of a V-22 subcontractor in their district (or very close to their district borders) was enough to sway a member to support the program. Of all the primary indicators, only $JOBS_N$ satisfied the two criteria of statistical significance and proper relationship (i.e., a positive relationship) to support for the V-22.

The influence of employment benefits was reversed between the Senate and the House. Senators appear to be "free in the harness" and not constrained by economic benefits measured at the state-wide level. Representatives, however, appeared more responsive to parochial pressures. This may be due to the narrower constituencies that representatives have to draw upon for support and continued service in the House. The two year reelection cycle, where past "transgressions" against district interests could resurface more quickly, may also be a constraint on a representative's freedom to act according to their own policy views.

2. Military-Industrial Complex Hypothesis

The Military-Industrial Complex hypothesis held that Political Action Committee (PAC) contributions to a member would seal support for that company's defense project or opposition to any competitors. The primary variable for this explanation of congressional behavior was total PAC contributions made to a senator or representative. If this hypothesis is correct, it was predicted that as contributions from the Boeing PAC and Textron PAC to a member increased, the probability of that member supporting the V-22 would correspondingly increase. This positive relationship would also be a statistically significant event. Was this assumption supported by the evidence in Chapter V for the Senate and House?

The *bivariate analyses for the Senate* did not detect any significant relationship between total PAC contributions (TTL PAC) and support for the V-22. In the House, however, the bivariate analysis found statistically significant relationships at both the full House level and committee (House Appropriations Committee - HAC) level of analysis. In both of these cases, however, the direction of the relationship was negative. In other words, as PAC dollar amounts increased, the probability of a member supporting the V-22 *decreased*. This contradicted the MIC hypothesis at the bivariate level.

When multivariate analysis was used, only one case ($p = 0.0505$) in the Senate was found to be close to meeting the criteria of statistical significance (≤ 0.05) used in this study.[2] This case was positively related—as were the majority

of non-significant cases—to support for the V-22 program and seemed to lend, at best, limited support for the MIC hypothesis. Because the logit equation excluded Southern Democrats, this finding was not applicable to the full Senate and thus the MIC hypothesis found no support in the Senate.

Once again, the House displayed the exact opposite picture. **TTL PAC** achieved statistical significance on a number of occasions and at various levels of analysis. The relationship to support, however, was the opposite of the anticipated positive correlation. All significant events between **TTL PAC** and **SUPPORT** were inversely related. As PAC contributions rose, the probability of support for the V-22 fell. This situation contradicted the main tenet of the MIC hypothesis and, just as in the Senate, no support for proponents of this explanation for congressional behavior was detected in the study of the V-22.

While there were differences of frequency of statistical significance (greater in the House) and shifts in the directional relationship between chambers, the end result was that the MIC hypothesis was not supported in either chamber.

3. Personal Preference Hypothesis

The final hypothesis, personal preference, held that a member would choose to support or oppose a defense issue based on her or his own personal beliefs and attitudes. This hypothesis is most prevalent in the absence of clearly defined constituency constraints such as the presence of a prime contractor. The primary indicator for this explanation of congressional behavior was the National Security Index (**NSI**) and members with high scores were assumed to be pro-

defense or "hawkish" than those with low scores.[3] Was this institutional behavior in accordance with this hypothesis the reason for Senate and House continuation of the V-22 program?

The bivariate analyses of the Senate and House found no significant relationships between NSI and SUPPORT for the V-22.

The multivariate analyses for the Senate found NSI to be significant and positively correlated only among Republicans in the Senate (Tables 5.1, B.1, B.3, and B.4). Since the finding that NSI is significant and positively correlated with support for the V-22 is select cases among Republicans only represents only one subpopulation within the Senate, any general conclusions about overall Senate behavior was not possible. The failure of NSI to repeat in this fashion among the various subpopulations examined in the Senate detracts even further from the universality of this rather limited finding. In light of these findings, no solid support for the personal preference hypothesis was found within the Senate in the case of the V-22.

The situation in the House was no better. While NSI achieved statistical significance in a number of cases (Tables 5.17, 5.18, 5.21, and 5.23 to name a few), the relationship to support for the V-22 was wrong. In all significant cases, the relationship between NSI and SUPPORT was negative. This contradicted the assumption of the personal preference hypothesis that members with higher NSI scores would be more likely to support the V-22. The data showed this not to be the case and, as such, the personal preference hypothesis was discredited as an

accurate explanation for behavior within the House regarding the continuation of the V-22.

The differences between the Senate and House with regard to the personal preference hypothesis were ones of frequency of significance (greater in the House) and direction of the relationship between NSI and SUPPORT (positive in the Senate, negative in the House). The end result, however, was the same—data from each chamber failed to support the personal preference hypothesis.

B. METHODOLOGICAL LESSONS LEARNED

This section describes problems associated with the methodology involved in studies of this nature. It addresses problems related to the dependent variable and the associated independent variables.

1. Dependent Variable

As noted in Chapter IV, no roll call votes for this controversial issue were available in either the Senate or the House. A member's support for the V-22 was determined by examining signatures on letters from the Senate (4 June 1992) and House of Representatives (22 September 1992) to President Bush urging continuation of the V-22.

The question then becomes one of how "binding" that member's signature becomes should the V-22 come up for a vote on the Senate or House floor. Even though a signature on a letter is not the same as a recorded roll call

vote, it is felt that members who were signatories would support the V-22 in such a situation. For this reason, the use of the letter as a surrogate for a roll call vote did not skew the findings and any conclusions reached are regarded as valid.

2. Independent Variables

The most difficult variable to collect comprehensive data on was the measurement of jobs at the interval level. Since this type of information is regarded as proprietary, obtaining it was a difficult endeavor. Although only limited surveys were returned with useful information, the data was used due to its unique nature and possible insights it might provide.

In lieu of comprehensive interval level data on the number of direct jobs in a senator's state or a representative's district, the simpler measure of employment at the nominal level was used. Its weakness is that it assumes V-22 related employment for each known subcontractor. Data from the surveys showed this not to be the case. For example, one company indicated that the value of its V-22 subcontracted work was over $300,000 but that no one job was a direct consequence of the work performed.

In defense of the use of the nominal level of employment, it is unlikely that a representative will be aware of the actual number of workers at a particular company in her or his state or district directly related to a specific program such as the V-22. What the member is likely to know is if any V-22 work is done in their district or state and will, in all likelihood, assume that jobs among his constituents are linked to the continuation of the program. Armed with only this

rudimentary information, the member will probably vote in favor of sustaining the program if he or she is parochially motivated. For this reason, the use of nominal level employment data is justified and should not discredit any of the findings of this study.

One final problem encountered was obtaining the list of subcontractors from the prime contractors. Again, any such list is usually regarded as proprietary information and generally not available to the public. It is possible that the list obtained from Bell Helicopter-Textron was altered to avoid the detection of any questionable behavior on the part of the prime contractors such as strategic placement of subcontracts in key defense committee members districts or to avoid the appearance of "spreading the contract out" to gain the widest possible support base in Congress.

The data does not support either of these possibilities. As shown in the Senate, the list indicated that the subcontracts were present in 26 states. Also, the analyses conducted and presented in Chapter V showed that membership on the influential Senate Appropriations Committee and House Armed Services Committee and their related germane subcommittees was a significant event. If the list was meant to deceive or was altered to hide any questionable behavior, the data did not support these possible suspicions.

To the contrary (and much to the benefit of the author), both of the prime contractors were open and very helpful in obtaining information related to

the V-22. There is no reason to believe that the list of subcontractors obtained was anything less than genuine.

C. IMPLICATIONS

The data failed to support any of the major hypotheses related to congressional behavior on defense issues such as the V-22. It is clear that some other measure of personal preference is needed or that the NSI tabulation procedures need to be revisited to account for the everyday issues of defense as opposed to the controversial issues involving strategic systems that comprises only a small share of the overall defense budget. Perhaps tabulations of votes on troop levels or procurement of conventional weapons systems such as Multiple Launch Rocket Systems (MLRS) would provide a more accurate indicator of today's defense environment.

For future studies, use of ratings systems such as the ADA or the NSI must used with caution. Efforts to collect employment data at the interval level must also be made if researchers hope to determine at what point a member may "submerge his own policy preferences to those of his constituents."[4]

ENDNOTES TO CHAPTER VI

1. This comment comes from the previously cited study done by Kenneth Mayer. See Kenneth Mayer, "The Politics and Economics of Defense Contracting," (Ph.D. diss., Yale University, 1988), p. 198.

2. That case was when Southern Democrats were excluded from the rest of the Senate in the geo-political variation (Table 5.7).

3. Secondary V-22 specific indicators of the personal preference hypothesis -- membership in the Tiltrotor Technology Coalition (**TTC**) or being a former U.S. Marine (**FMR. USMC**) were also used but because of their narrow focus, they have no widespread applicability. Results of these indicators can be found at the end of each major section in Chapter V.

4. The quote is taken from John W. Kingdon, *Congressmen's Voting Decisions* (New York: Harper and Row, 1973), p. 31.

APPENDIX A. SENATE BIVARIATE ANALYSES

TABLE A.1: 102nd SENATE

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0.015647	100	-----	0.1467
PR.DIR.JOBS	0.010174	100	-0.004855	0.2697
P.PROJ.JOBS	0.012296	100	-0.0007747	0.2283
SUB.VNDR.	0.001239	100	-----	0.6830
S.DIR.JOBS	0.015229	72	-0.0206644	0.2323
S.PROJ.JOBS	0.037574	72	-0.0106825	0.2978
TTL.DIR.JOBS	0.017750	70	-0.0048104	0.2232
TTL.PRJ.JOBS	0.026472	70	-0.0009836	0.1556
TTL.JOBS	0.025216	70	-0.0008235	0.1631
USMC BASE	0.014491	100	-----	0.1625
ADA	0.013812	97	0.00842571	0.1835
NSI	0.010946	97	-0.0064041	0.2372
PARTY	0.036730	100	-----	**0.0262**
TTC	0.177697	100	-----	**0.0000**
PS	0.016669	97	-0.0153861	0.1448
BOEING PAC	0.000096	100	0.00001438	0.9096
TEXTRON PAC	0.003979	100	0.00006485	0.4732
TTL PAC	0.002088	100	0.00003055	0.6008
FMR. USMC	0.007239	100	-----	0.3236
SASC	0.033313	100	-----	0.0342
SAC	0.011903	100	-----	0.2056
CF & AD	0.006474	100	-----	0.3506
DI & T	0.003167	100	-----	0.5138
PROJ	0.010391	100	-----	0.2538
RDNS	0.010391	100	-----	0.2369
DEF	0.047544	100	-----	**0.0114**

TABLE A.2: 102nd SENATE ARMED SERVICES COMMITTEE (SASC)

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0	20	-----	0
PR.DIR.JOBS	-1e-10	20	0#	0
P.PROJ.JOBS	-1e-10	20	0#	0
SUB.VNDR.	0.042274	20	----	0.3687
S.DIR.JOBS	0.087893	12	2.66963234*	0.9749
S.PROJ.JOBS	0.026444	12	0.31786743*	0.9738
TTL.DIR.JOBS	0.100515	11	2.70688112*	0.9745
TTL.PRJ.JOBS	0.029888	11	0.32163031*	0.9735
TTL.JOBS	0.100516	11	2.79914278*	0.9780
USMC BASE	0.003744	20	----	0.7843
ADA	0.066521	20	0.02130668	0.2819
NSI	0.08381	20	-0.0325754	0.3298
PARTY	0.092768	20	----	0.1730
TTC	0.051124	20	----	0.3117
FS	0.125918	20	-0.0515519	0.1530
BOEING PAC	0.000628	20	-0.0000278	0.9101
TEXTRON PAC	0.000023	20	0.00000461	0.9829
TTL PAC	0.000094	20	-0.0000054*	0.9654
FMR. USMC	0.051124	20	----	0.3117
CF & AD	0.042274	20	----	0.3576
DI & T	0.023877	20	----	0.4894
PROJ	0.002514	20	----	0.8225
RDNS	0.002514	20	----	0.8225

* unstable data

zeroed data

TABLE A.3: 102nd SENATE APPROPRIATIONS COMMITTEE (SAC)

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0	28	----	1.0000
PR.DIR.JOBS	0.002932	28	0.00196543	0.7398
P.PROJ.JOBS	0.001112	28	0.00017322	0.8363
SUB.VNDR.	0.136879	28	----	**0.0212**
S.DIR.JOBS	0.231747	19	-0.1463313	0.1680
S.PROJ.JOBS	0.194381	19	-0.0912414*	0.2641
TTL.DIR.JOBS	0.002238	19	0.001258	0.8096
TTL.PRJ.JOBS	0.002572	19	-0.0002185	0.7962
TTL.JOBS	0.002526	19	-0.0001864	0.7980
USMC BASE	-9e-20	28	----	---
ADA	0.01408	28	0.00838858	0.4633
NSI	0.004783	28	-0.00413314	0.6673
PARTY	0.061054	28	----	0.1266
TTC	0.093836	28	----	0.0654
PS	0.007329	28	-0.0098382	0.5953
BOEING PAC	0.039961	28	-0.000288	0.2569
TEXTRON PAC	0.00048	28	-0.0000186	0.8916
TTL PAC	0.008696	28	-0.0000507	0.5691
FMIL [illegible]MC	0.036669	28	----	0.2329
DEF	0.151836	28	----	**0.0152**

* unstable data

APPENDIX B. SENATE

TABLE B.1: LOGIT EQUATION 2 - SENATE ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	0.00065806 (0.4083)	-0.0163279 (0.0912)	0.00410747 (0.3446)
USMC BASE	0.90364279 (0.0643)	1.44308045 (0.1567)	6.62353803* (0.9442)
NSI	0.00680808 (0.5715)	-0.027789 (0.3084)	0.07113526 (0.0832)
PARTY	0.51426926 (0.2622)		
TTC	1.97455532 **(0.0038)**	0.71195529 (0.4818)	4.73105364 (0.2728)
TTL PAC	0.00013122 (0.2314)	-0.0001328 (0.5437)	0.00020214 (0.3608)
PS		-0.0370106 (0.6222)	
MR. USMC	-0.7168186 (0.3429)	-8.0086239* (0.9423)	-1.2892624 (0.7194)
SASC	-0.8162706 (2079)	-6.2902215* (.09344)	-5.220194* (0.9560)
SAC	-0.026177 (0.9454)	-1.7181127 (0.1550)	0.84558499 (0.3045)
	R^2 = 0.298754 OBS. = 67	R^2 = 0.517054 OBS. = 38	R^2 = 0.523046 OBS. = 29

p values in parentheses

* unstable data

PS collinear with NSI in Senate and among Republicans

TABLE B.2: LOGIT EQUATION 2 - SENATE ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.01951501 (0.9387)	-0.2202607 (0.5670)	0.2829886 (0.4686)
USMC BASE	0.65080607 (0.0826)	0.42610398 (0.3911)	1.00986964 (0.1621)
NSI	0.00226992 (0.8137)	-0.024679 (0.2693)	0.02806007 (0.2154)
PARTY	0.5387627 (0.1479)		
TTC	1.43054292 **(0.0003)**	2.09704945 **(0.0122)**	1.14282526 **(0.0460)**
TTL PAC	0.00008689 (0.2554)	0.00015119 (0.2782)	0.00013101 (0.2476)
PS		0.06190831 (0.3536)	
FMR. USMC	0.03770358 (0.9420)	0.03884009 (0.9544)	0.20035975 (0.7933)
SASC	-0.4348298 (0.2742)	-0.5520719 (0.3864)	-0.2805974 (0.6417)
SAC	0.30326617 (0.2773)	0.20891687 (0.5940)	0.67645986 (0.1971)
	R^2 = 0.241204 OBS. = 97	R^2 = 0.290418 OBS. = 55	R^2 = 0.239449 OBS. = 42

p values in parentheses

* unstable data # zeroed data @ biased data

PS collinear with NSI in Senate and among Republicans

TABLE B.3: LOGIT EQUATION 3 - SENATE ($JOBS_1$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_1$	0.00064572 (0.4104)	-0.0168022 (0.0991)	0.00497169 (0.5134)
USMC BASE	0.6245127 (0.2203)	1.50195532 (0.1581)	5.39690219 (0.5379)
NSI	0.00678806 (0.5917)	-0.0286624 (0.2906)	0.09140018 **(0.0288)**
PARTY	0.49655732 (0.3357)		
TTC	2.00028333 **(0.0032)**	0.78990811 (0.4345)	7.4757774 (0.4452)
TTL PAC	0.00016982 (0.1312)	-0.0001971 (0.5418)	0.00064631 (0.1384)
PS		-0.0325433 (0.6585)	
FMR. USMC	-0.7334929 (0.3063)	-8.4604028* (0.9631)	-3.4041629 (0.7163)
CF & AD	4.49143829* (0.9436)	-2.4023568* (0.9908)	-7.3371781@ (0.9569)
DI & T	-9.353136* (0.9301)	-2.4125528* (0.9898)	
PROJ	-4.3463612* (0.9454)	-4.8734995* (0.9789)	5.67546818@ (0.9666)
RDNS	-9.2681608* (0.9285)	-3.4337469* (0.9869)	-3.18e-13# (0.0000)
DEF	0.48403054 (0.3063)	-1.6658431 (0.1947)	4.38826734 (0.1087)
	R^2 = 0.329944 OBS. = 67	R^2 = 0.49485 OBS. = 38	R^2 = 0.687793 OBS. = 29

p values in parentheses

* unstable data # zeroed data @ biased data

PS collinear with NSI in Senate and among Republicans

TABLE B.4: LOGIT EQUATION 3 - SENATE ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.02802294 (0.9155)	-0.3396955 (0.4220)	-0.5649602 (0.4205)
USMC BASE	0.66141336 (0.0971)	0.34581389 (0.5245)	2.27184537 (0.0619)
NSI	0.00721074 (0.4868)	-0.0205417 (0.4017)	0.0825693 **(0.0296)**
PARTY	0.71963499 (0.0792)		
TTC	1.58963387 **(0.0002)**	1.93281029 **(0.0200)**	2.41541782 **(0.0135)**
TTL PAC	0.00012746 (0.0969)	0.0001804 (0.2468)	0.00050923 **(0.0303)**
PS		0.03811145 (0.5845)	
FMR. USMC	-0.0493659 (0.9250)	-5.618648* (0.9559)	0.399551956 (0.8357)
CF & AD	4.10649331 (0.8332)	11.5525017* (0.9559)	0.12051929 (0.8956)
DI & T	0.35356027 (0.5748)	-17.629356* (0.9309)	3.20916615 **(0.0102)**
PROJ	-0.163805 (0.7760)	-4.7119884* (0.9691)	-0.9501736 (0.4813)
RDNS	-0.5797531 (0.3945)	-15.213485* (0.9379)	-0.2026514 (0.8478)
DEF	0.77947524 **(0.0181)**	0.59428932 (0.2385)	3.82468379 **(0.0126)**
	R^2 = 0.276427 OBS. = 97	R^2 = 0.422207 OBS. = 55	R^2 = 0.528393 OBS. = 42

p values in parentheses

* unstable data

PS collinear with **NSI** in Senate and among Republicans

APPENDIX C. SENATE ARMED SERVICES COMMITTEE

TABLE C.1: LOGIT EQUATION 3 - SASC ($JOBS_1$)

Ind. Var.	*SASC*	*Democrats*	*Republicans*
$JOBS_1$	5.64475708 (0.9991)		-0.3801923[#] (0.9993)
USMC BASE	-20.19786 (0.9995)		
NSI	-1.8765747 (0.9991)		-0.6067632[#] (0.9987)
PARTY	-89.640063 (0.9990)		
TTC	-----		-----
TTL PAC	0.00562607 (0.9990)		0.00455072[#] (0.9977)
FMR. USMC			0[#] 0
CF & AD	25.3337583[•] (0.9989)		
DI & T	-48.834619[•] (0.9991)		
PROJ	-129.52916[•] (0.9991)		
RDNS	-126.22778[•] (0.9990)		0[#] 0
	R^2 = 1 OBS. = 11	R^2 = 0 OBS. = 0	R^2 = 1 OBS. = 4

p values in parentheses

[•] unstable data [#] zeroed data [●] biased data

Multicollinearity between **$JOBS_1$** and **FMR. USMC** in SASC; **RDNS** and **CF&AD**, **DI&T**, and **PROJ** and **USMC BASE** and **TTL PAC** among Republicans.

TABLE C.2: LOGIT EQUATION 3 - SASC ($JOBS_N$)

Ind. Var.	*SASC*	*Democrats*	*Republicans*
$JOBS_N$	25.9434701* (0.9988)	-2.89e-9 (1.0000)	-40.478268* (0.9802)
USMC BASE	18.2763227* (0.9991)	-7.66e-10 (1.0000)	
NSI	-0.35325429* (0.9996)	-1.5e-11 (1.0000)	0.09468628* (0.9985)
PARTY	14.9584942* (0.9993)		
TTC	15.1841471* (0.9994)	-----	23.4347895* (0.9834)
TTL PAC	0.00307729* (0.9990)	-7.62e-14 (1.0000)	0.00426087* (0.9838)
FMR. USMC	30.4055759* (0.9985)	19.2028948* (0.9988)	56.2939131* (0.9833)
CF & AD	30.4197571* (0.9975)	-4.08e-10 (1.0000)	
DI & T	39.1986693* (0.9984)	-3.2-9 (1.0000)	44.0289926* (9794)
PROJ	28.3940719* (0.9992)	-9.77e-10 (1.0000)	
RDNS	-11.921711* (0.9996)	-7.24e-10 (1.0000)	9.94203027* (0.9886)
	R^2 = 1 OBS. = 11	R^2 = 1 OBS. = 11	R^2 = 0.758005 OBS. = 9

p values in parentheses

* unstable data # zeroed data @ biased data

Multicollinearity between **NSI** and **USMC BASE**, **FMR. USMC** and **CF & AD**, and **TTL PAC** and **PROJ**.

APPENDIX D. SENATE APPROPRIATIONS COMMITTEE

TABLE D.1: LOGIT EQUATION 3 - SAC ($JOBS_I$)

Ind. Var.	*SAC*	*Democrats*	*Republicans*
$JOBS_I$	-0.1008731* (0.9980)	0.06703458* (0.9995)	-0.0266846* (0.9995)
USMC BASE	161.537124# (0)	34.6867447* (0.9977)	-----
NSI	0.36274349* (0.9975)	2.01647778 (0.9988)	0.71972644* (0.9979)
PARTY	454.0909* (0.9975)		
TTC	293.375161* (0.9975)	-334.95384* (0.9988)	-11.214351* (0.9992)
TTL PAC	0.00456791* (0.9987)	-0.0463481 (0.9986)	0.0043927* (0.9982)
PS		-0.9517236 (0.9998)	
FMR. USMC	-3.2426556 (1.000)	-2.0929028* (0.9999)	-----
DEF	420.935554* (0.9976)	-12.719516* (0.9995)	31.8105093* (0.9978)
	R^2 = 1 OBS. = 19	R^2 = 1 OBS. = 10	R^2 = 1 OBS. = 9

p values in parentheses

* unstable data

Multicollinearity between **NSI** and **PS** in the SAC and among SAC Republicans.

TABLE D.2: LOGIT EQUATION 3 - SAC ($JOBS_N$)

Ind. Var.	*SAC*	*Democrats*	*Republicans*
$JOBS_N$	2.16602572 (0.1092)	39.9257058* (0.9983)	-1.733029* (0.9998)
USMC BASE	2.63105847 (0.7820)	66.4403357* (0.9981)	-----
NSI	0.08427726 (0.0680)	1.76698557* (0.9992)	0.7087618* (0.9978)
PARTY	3.25297012 (0.0355)		
TTC	0.877576354 (0.4877)	2.27000357* (0.9999)	-8.0903763* (0.9994)
TTL PAC	-0.0002042 (0.3803)	-0.0112391* (0.9993)	0.000425723* (0.9976)
PS		0.29573281 (1.0000)	
FMR. USMC	-4.5207777* (0.9561)	27.6485219* (0.9994)	-----
DEF	2.81177447 (0.0408)	21.1355742* (0.9990)	31.0592773* (0.9973)
	R^2 = 0.609255 OBS. = 28	R^2 = 1 OBS. = 16	R^2 = 1 OBS. = 12

p values in parentheses

* unstable data

Multicollinearity between NSI and PS in the SAC and among SAC Republicans.

APPENDIX E. SENATE REGIONAL VARIATIONS

TABLE E.1: BORDER STATES (KY, MD, MO, OK, TN, WV)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00074102 (0.3705)	0* 0
USMC BASE	0.83610119 (0.0803)	—
NSI	.000938562 (0.4782)	0.00051188 (0.9864)
PARTY	0.85674912 (0.0876)	-6.5041039* (0.9717)
TTC	2.23763647 **(0.0036)**	6.61383246* (0.9857)
TTL PAC	0.00017671 (0.0947)	0.00019901 (0.5555)
FMR. USMC	-0.8279452 (0.3390)	—
	R^2 = 0.308124 *OBS.* = 57	R^2 = 0.487405 OBS. = 10
$JOBS_N$	0.00823048 (0.9751)	-6.5980172 (0.9798)
USMC BASE	0.64534453 (0.0884)	—
NSI	0.00660742 (0.5074)	0.00051188 (0.9864)
PARTY	0.75034031 (0.0515)	-6.504104* (0.9717)
TTC	1043371314 **(0.0005)**	6.61383246* (0.9857)
TTL PAC	0.00011103 (0.1441)	0.00019901 (0.5555)
FMR. USMC	-0.0263756* (0.9603)	—
	R^2 = 0.22843 OBS. = 85	R^2 = 0.535973 OBS. = 12

p values in parentheses

* unstable data # zeroed data

TABLE E.2: E.N. CENTRAL STATES (IL, IN, MI, OH, WI)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00061919 (0.4402)	0.01135328* 1.0000
USMC BASE	0.73949328 (0.0923)	----
NSI	0.00930991 (0.4239)	-0.0363305* (1.0000)
PARTY	0.49805026 (0.2527)	16.5882065* (0.9998)
TTC	2.05830773 **(0.0030)**	0* 0
TTL PAC	0.00015635 (0.1209)	0* 0
FMR. USMC	-0.6971925 (0.3523)	----
	R^2 = 0.25[illegible]59 OB[illegible]	R^2 = 1 OBS. = 4
$JOBS_N$	-0.0224717 (0.9307)	0* 0
USMC BASE	0.7205357 (0.0590)	----
NSI	0.00919536 (0.3481)	4.27e-10 (1.0000)
PARTY	0.62536987 (0.0970)	19.2028948@ (0.9985)
TTC	1.4405536 **(0.0005)**	0* 0
TTL PAC	0.00010954 (0.1683)	2.61e-13 (1.0000)
FMR. USMC	-04787069 (0.4044)	19.2028948* (0.9984)
	R^2 = 0.194136 OBS. = 87	R^2 = 1 OBS. = 10

p values in parentheses

* unstable data # zeroed data @ biased data

TABLE E.3: MID-ATLANTIC STATES (DE, NJ, NY, PA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00152812 (0.1842)	-2.27e-9* 1.0000
USMC BASE	0.78773043 (0.0858)	----
NSI	0.01330724 (0.2895)	3084057766* (0.9971)
PARTY	0.57070423 (0.2352)	172.825995* (0.9968)
TTC	3.05962609 **(0.0146)**	-19.202882* 0
TTL PAC	0.00014658 (0.2196)	1.27e-9* (1.0000)
FMR. USMC	-1.2605882 (0.3033)	-38.405777* (0.9983)
	R^2 = 0.282835 OBS. = 60	R^2 = 1 OBS. = 7
$JOBS_N$	-0.0881147 (0.7281)	5.36018695* (1.0000)
USMC BASE	0.58610652 (0.1067)	----
NSI	0.00757244 (0.4261)	-0.2682066* (1.0000)
PARTY	0.53241737 (0.1388)	-7.0701829* (1.0000)
TTC	1.50846795 **(0.0009)**	19.8654467 (0.9993)
TTL PAC	0.00007941 (0.2850)	0.00268422 (1.0000)
FMR. USMC	-0.0800977 (0.8806)	4.52173918 (1.0000)
	R^2 = 0.182327 OBS. = 88	R^2 = 1 OBS. = 9

p values in parentheses

* unstable data # zeroed data @ biased data

TABLE E.4: MOUNTAIN STATES (AZ, CO, ID, MT, NM, NV, UT, WY)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00037836 (0.6434)	0* 0
USMC BASE	0.81344285 (0.1738)	15.7906849* (0.9833)
NSI	0.02225841 (0.1262)	-0.5244356 (0.9842)
PARTY	0.67676151 (0.2045)	-11.394214* (0.9893)
TTC	2.21327821 **(0.0036)**	0* 0
TTL PAC	0.00016327 (0.1479)	-0.0033653 (0.9970)
FMR. USMC	-0.9045244 (0.4108)	9.28411472# (0.9991)
	R^2 = 0.327699 OBS. = 55	R^2 = 0.829909 OBS. = 12
$JOBS_N$	0.0278755 (0.9194)	15.2686455* (0.9956)
USMC BASE	0.54704881 (0.1940)	26.6443283* (0.9898)
NSI	0.01136389 (0.2671)	-2.703759* (0.9825)
PARTY	0.60054223 (0.1288)	-82.78042* (0.9844)
TTC	1.48095025 **(0.0003)**	0.00050423 (1.0000)
TTL PAC	0.00008653 (0.2626)	-0.0133349* (0.9865)
FMR. USMC	0.02999599 (0.9589)	15.2683935* (0.9972)
	R^2 = 0.212284 OBS. = 81	R^2 = 0.873571 OBS. = 16

p values in parentheses

* unstable data # zeroed data @ biased data

TABLE E.5: NORTHEAST STATES (CT, MA, ME, NH, RI, VT)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00114136 (0.1771)	-0.0878488* (0.9683)
USMC BASE	0.7610786 (0.0858)	----
NSI	0.00107667 (0.9314)	-0.0070688* (1.0000)
PARTY	0.33694381 (0.4690)	-0.07686* (1.000)
TTC	2.38742368 **(0.0019)**	----
TTL PAC	0.00016771 (0.1114)	0.0000086* (1.0000)
FMR. USMC	-0.8799365 (0.2921)	----
	R^2 = 0.308607 OBS. = 61	R^2 = 1 OBS. = 6
$JOBS_N$	-0.1232062 (0.6425)	6.43813189* (0.9652)
USMC BASE	0.59122175 (0.1005)	----
NSI	0.00193504 (0.8390)	0.0817191 (0.4920)
PARTY	0.3973367 (0.2810)	4.20621575 (0.3798)
TTC	1.481149786 **(0.0001)**	----
TTL PAC	0.00009173 (0.2070)	0.00037361 (0.5827)
FMR. USMC	-0.0309556 (0.9514)	----
	R^2 = 0.220917 OBS. = 87	R^2 = 0.513643 OBS. = 10

p values in parentheses

* unstable data

TABLE E.6: PACIFIC STATES (AK, CA, HI, OR, WA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00071972 (0.3998)	2.79782274* (1.0000)
USMC BASE	0.75177201 (0.1490)	0* 0
NSI	-0.0054546 (0.6646)	1.74035628* (0.9967)
PARTY	0.04332412 (0.9256)	48.620253* (0.9999)
TTC	2.32273054 **(0.0022)**	0* 0
TTL PAC	0.00021026 (0.0731)	0.00032358 (0.9999)
FMR. USMC	-0.8611017 (0.2866)	----
	R^2 = 0.301111 OBS = 60	R^2 = 1 OBS = 7
$JOBS_N$	0.01900714 (0.9422)	11.0963332* (0.9996)
USMC BASE	0.56865349 (0.1608)	45.8841664* (0.9987)
NSI	-0.0031171 (0.7544)	1.84035681 (0.9979)
PARTY	0.2130217 (0.5654)	104.504266* (0.9981)
TTC	1.56153211 **(0.0002)**	-24.68123* (0)
TTL PAC	0.00012937 (0.1044)	0.00032357* (1.0000)
FMR. USMC	-0.0583927 (0.9092)	----
	R^2 = 0.226217 OBS = 88	R^2 = 1 OBS = 9

p values in parentheses

* unstable data * zeroed data @ biased data

TABLE E.7: SOUTHERN STATES (AL, AR, FL, GA, LA, MS, NC, SC, TX, VA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.0102085 (0.1400)	0.04789799* (0.9980)
USMC BASE	1.30186022 (0.0378)	3.26262725 (0.9998)
NSI	-0.0094087 (0.5521)	-0.0652213* (0.9998)
PARTY	0.010476666 (0.9862)	12.9703585* (0.9990)
TTC	1.21740478 (0.0618)	72.6325428* (0.9975)
TTL PAC	0.0000351 (0.7671)	0.00646588* (0.9979)
FMR. USMC	4.40646147* (0.9257)	-5.4613629* (0.9996)
	R^2 = 0.326804 OBS. = 53	R² = 1 OBS. = 14
$JOBS_N$	0.04981543 (0.8738)	0.24576767 (0.6966)
USMC BASE	1.28119195 (0.0449)	0.34034572 (0.6038)
NSI	0.00370124 (0.7746)	0.02383083 (0.3292)
PARTY	0.65711036 (0.2014)	0.37902286 (0.5666)
TTC	1.69670918 **(0.0050)**	0.58649307 (0.3657)
TTL PAC	0.0000892 (0.4103)	0.0000005 (0.9970)
FMR. USMC	5.58359127* (0.9212)	-6.0083128* (0.9553)
	R^2 = 0.305267 OBS. = 77	R² = 0.262741 OBS. = 20

p values in parentheses

* unstable data

TABLE E.8: W.N. CENTRAL STATES (IA, KS, MN, ND, NE, SD)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.000766 (0.3455)	-2.2761065* (0.9983)
USMC BASE	0.71295415 (0.1127)	----
NSI	0.00604764 (0.6027)	-1.8927406* (0.9986)
PARTY	0.67045887 (0.1418)	-104.09439* (0.9984)
TTC	2.1709975 (0.0026)	----
TTL PAC	0.00018321 (0.0740)	-0.0284513* (0.9982)
FMR. USMC	-0.8496281 (0.3095)	----
	R^2 = 0.29933 OBS. = 60	R^2 = 1 OBS. = 7
$JOBS_N$	0.09440329 (0.7242)	9.38195383* (0.9995)
USMC BASE	0.60189536 (0.1027)	----
NSI	0.00193649 (0.8383)	1.78497406* (0.9986)
PARTY	0.66940932 (0.0743)	24.3161606* (0.9993)
TTC	1.46817482 **(0.0004)**	----
TTL PAC	0.00012257 (0.1096)	-0.0104318* (0.9986)
FMR. USMC	-0.0965889 (0.8557)	----
	R^2 = 0.239999 OBS. = 86	R^2 = 1 OBS. = 11

p values in parentheses

* unstable data

APPENDIX F. SENATE GEO-POLITICAL VARIATION

TABLE F.1: LOGIT EQUATION 2 - SOUTHERN DEMOCRATS ($JOBS_I$)

Ind. Var.	*Senate Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	0.0002818 (0.7771)	-0.0199791 (0.0970)	2.17e-12 (1.0000)
USMC BASE	1.18191201 **(0.0487)**	2.3701885 (0.1855)	-1.88e-9 (1.0000)
NSI	0.00647031 (0.6648)	-0.0741722 (0.2132)	-5.27e-11 (1.0000)
PARTY	0.47544152 (0.4234)		
TTC	1.2646291 **(0.0481)**	0.4450612 (0.7227)	19.2028948* (0.9983)
TTL PAC	0.00019362 (0.1513)	-0.0000922 (0.7971)	3.76e-13 (1.0000)
PS		0.00623648 (0.9507)	
FMR. USMC	0.3631806 (0.7282)	-----	-5.61e-10 (1.0000)
SASC	-1.0262181 (0.1773)	-6.707165* (0.9283)	-2.19e-9 (1.0000)
SAC	0.0720973 (0.8565)	-2.3730717 (0.2462)	7e-10 (1.0000)
	R^2 = 0.271146 OBS. = 57	R^2 = 0.523738 OBS. = 28	R^2 = 1 OBS. = 10

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for Senate (-Southern Democrats) and among Southern Democrats.

TABLE F.2: LOGIT EQUATION 2 - SOUTHERN DEMOCRATS ($JOBS_N$)

Ind. Var.	*Senate Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	0.03635096* (0.8989)	-0.3751843 (0.4827)	11.9161309* (0.9987)
USMC BASE	0.74463879 (0.0978)	0.6780129 (0.3239)	5.42717228* (0.9995)
NSI	-0.004073* (0.7500)	-0.0624981 (0.1417)	0.23296298* (0.9991)
PARTY	0.31083448 (0.5318)		
TTC	1.10298725 (**0.0086**)	1.59460309 (0.0670)	28.3551479* (0.9987)
TTL PAC	0.0001169 (0.1930)	0.00021017 (0.4301)	0.00092397* (0.9999)
PS		0.10683028 (0.2303)	
FMR. USMC	0.92361023* (0.2313)	11.8115062* (0.9596)	-6.031306* (0.9994)
SASC	-0.5535483 (0.2045)	-6.1576778* (0.9278)	-2.2654038* (0.9999)
SAC	0.30702505 (0.2949)	0.15274704 (0.7616)	7.43605553* (0.9994)
	R^2 = 0.223747 OBS. = 84	R^2 =0.389009 OBS. = 42	R^2 = 1 OBS. = 13

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for Senate (-Southern Democrats) and among Southern Democrats.

TABLE F.3: LOGIT EQUATION 3 - SOUTHERN DEMOCRATS ($JOBS_I$)

Ind. Var.	*Senate Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	0.00037058 (0.7297)	-0.020412 (0.1029)	1.66e-13 (1.0000)
USMC BASE	0.7897207 (0.1623)	2.44732728 (0.1962)	-2.73e-10 (1.0000)
NSI	0.00685925 (0.6571)	-0.0722824 (0.1880)	-3.96e-12 (1.0000)
PARTY	0.44676169 (0.4821)		
TTC	1.31007783 (0.0500)	0.62530781 (0.6114)	19.2028948 (0.9983)
TTL PAC	0.0002163 (0.0894)	-0.0000896 (0.7971)	2.26e-14 (1.0000)
PS		-0.01460865 (0.8847)	
FMR. USMC	0.16444864 (0.8618)	-----	-1.08e-10 (1.0000)
CF & AD	4.55387705* (0.9453)	-2.2014894* (0.9881)	-3.52e-10 (1.0000)
DI & T	-9.6161365* (0.9281)	-2.7708729* (0.9832)	
PROJ	-4.4587484* (0.9464)	-4.5938689* (0.9762)	-----
RDNS	-9.3742728* (0.9319)	-2.9378426* (0.9842)	-----
DEF	0.64992183 (0.4821)	-2.2396757 (0.2854)	-1.78e-11 (1.0000)
	R^2 = 0.302728 OBS. = 57	R^2 = 0.489027 OBS. = 28	R^2 = 1 OBS. = 10

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for Senate (-Southern Democrats) and among Southern Democrats.

TABLE F.4: LOGIT EQUATION 3 - SOUTHERN DEMOCRATS ($JOBS_N$)

Ind. Var.	*Senate Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	-0.099541 (0.7443)	-0.4329701 (0.4339)	20.6684925* (0.9995)
USMC BASE	0.60504758 (0.1994)	0.35085363 (0.6363)	9.90141287* (0.9998)
NSI	0.0076977 (0.5845)	-0.0749987 (0.1358)	0.4418155* (0.9994)
PARTY	0.75266934 (0.1880)		
TTC	1.23438332 **(0.0072)**	1.76824772 (0.0736)	39.0530157* (0.9983)
TTL PAC	0.00016742 (0.0651)	0.00021826 (0.4265)	0.00222588* (0.9996)
PS		0.13041482 (0.2125)	
FMR. USMC	-0.98264604 (0.2337)	8.34694727* (0.9735)	-10.712545* (0.9997)
CF & AD	-0.0785767 (0.8736)	-2.7785255* (0.9806)	22.686081* (0.9995)
DI & T	0.37223502 (0.5650)	-4.9772033* (0.9653)	
PROJ	-0.0722852 (0.8999)	-4.5668869* (0.9626)	
RDNS	-0.2314794 (0.7324)	-0.3392205* (0.9976)	
DEF	1.02928244 **(0.0074)**	0.99474743 (0.1113)	13.15891* (0.9996)
	R^2 = 0.273553 OBS. = 84	R^2 = 0.439836 OBS. = 42	R^2 = 1 OBS. = 13

p values in parentheses

* unstable data

Multicollinearity between PS and NSI for Senate (-Southern Democrats) and among Southern Democrats.

APPENDIX G.
SENATE TILTROTOR TECHNOLOGY COALITION (TTC) MEMBERS

TABLE G.1: LOGIT EQUATION 2 - SENATE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	-0.0067648* (0.9998)	0.00791021* (0.9993)	0.01678097* (0.9998)
USMC BASE	-12.283469* (0.9995)	7.9271423* (0.9997)	-----
NSI	-0.094436* (0.9998)	-0.4392236* (0.9991)	1.34186129 (0.9984)
PARTY	-51.599495* (0.9990)		
TTL PAC	0.0062796* (0.9985)	0.00212273* (0.9995)	
FMR. USMC	36.3306859* (0.9992)	------	-0.5955591@ (1.0000)
SASC	-----	------	-----
SAC	36.6678709* (0.9987)	13.1883578* (0.9996)	0# 0
	R^2 = 1 OBS. = 14	R^2 = 1 OBS. = 7	R^2 = 1 OBS. = 7

p values in parentheses

* unstable data # zeroed data @ biased data

Multicollinearity between TTL PAC and $JOBS_I$ among Republcans

TABLE G.2: LOGIT EQUATION 2 - SENATE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	6.23101443* (0.9720)	-3.8916576* (0.9999)	0.35339997 (0.9995)
USMC BASE	5.07700273* (0.9823)	12.5887512* (0.9994)	-----
NSI	-0.0696361 (0.1949)	-0.445872* (0.9987)	0.66727935* (0.9779)
PARTY	-7.9318746* (0.9644)		
TTL PAC	0.0000403 (0.7962)	0.00190887* (0.9992)	-0.0000735 (0.6737)
FMR. USMC	12.201662* (0.9629)	-----	
SASC	-1.2968444 (0.4492)	-----	-7.3587473* (0.9863)
SAC	-0.3411989 (0.8046)	11.9218699* (0.9994)	-7.3036115* (0.9864)
	R^2 = 0.373912 OBS. = 19	R^2 = 1 OBS. = 8	R^2 = 485856 OBS. = 11

p values in parentheses

* unstable data

Multicollinearity between **FMR. USMC** and **TTL PAC** among Republicans

TABLE G.3: LOGIT EQUATION 3 - SENATE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	-0.0032283* (0.9999)	0.00791021* (0.9993)	3.79e-12* (1.0000)
USMC BASE	6.55116913* (0.9996)	7.9271423* (0.9997)	-----
NSI	-0.4083431* (0.9988)	-0.4392236* (0.9991)	3.3e-11* (1.0000)
PARTY	-24.8968* (0.9993)		
TTL PAC	0.00248842* (0.9991)	0.00212273* (0.9995)	
FMR. USMC	18.985839* (0.9994)	-----	19.2028948* (0.9991)
CF & AD	-----	-----	-----
DI & T	-----	-----	
PROJ	-----	-----	-----
RDNS	-----	-----	19.2028948* (0.9989)
DEF	15.9313217* (0.9989)	13.1883578* (0.9996)	4.38826734 (0.1087)
	R^2 = 1 OBS. = 14	R^2 = 1 OBS. = 7	R^2 = 1 OBS. = 7

p values in parentheses

* unstable data

Multicollinearity between **TTL PAC** and **$JOBS_I$**; **D & T** and **RDNS** among Republicans

TABLE G.4: LOGIT EQUATION 3 - 102ND SENATE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	-16.933248* (0.9996)	-3.8916576 (0.9999)	-0.0066805* (1.0000)
USMC BASE	18.0805432* (0.9996)	12.5887512 (0.9994)	-----
NSI	-0.4721348* (0.9996)	-0.445872 (0.9987)	0.02590193 (1.0000)
PARTY	-5.9923369* (0.9999)		
TTL PAC	0.00383168* (0.9983)	0.00190887 (0.9992)	0.000396629 (0.9987)
FMR. USMC	-7.2028051* (0.9998)	-----	
CF & AD	27.8018719@ (0.9990)	-----	27.8961726@ (0.9988)
DI & T	2.07e-19# 0	-----	-4.15e-18# 0
PROJ	-20.2222775@ (0.9992)	-----	-20.070768@ (0.9989)
RDNS	3.3e-16# 0	-----	8.76e-15# 0
DEF	19.1068685* (0.9995)	11.9218699 (0.9994)	5.18847212* (0.9997)
	R^2 = 1 OBS. = 19	R^2 = 1 OBS. = 8	R^2 = 1 OBS. = 11

p values in parentheses

* unstable data # zeroed data @ biased data

Multicollinearity between FMR. USMC and TTL PAC among Republicans.

APPENDIX H. SENATE NON-TTC MEMBERS

TABLE H.1: LOGIT EQUATION 2 - SENATE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	-0.0086614 (0.1418)	-0.016063 (0.1556)	-0.003514 (0.7465)
USMC BASE	1.18870283 (**0.0314**)	1.62193444 (0.3394)	6.40871774* (0.9462)
NSI	0.00241158 (0.8720)	-0.0354989 (0.2058)	0.04257919 (0.2706)
PARTY	0.25747699 (0.6675)		
TTL PAC	-0.0000625 (0.6585)	-0.000632 (0.3015)	0.00013973 (0.4941)
PS		0.02646856 (0.7374)	
FMR. USMC	-5.619509* (0.9282)	-8.6112877* (0.9590)	-5.1873315* (0.9694)
SASC	-1.1196231 (0.1388)	-8.519993* (0.9351)	-5.1836773* (0.9565)
SAC	-0.3789259 (0.4460)	-2.0358843 (0.2667)	0.74179692 (0.3272)
	R^2 = 0.228825 OBS. = 53	R^2 = 0.441364 OBS. = 31	R^2 = 0.344368 OBS. = 22

p values in parentheses

* unstable data

Multicollinearity between **PS** and **NSI** in Senate and among Republicans

TABLE H.2: LOGIT EQUATION 2 - SENATE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.11615834 (0.6776)	-0.3482235 (0.3903)	0.71306885 (0.1521)
USMC BASE	0.68448699 (0.0861)	0.58754855 (0.2897)	1.54426509 (0.0618)
NSI	0.00552653 (0.6050)	-0.0310992 (0.1976)	0.02754009 (0.2678)
PARTY	0.74523397 (0.0838)		
TTL PAC	0.00009722 (0.3749)	0.00010465 (0.6551)	0.00011883 (0.4508)
PS		0.1200425 (0.1271)	
FMR. USMC	-0.1057967 (0.8698)	0.2136137 (0.7562)	-5.6801459* (0.9449)
SASC	-0.2668718 (0.5282)	-0.5220077 (0.4279)	-0.050762 (0.9415)
SAC	0.38550075 (0.2008)	0.08051381 (0.8541)	1.10843713 (0.0638)
	R^2 = 0.109108 OBS. = 78	R^2 = 0.137345 OBS. = 47	R^2 = 0.257679 OBS. = 31

p values in parentheses

* unstable data

Multicollinearity between PS and NSI in Senate and among Republicans

TABLE H.3: LOGIT EQUATION 3 - SENATE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_I$	-0.011891 (0.0899)	-0.0167364 (0.1663)	0.00336752 (0.7557)
USMC BASE	1.57943011 (0.0546)	1.70315741 (0.3471)	11.4502404* (0.9554)
NSI	-0.0069031 (0.6677)	-0.0366439 (0.1910)	0.08576972 (0.0676)
PARTY	-0.2763151 (0.6860)		
TTL PAC	-0.0002473 (0.2096)	-0.0007198 (0.2402)	0.00058608 (0.2263)
PS		0.02713082 (0.7212)	
FMR. USMC	-8.2015557* (0.9567)	-8.7073649* (0.9957)	-13.27577* (0.9650)
CF & AD	4.14492274* (0.9627)	-3.3056925* (0.9952)	-12.970137@ (0.9658)
DI & T	-8.0564637* (0.9576)	-2.1419367* (0.9967)	-----
PROJ	-4.4495631* (0.9600)	-7.0424241* (0.9897)	8.25593246@ (0.9752)
RDNS	-11.599949* (0.9404)	-4.6274496* (0.9933)	-1.1691119# (0)
DEF	-1.1191918 (0.2450)	-2.0641489 (0.3011)	4.07177769 (0.1569)
	R^2 = 0.291732 OBS. = 53	R^2 = 0.415689 OBS. = 31	R^2 = 0.550235 OBS. = 22

p values in parentheses

* unstable data # zeroed data @ biased data

Multicollinearity between PS and NSI in Senate and among Republicans

TABLE H.4: LOGIT EQUATION 3 - SENATE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*Senate*	*Democrats*	*Republicans*
$JOBS_N$	0.08017334 (0.7848)	-0.5357367 (0.2388)	-0.2066886 (0.7682)
USMC BASE	0.66283521 (0.1147)	0.38287716 (0.5425)	12.0841005* (0.9635)
NSI	0.00891916 (0.4239)	-0.0243459 (0.3531)	0.06583002 (0.0537)
PARTY	0.86749367 (0.0546)		
TTL PAC	0.00013824 (0.1984)	-0.0000235 (0.9405)	0.00037035 (0.1963)
FMR. USMC	-0.1390747 (0.8319)	-5.4378089* (0.9579)	-15.653431* (0.9724)
CF & AD	-0.2756759 (0.6299)	11.514686* (0.9415)	-16.759901* (0.9564)
DI & T	-0.0919662 (0.8958)	-17415764* (0.9315)	-4.3168613* (0.9871)
PROJ	0.37117618 (0.5176)	-4.938384* (0.9688)	11.4877092 (0.9978)
RDNS	-0.0522899* (0.9449)	-15.97438* (0.9353)	0.7077779 (0.9978)
DEF	0.79866507 (**0.0246**)	0.43891586 (0.4249)	2.98596303 (0.0548)
	R^2 = 0.142001 OBS. = 78	R^2 = 0.299797 OBS. = 47	R^2 = 0.544187 OBS. = 31

p values in parentheses

* unstable data

APPENDIX I. SAC DEFENSE SUBCOMMITTEE

TABLE I.1: LOGIT EQUATION 1 - SENATE NON-TTC MEMBERS

Ind. Var.	*Def. Subcomm.*	*Democrats*	*Republicans*
$JOBS_I$	-0.1103679* (0.9992)	0.0592504* (0.9995)	0* 0
USMC BASE	37.5820311* (0.9981)	36.1848855* (0.9972)	-----
NSI	1.83450431* (0.9979)	1.78393351* (0.9973)	-1.3e-18* 0
PARTY	117.544754* (0.9979)		
TTL PAC	0.00487144* (0.9993)	-0.0434166* (0.9983)	0.00428303* (0.9977)
FMR. USMC	-0.5755391 (1.0000)	-0.6755645 (1.0000)	-----
	R^2 = 1 OBS. = 9	R^2 = 1 OBS. = 7	R^2 = 1 OBS. = 2
$JOBS_N$	22.228393* (0.9980)	-0.5161309* (1.000)	-2.3393736* (0.9977)
USMC BASE	36.8262434* (0.9976)	36.047758* (0.9972)	-----
NSI	1.822329747* (0.9977)	1.77186946* (0.9972)	-2.0809183* (0.9991)
PARTY	114.220829* (0.9971)		
TTL PAC	0.00447278* (0.9984)	-0.0424587* (0.9987)	0.00436008* (0.9980)
FMR. USMC	-1.1444465 (1.0000)	-0.6538084 (1.0000)	-----
	R^2 = 1 OBS. = 13	R^2 = 1 OBS. = 8	R^2 = 1 OBS. = 5

p values in parentheses

* unstable data

APPENDIX J. HOUSE BIVARIATE ANALYSES

TABLE J.1: 102nd HOUSE

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0.004598	435	----	0.1573
PR.DIR.JOBS	0.004595	435	-0.0373313	0.8351
P.PROJ.JOBS	0.004596	435	-0.0049263	0.8435
SUB.VNDR.	0.004678	435	----	0.0930
S.DIR.JOBS	0.081511	21	0.05035573	0.1558
S.PROJ.JOBS	0.11184	18	0.01694953	0.3686
TTL.DIR.JOBS	0.027392	22	-0.007187	0.4664
TTL.PRJ.JOBS	0.037616	19	-0.0011215	0.4369
TTL.JOBS	0.004205	333	-0.0013362	0.3236
USMC BASE	0.003332	435	----	0.1617
ADA	0.002631	387	0.00364863	0.2356
NSI	0.009269	384	-0.0057935	**0.0270**
PARTY	0.008015	435	----	0.0892
TTC	0.195239	435	----	**0.0000**
FS	0.000016	387	-0.0004254	0.9265
BOEING PAC	0.02643	435	0.00001438	**0.0003**
TEXTRON PAC	0.04903	435	-0.0006837	**0.0000**
TTL PAC	0.05319	435	-0.0004202	**0.0000**
FMR. USMC	0.02531	435	----	**0.0001**
HASC	0.043065	435	----	**0.0000**
HAC	0.00077	435	----	0.4955
PROC	0.020494	435	----	**0.0004**
R & D	0.010445	435	----	**0.0121**
SPWR	0.017264	435	----	**0.0013**
RDNS	0.020709	435	----	**0.0004**
DEF	0.006732	435	----	**0.0439**

TABLE J.2: 102nd HOUSE ARMED SERVICES COMMITTEE (HASC)

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0.007997	54	----	0.5200
PR.DIR.JOBS	0.007993	54	-0.0407585*	0.9380
P.PROJ.JOBS	0.007993	54	-0.0051627*	0.9380
SUB.VNDR.	0.109072	54	----	**0.0175**
S.DIR.JOBS	1	3	1.27360953*	0.9973
S.PROJ.JOBS	1	3	0.3640579*	0.9974
TTL.DIR.JOBS	0.126692	3	-0.0124569	0.5605
TTL.PRJ.JOBS	0.194466	3	-0.0022093	0.5585
TTL.JOBS	0.004524	44	-0.0009141*	0.7119
USMC BASE	0.000152	54	----	0.9293
ADA	0.053211	49	-0.0215626	0.1347
NSI	0.013332	49	0.0084764	0.4348
PARTY	0.094885	54	----	**0.0267**
TTC	0.246654	54	----	**0.0004**
PS	0.114625	49	0.04515711	**0.0293**
BOEING PAC	0.016454	54	0.00026112	0.3441
TEXTRON PAC	0.000243	54	0.00003446	0.9102
TTL PAC	0.006432	54	0.00009246	0.5559
FMR. USMC	0.041759	54	----	0.1416
PROC	0.008102	54	----	0.5173
R & D	0.012087	54	----	0.4290
SPWR	0.0112	54	----	0.4465
RDNS	0.036558	54	----	0.1690

* unstable data

TABLE J.3: 102nd HOUSE APPROPRIATIONS COMMITTE (HAC)

Ind. Var.	R^2	*Obs.*	*Effect*	*Prob>ChiSq*
PRI.VNDR.	0	59	----	0
PR.DIR.JOBS	-9e-18	59	0*	0
P.PROJ.JOBS	-9e-18	59	0*	0
SUB.VNDR.	0.006102	59	----	0.4810
S.DIR.JOBS	0.011397	45	-0.0677712*	0.4898
S.PROJ.JOBS	0.021647	44	-0.1831243*	0.9268
TTL.DIR.JOBS	0.018179	4	-0.0310049	0.7853
TTL.PRI.JOBS	0.151063	4	-0.2304948*	0.9794
TTL.JOBS	0.029123	44	-0.066026*	0.3722
USMC BASE	0.015217	59	----	0.2658
ADA	0.016934	58	0.009096129	0.2483
NSI	0.059182	58	-0.0148801	**0.0342**
PARTY	0.000016	59	----	0.9708
TTC	0.214379	59	----	**0.0000**
PS	0.010484	58	-0.0110801	0.3628
BOEING PAC	0.103489	59	-0.000758	**0.0162**
TEXTRON PAC	0.125831	59	-0.0010066	**0.0181**
TTL PAC	0.152749	59	-0.0006183	**0.0105**
FMR. USMC	0.046777	59	----	0.0511
DEF	0.044726	59	----	0.0630

* unstable data # zeroed data

APPENDIX K. HOUSE OF REPRESENTATIVES

TABLE K.1: LOGIT EQUATION 2 - HOUSE ($JOBS_1$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_1$	-0.00007494* (0.8536)	-0.0197407 (0.4987)	-0.0011594 (0.8742)
USMC BASE	-0.5787659 (0.2698)	-0.9680624 (0.1265)	3.70641077* (0.9139)
NSI	-0.0161357 **(0.0053)**	-0.0195401 **(0.0033)**	-0.0154837 (0.4031)
PARTY	-0.8840641 **(0.0002)**		
TTC	1.16395785 **(0.0000)**	1.0052931 **(0.0000)**	1.31442559 **(0.0000)**
TTL PAC	-0.0001278 (0.2573)	-0.0001588 (0.3264)	-0.0001877 (0.3581)
PS			0.0313882 (0.2463)
FMR. USMC	0.87748023 **(0.0370)**	4.79746181* (0.8538)	0.52445708 (0.3249)
HASC	0.42998103 (0.0821)	0.85350794 **(0.0203)**	-0.1616731 (0.7449)
HAC	0.04884087 (0.8098)	-0.0242657 (0.9265)	0.09872014 (0.7755)
	R^2 = 0.250718 OBS. = 294	R^2 = 0.267203 OBS. = 184	R^2 = 0.278872 OBS. = 110

p values in parentheses

* unstable data

PS collinear with NSI in House and among Republicans

TABLE K.2: LOGIT EQUATION 2 - HOUSE ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.33257581 **(0.0235)**	0.20985457 (0.2740)	0.4448807 (0.0656)
USMC BASE	-0.0902228 **(0.8493)**	-1.0533777 (0.1005)	4.43900517* (0.8959)
NSI	-0.0180515 **(0.0010)**	-0.0208897 **(0.0014)**	-0.0096735 (0.5162)
PARTY	-0.890972 **(0.0001)**		
TTC	1.2670764 **(0.0000)**	1.15443938 **(0.0000)**	1.39258343 **(0.0000)**
TTL PAC	-0.0001505 (0.1633)	-0.0001804 (0.2395)	-0.0001718 (0.3389)
PS			0.01253217 (0.5529)
FMR. USMC	1.02215352 **(0.0122)**	4.835218582* (0.8354)	0.72764875 (0.1347)
HASC	0.47361452 **(0.0451)**	0.88734363 **(0.0154)**	0.11135344 (0.7883)
HAC	0.05526921 (0.7602)	-0.1187617 (0.6160)	0.21523275 (0.4857)
	R^2 = 0.284688 OBS. = 384	R^2 = 0.296391 OBS. = 237	R^2 = 0.331583 OBS. = 147

p values in parentheses

* unstable data

PS collinear with NSI in House and among Republicans

TABLE K.3: LOGIT EQUATION 3 - HOUSE ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	-0.0010044* (0.8461)	-0.0207237 (0.4744)	-0.0015067 (0.8164)
USMC BASE	-0.5800726 (0.2879)	-0.7879144 (0.2470)	4.22113751* (0.9393)
NSI	-0.015536 (**0.0078**)	-0.0197468 (**0.0036**)	-0.0148028 (**0.4240**)
PARTY	-0.8741323 (**0.0002**)		
TTC	1.16816177 (**0.0000**)	0.99834973 (**0.0000**)	1.32242024 (**0.0000**)
TTL PAC	-0.0000857 (0.4681)	-0.0000193 (0.9155)	-0.0001387 (0.5171)
PS			0.03199508 (0.2526)
FMR. USMC	0.91620967 (**0.0292**)	5.39092351* (0.9015)	0.55289279 (0.3114)
PROC	0.56151425 (0.1456)	5.13735275* (0.8789)	-0.1830905 (0.8021)
R & D	0.30016329 (0.3845)	0.43627121 (0.3996)	0.00673323 (0.9917)
SPWR	0.24499734 (0.6564)	-0.1580149 (0.8902)	-0.2023453 (0.8173)
RDNS	0.34936669 (0.6288)	0.5710403 (0.6359)	4.07245284* (0.9605)
DEF	0.89379868 (0.1480)	5.21941874* (0.9254)	0.68367747 (0.3417)
	R^2 = 0.257699 OBS. =294	R^2 = 0.283411 OBS. = 184	R^2 = 0.286209 OBS. = 110

p values in parentheses

* unstable data

Ps collinear with NSI in House and among Republicans

TABLE K.4: LOGIT EQUATION 3 - HOUSE ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.31211637 **(0.0339)**	0.21650754 (0.2545)	0.39364524 (0.1107)
USMC BASE	-0.1534052 (0.7462)	-0.8662755 (0.2049)	4.21429097* (0.9053)
NSI	-0.0178533 **(0.0011)**	-0.0206972 **(0.0013)**	-0.0074017 (0.6165)
PARTY	-0.8850952 **(0.0001)**		
TTC	1.27359509 **(0.0000)**	1.14121091 **(0.0000)**	1.38485773 **(0.0000)**
TTL PAC	-0.0001355 (0.2354)	-0.000155 (0.3363)	-0.0001788 (0.3448)
PS			0.01078557 (0.6159)
FMR. USMC	1.03655077 **(0.0109)**	5.36049033* (0.8876)	0.80239254 (0.1138)
PROC	0.58449719 (0.1215)	4.98840945* (0.8797)	-0.2367993 (0.7319)
R & D	0.31880326 (0.3466)	0.44121524 (0.3876)	0.05344961 (0.9261)
SPWR	0.07728769 (0.8823)	0.03802068 (0.9755)	0.01555897 (0.9832)
RDNS	0.48228818 (0.4678)	0.47643693 (0.7141)	5.00171366* (0.9054)
DEF	0.40711868 (0.3343)	-0.0037819 (0.9947)	0.69881138 (0.3279)
	R^2 = 0.287821 OBS. = 384	R^2 = 0.297851 OBS. = 237	R^2 = 0.346609 OBS. = 147

p values in parentheses

* unstable data

Ps collinear with **NSI** in House and among Republicans

APPENDIX L. HOUSE ARMED SERVICES COMMITTEE

TABLE L.1: LOGIT EQUATION 3 - HASC ($JOBS_I$)

Ind. Var.	*HASC*	*Democrats*	*Republicans*
$JOBS_I$	0.08496314* (0.9994)	-16.546061* (0.9997)	-0.0274951* (1.0000)
USMC BASE	-61.605987* (0.9979)	-42.810418* (0.9981)	29.3908451* (0.9999)
NSI	-2.0033386* (0.9984)	-0.3433864* (0.9994)	9.6415657* (0.9999)
PARTY	-117.28007* (0.9983)		
TTC	103.420186* (0.9977)	4.38269758* (0.9997)	24.3975972* (0.9991)
TTL PAC	-0.0103683* (0.9988)	-0.0055004* (0.9998)	-0.0020186* (0.9999)
PS		0.05928949* (1.0000)	0.94569082* (0.9997)
FMR. USMC	75.0207078* (0.9987)	19.7750648* (0.9988)	-71.2659* (0.9999)
PROC	-34.305593* (0.9984)	-7.8956997* (0.9996)	-38.164211* (0.9999)
R & D	-9.6520962* (0.9993)	-18.301672* (0.9991)	-28.644575* (0.9999)
SPWR	-16.05538* (0.9993)	-7.1047327* (0.9998)	-36.500594* (0.9999)
RDNS	-14.209913* (0.9997)	18.2481996* (0.9992)	-112.58536* (0.9999)
	R^2 = 1 OBS. = 40	R^2 = 1 OBS. = 25	R^2 = 1 OBS. = 15

p values in parentheses

* unstable data

Multicollinearity between PS and NSI in the HASC

TABLE L.2: LOGIT EQUATION 3 - HASC ($JOBS_N$)

Ind. Var.	*HASC*	*Democrats*	*Republicans*
$JOBS_N$	76.0945844* (0.9985)	3.28463475* (1.0000)	-43.946574* (0.9992)
USMC BASE	-60.783536* (0.9977)	-42.864369* (0.9988)	-46.679989* (0.9991)
NSI	-1.9137688* (0.9975)	-0.4653961* (0.9999)	-5.6024018* (0.9993)
PARTY	240.342428* (0.9972)		
TTC	105.247486* (0.9976)	6.16910681* (0.9999)	23.940103* (0.9984)
TTL PAC	-0.0122469* (0.9979)	-0.0095058* (0.9999)	-0.0027038* (0.9996)
PS		0.87463854* (1.0000)	0.83251435* (0.9993)
FMR. USMC	79.3615651* (0.9981)	20.2097164* (0.9992)	84.4160184* (0.9989)
PROC	-34.21466* (0.9978)	-8.480459* (0.9997)	36.2042655* (0.9993)
R & D	-9.9835158* (0.9992)	-20.964785* (0.9997)	48.2146617* (0.9990)
SPWR	-13.665584* (0.9994)	3.34905631* (1.0000)	41.0001655* (0.9991)
RDNS	-14.459592* (0.9996)	12.4068474* (0.9999)	74.4212202* (0.9989)
	R^2 = 1 OBS. = 49	R^2 = 1 OBS. = 30	R^2 = 1 OBS. = 19

p values in parentheses

* unstable data

Multicollinearity between PS and NSI in the HASC

APPENDIX M. HOUSE APPROPRIATIONS COMMITTEE

TABLE M.1: LOGIT EQUATION 3 - HAC ($JOBS_I$)

Ind. Var.	*HAC*	*Democrats*	*Republicans*
$JOBS_I$	-0.050807 (0.6904)	-0.1897331* (0.9814)	0.4543353* (0.9965)
USMC BASE	-----	-----	-----
NSI	-0.0323661 (0.0563)	-0.0813518 (0.0634)	0.7559529* (0.9493)
PARTY	-1.2153166 (0.0738)		
TTC	1.1783139 (**0.0251**)	2.05169577 .	4.25479463 (0.3346)
TTL PAC	-0.0003703 (0.3711)	0.00185538 (0.2462)	-0.0073646 (0.4541)
FMR. USMC	5.0005816* (0.9269)	127.894828* (0.5566)	-0.6850139*
DEF	0.61058037 (0.4626)	11.6135301 (0.9412)	-1.1882423* (0.9886)
	R^2 = 0.390778 OBS. = 44	R^2 = 0.594931 OBS. = 27	R^2 = 0.787989 OBS. = 17

p values in parentheses

* unstable data

TABLE M.2: LOGIT EQUATION 3 - HAC ($JOBS_N$)

Ind. Var.	*HAC*	*Democrats*	*Republicans*
$JOBS_N$	0.40124494 (0.3970)	0.15968396 (0.8052)	1.56096785 (0.2314)
USMC BASE	5.55662187* (0.9673)	-----	5.05801265* (0.9702)
NSI	-0.044088 (**0.0158**)	-0.0569813 (**0.0356**)	-0.0035698 (0.9421)
PARTY	-1.2749417 (0.0623)		
TTC	1.35541526 (**0.0049**)	1.37220515 (**0.0298**)	1.17836942 (0.1922)
TTL PAC	-0.0005742 (0.0970)	-0.0003265 (0.4084)	-0.0025987 (0.1860)
PS			-0.1410859 (0.2527)
FMR. USMC	4.94445477* (0.9244)	5.6949059* (0.9527)	0.8807413* (0.9948)
DEF	-0.1286168 (0.8302)	0.18536135* (0.8282)	-1.0885961 (0.7090)
	R^2 = 0.436174 OBS. = 58	R^2 = 0.495507 OBS. = 36	R^2 = 0.505277 OBS. = 22

p values in parentheses

* unstable data

Ps collinear with **NSI** in HAC and among Democrats

APPENDIX N. HOUSE REGIONAL VARIATIONS

TABLE N.1: BORDER STATES (KY, MD, MO, OK, TN, WV)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.0014646 (0.7906)	0* 0
USMC BASE	-0.3407993 (0.5037)	---
NSI	-0.0128085 **(0.0306)**	-0.0844669 **(0.0223)**
PARTY	-0.7481269 **(0.0021)**	-2.8744764 **(0.0242)**
TTC	1.20000593 **(0.0000)**	0.91957023 (0.0887)
TTL PAC	-0.0001145 (0.3026)	-0.0010376 (0.0976)
FMR. USMC	0.80142001 (0.0604)	5.84747696* (0.9432)
	R^2 = 0.234568 OBS. = 250	R^2 = 0.506747 OBS. = 44
$JOBS_N$	0.32544614 **(0.0291)**	-4.1375736* (0.9455)
USMC BASE	0.03360541* (0.9429)	---
NSI	-0.0157702 **(0.0041)**	-0.0844669 **(0.0223)**
PARTY	-0.7885686 **(0.0005)**	-2.8744764 **(0.0242)**
TTC	1.296932351 **(0.0000)**	0.91957023 (0.0887)
TTL PAC	-0.0001575* (0.1332)	-0.0010376 (0.0976)
FMR. USMC	0.97056941 **(0.0185)**	6.34749549* (0.9626)
	R^2 = 0.269222 OBS. = 336	R^2 = 0.541315 OBS. = 48

p values in parentheses * unstable data • zeroed data

TABLE N.2: E.N. CENTRAL STATES (IL, IN, MI, OH, WI)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_1$	-0.0011578* (0.8217)	1.27551446* (0.9819)
USMC BASE	-0.3831919 (0.4374)	-----
NSI	-0.0174865 **(0.0027)**	0.04958717 (0.3244)
PARTY	-0.8969652 **(0.0001)**	1.00736981 (0.6223)
TTC	1.04305905 **(0.0000)**	7.34045642* (0.9313)
TTL PAC	-0.0001784 (0.1072)	-0.0005872 (0.0904)
FMR. USMC	0.92619885 **(0.0269)**	-0.9678085 (0.9968)
	R^2 = 0.226378 OBS. = 257	R^2 = 0.474092 OBS. = 37
$JOBS_2$	0.3266062 (0.0510)	0.38215986 (0.2515)
USMC BASE	-0.0236799 (0.9591)	-----
NSI	-0.0204466 **(0.0002)**	-0.0043593 (0.8672)
PARTY	-0.9144291 **(0.0000)**	-0.5862219 (0.5809)
TTC	1.20823365 **(0.0000)**	1.65336192 **(0.0054)**
TTL PAC	-0.0002076 (0.0529)	-0.0004027 (0.1445)
FMR. USMC	1.02595083 **(0.0133)**	4.9208324* (0.9267)
	R^2 = 0.276825 OBS = 321	R^2 = 0.265086 OBS. = 63

p values in parentheses

* unstable data

TABLE N.3: MID-ATLANTIC STATES (DE, NJ, NY, PA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00062935* (0.8536)	-4.2783052* (0.9469)
USMC BASE	-0.3756102 (0.4541)	-----
NSI	-0.0209461 **(0.0015)**	-0.023816 (0.1852)
PARTY	-1.2588518 **(0.0000)**	-0.1162837 (0.8551)
TTC	1.16742542 **(0.0000)**	0.952442246 **(0.0373)**
TTL PAC	-0.000322 **(0.0051)**	0.00029785 **(0.3052)**
FMR. USMC	1.02413387 **(0.0235)**	28.6797106* (0.9856)
	R^2 = 0.278375 OBS. = 240	R^2 = 0.32382 OBS. = 54
$JOBS_N$	0.31571677 (0.0570)	0.93087123 (0.1013)
USMC BASE	0.06245195 (0.8940)	-----
NSI	-0.0246691 **(0.0001)**	-0.139243 (0.4086)
PARTY	-1.3016132 **(0.0000)**	0.02699623 (0.9660)
TTC	1.25934498 **(0.0000)**	1.08193655 **(0.0126)**
TTL PAC	-0.0003311 **(0.0026)**	0.00021977 (0.3889)
FMR. USMC	1.17282576 **(0.0063)**	19.9409197* (0.7676)
	R^2 = 0.303241 OBS. = 316	R^2 = 0.321557 OBS. = 68

p values in parentheses

* unstable data

TABLE N.4: MOUNTAIN STATES (AZ, CO, ID, MT, NM, NV, UT, WY)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.028642 (0.3252)	0.19668371* (0.9997)
USMC BASE	-0.4820184 (0.3545)	---
NSI	-0.189524 **(0.0014)**	-0.6042443* (0.9997)
PARTY	-0.820311 **(0.0006)**	-61.334445* (0.9986)
TTC	1.13603705 **(0.0000)**	40.1506857* (0.9978)
TTL PAC	-0.0001933 (0.0739)	-0.0283533* (0.9979)
FMR. USMC	4.91919465* (0.9159)	37.7892079* (0.9995)
	R^2 = 0.255108 OBS. = 275	R^2 = 1 OBS. = 19
$JOBS_N$	0.25830143 (0.0800)	-16.784556 (0.9998)
USMC BASE	-0.0651761 (0.8898)	---
NSI	-0.020369 **(0.0002)**	-0.6275503 (0.9997)
PARTY	-0.8420557 **(0.0001)**	-72.104467 (0.9984)
TTC	1.25463549 **(0.0000)**	50.6324262 (0.9974)
TTL PAC	-0.0002236 **(0.0317)**	-0.0278341 (0.9976)
FMR. USMC	4.89004187* (0.7816)	47.9341034 (0.9994)
	R^2 = 0.285013 OBS. = 364	R^2 = 1 OBS. = 20

p values in parentheses

* unstable data

TABLE N.5: NORTHEAST STATES (CT, MA, ME, NH, RI, VT)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.0010429* (0.8414)	3.76022411* (0.9857)
USMC BASE	-0.3872251 (0.4405)	----
NSI	-0.0168201 **(0.0040)**	0.01622561 (0.9171)
PARTY	-0.8854921 **(0.0002)**	-6.1805474* (0.9766)
TTC	1.12989024 **(0.0000)**	13.7208453* (0.9742)
TTL PAC	-0.0001985 **(0.0588)**	0.00015358 (0.8919)
FMR. USMC	0.96346202 **(0.0211)**	----
	R^2 = 0.238595 OBS. = 284	R^2 = 0.450917 OBS. = 10
$JOBS_N$	0.38147815 **(0.0114)**	-0.2995448 (0.7723)
USMC BASE	-0.0084567* (0.9854)	----
NSI	-0.0192114 **(0.0004)**	-0.0512243 (0.6219)
PARTY	-0.9257302 **(0.0000)**	-6.7987578* (0.9553)
TTC	1.23139157 **(0.0000)**	10.7893967* (0.9661)
TTL PAC	-0.0002211 **(0.0278)**	-0.0004865 (0.6613)
FMR. USMC	1.0946491 **(0.0072)**	----
	R^2 = 0.275241 OBS. = 368	R^2 = 0.32679 OBS. = 16

p values in parentheses

* unstable data

TABLE N.6: PACIFIC STATES (AK, CA, HI, OR, WA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.0015426* (0.8020)	-0.1790678 (0.6268)
USMC BASE	-0.5523973 (0.3046)	-2.2552547 (0.9953)
NSI	-0.0167991 **(0.0047)**	-0.143105 (0.1561)
PARTY	-0.9474052 **(0.0001)**	-4.8866119 (0.2147)
TTC	1.07037684 **(0.0000)**	8.06246208* (0.9394)
TTL PAC	-0.0001611* (0.1480)	-0.000784 (0.1373)
FMR. USMC	0.9009548 **(0.0345)**	8.93829145* (0.9806)
	R^2 = 0.2307 OBS. = 266	R^2 = 0.645295 OBS. = 28
$JOBS_N$	0.31312744 (0.0527)	0.31069602 (0.5589)
USMC BASE	-0.5970298 (0.2740)	5.73840882* (0.9687)
NSI	-0.0195348 **(0.0005)**	-0.1133036 (0.0825)
PARTY	-0.9763105 **(0.0000)**	-4.5493122 (0.0917)
TTC	1.15500621 **(0.0000)**	7.30097263* (0.9191)
TTL PAC	-0.0001733* (0.0968)	-0.0007417 (0.0948)
FMR. USMC	0.96288359 **(0.0207)**	7.73840882* (0.9634)
	R^2 = 0.255202 OBS. = 332	R^2 = 0.637897 OBS. = 52

p values in parentheses

* unstable data

TABLE N.7: SOUTHERN STATES (AL, AR, FL, GA, LA, MS, NC, SC, TX, VA)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	0.00071105 (0.8386)	-0.3222708* (0.9078)
USMC BASE	2.9979192* (0.9210)	-0.5237642 (0.3406)
NSI	-0.0220759 **(0.0216)**	-0.0113693 (0.2455)
PARTY	-1.0301129 **(0.0080)**	-0.9371562 **(0.0051)**
TTC	1.34298625 **(0.0000)**	0.67270543 **(0.0235)**
TTL PAC	-0.000348 **(0.0169)**	0.00001246* (0.9440)
FMR. USMC	0.92279023 **(0.0337)**	7.13496479* (0.9855)
	R^2 = 0.300027 OBS. = 207	R^2 = 0.19708 OBS. = 87
$JOBS_N$	0.26895872 (0.1034)	0.86942141 (0.1216)
USMC BASE	4.09441868* (0.8550)	-0.5456202 (0.3247)
NSI	-0.0229097 **(0.0086)**	-0.0141196 (0.1365)
PARTY	-1..469758 **(0.0031)**	-0.9675306 **(0.0033)**
TTC	1.44631548 **(0.0000)**	0.7436545 **(0.0109)**
TTL PAC	-0.0003549 **(0.0089)**	-0.0000128 (0.9380)
FMR. USMC	1.09315474 **(0.0086)**	4.61255711* (0.8879)
	R^2 = 0.319979 OBS. = 286	R^2 = 0.236961 OBS. = 98

p values in parentheses

* unstable data

TABLE N.8: W.N. CENTRAL STATES (IA, KS, MN, ND, NE, SD)

Ind. Var.	*Excluded*	*Stand Alone*
$JOBS_I$	-0.0014498* (0.8313)	-0.4317127* (0.9987)
USMC BASE	-0.3772923 (0.4513)	----
NSI	-0.0167259 **(0.0037)**	-1.3501926* (0.9821)
PARTY	-0.8597928 **(0.0002)**	-54.811258* (0.9810)
TTC	1.11946697 **(0.0000)**	28.21389* (0.9867)
TTL PAC	-0.000188* (0.0708)	-0.0276412* (0.9833)
FMR. USMC	0.93906442 **(0.0255)**	-12.376613* (0.9970)
	R^2 = 0.232818 OBS. = 279	R^2 = 0.862677 OBS. = 15
$JOBS_N$	0.37355558 **(0.0125)**	-38.844929* (0.9908)
USMC BASE	-0.0065681* (0.9886)	----
NSI	-0.0194597 **(0.0003)**	-1.3483525* (0.9820)
PARTY	-0.9115236 **(0.0000)**	-54471232* (0.9803)
TTC	1.21426994 **(0.0000)**	55.8247917* (0.9783)
TTL PAC	-0.0002382 **(0.0195)**	-0.0267675* (0.9780)
FMR. USMC	1.08192471 **(0.0081)**	-39.844929* (0.9908)
	R^2 = 0.270577 OBS. = 365	R^2 = 0.889132 OBS. = 19

p values in parentheses

* unstable data

TABLE N.9: REGIONAL ANALYSIS SUMMARY ($JOBS_I$)

	Variables						
REGION	$JOBS_I$	BASE	NSI	PARTY	TTC	TTLPAC	FMR.
Border			-	-			
EN Cent							
Mid-Atl					+		
Mtn							
N. East							
Pacific							
South				-	+		
WN Cent							

BASE: USMC BASE **FMR.:** FMR USMC

TABLE N.10: REGIONAL ANALYSIS SUMMARY ($JOBS_N$)

	Variables						
REGION	$JOBS_N$	BASE	NSI	PARTY	TTC	TTLPAC	FMR.
Border			-	-			
EN Cent					+		
Mid-Atl					+		
Mtn							
N. East							
Pacific				-	+		
South							
WN Cent							

BASE: USMC BASE **FMR.:** FMR USMC

APPENDIX O. HOUSE GEO-POLITICAL VARIATION

TABLE O.1: LOGIT EQUATION 2
HOUSE SOUTHERN DEMOCRATS ($JOBS_I$)

Ind. Var.	*House: Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	-0.0000627 (0.9864)	0.00256323 (0.9458)	-0.3810959* (0.9399)
USMC BASE	2.80544829* (0.8904)	-----	-1.0280221 (0.1321)
NSI	-0.0191479 (0.0368)	-0.0383125 (0.0705)	-0.0128766 (0.2258)
PARTY	-1.0057779 (0.0069)		
TTC	1.27781601 (0.0000)	1.20636077 (0.0001)	0.69856612 (0.0630)
TTL PAC	-0.0002125 (0.1003)	-0.0003131 (0.1357)	0.00026589 (0.3430)
PS		0.0262163 (0.6111)	
FMR. USMC	0.91266497 (0.0353)	4.87468735* (0.8585)	7.06065307* (0.9944)
HASC	0.18013204 (0.5408)	0.74584759 (0.1257)	1.20168794 (0.0706)
HAC	0.07229126 (0.7589)	0.03480294 (0.9208)	-0.0105486 (0.9796)
	R^2 = 0.273007 OBS. = 239	R^2 = 0.319079 OBS. = 129	R^2 = 0.204207 OBS. = 55

p values in parentheses

* unstable data

PS collinear with NSI in House and among Southern Democrats

TABLE O.2: LOGIT EQUATION 2
HOUSE SOUTHERN DEMOCRATS ($JOBS_N$)

Ind. Var.	*House: Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	0.28682864 (0.0712)	0.2570471 (0.2445)	0.772421 (0.2395)
USMC BASE	4.03945789* (0.8358)	-----	-1.0155608 (0.1424)
NSI	-0.0201863 (0.0168)	-0.0481326 (0.0107)	-0.0132065 (0.1895)
PARTY	-1.0059439 (0.0033)		
TTC	1.3870767 (0.0000)	1.35332106 (0.0000)	0.77692196 (0.0347)
TTL PAC	-0.0002159 (0.0820)	-0.0003366 (0.0963)	0.00009205 (0.6574)
PS		0.05376452 (0.2001)	
FMR. USMC	1.06209919 (0.0102)	4.86876972* (0.8380)	4.00807062* (0.9359)
HASC	0.2693996 (0.3379)	0.76951799 (0.1144)	1.17280693 (0.0695)
HAC	0.0201923 (0.9226)	-0.1735424 (0.5715)	-0.0142749 (0.9719)
	R^2 = 0.302934 OBS. = 320	R^2 = 0.326907 OBS. = 173	R^2 = 0.226128 OBS. = 64

p values in parentheses

* unstable data

PS collinear with NSI in House and among Southern Democrats

TABLE O.3: LOGIT EQUATION 3
HOUSE SOUTHERN DEMOCRATS ($JOBS_I$)

Ind. Var.	*House: Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_I$	-0.0003132 (0.9417)	0.00168467 (0.9623)	-0.3857018* (0.9416)
USMC BASE	3.48492815* (0.9195)	-----	-0.9177466 (0.2020)
NSI	-0.0190194 (0.0396)	-0.0352144 (0.1035)	-0.0148751 (0.1828)
PARTY	-1.0135176 (0.0067)		
TTC	1.2767241 (0.0000)	1.16933842 (0.0002)	0.61485296 (0.1047)
TTL PAC	-0.0001831 (0.1756)	-0.0001968 (0.3998)	0.00060868 (0.1092)
PS		0.01943456 (0.7125)	
FMR. USMC	0.92251109 (0.0344)	6.16014995* (0.9384)	7.1961354* (0.9943)
PROC	0.24798947 (0.5703)	5.23078872* (0.9412)	13.4862243* (0.9766)
R & D	0.04827528 (0.9024)	0.00537037 (0.9940)	7.39766091* (0.9916)
SPWR	0.01420988 (0.9838)	4.81706016* (0.9727)	-7.253647* (0.9806)
RDNS	3.45229242* (0.9125)	-5.7083727* (0.9816)	7.39099565* (0.9803)
DEF	0.76967559 (0.2291)	5.34018295 (0.9542)	8.29047554 (0.9934)
	R^2 = 0.278408 OBS. = 239	R^2 = 0.327713 OBS. = 129	R^2 =0.277617 OBS. = 55

p values in parentheses

* unstable data PS collinear with NSI in House and among Southern Democrats

TABLE O.4: LOGIT EQUATION 3
HOUSE SOUTHERN DEMOCRATS ($JOBS_N$)

Ind. Var.	*House: Southern Dems. Excld.*	*Non-Southern Democrats*	*Southern Democrats*
$JOBS_N$	0.25314358 (0.1161)	0.22919003 (0.3016)	1.02530659 (0.1266)
USMC BASE	4.54296313* (0.8913)	-----	-0.756661 (0.2778)
NSI	-0.0198916 (0.0190)	-0.0443201 (0.0194)	-0.0137005 (0.1672)
PARTY	-1.0049019 (0.0034)		
TTC	1.37965176 **(0.0000)**	1.31767117 (0.0000)	0.72221675 (0.0480)
TTL PAC	-0.0002336 (0.0716)	-0.0003413 (0.1136)	0.00022787 (0.3226)
PS		0.04975036 (0.2471)	
FMR. USMC	1.09104693 (0.0090)	5.57736377* (0.8927)	5.59412122* (0.9800)
PROC	0.18148305 (0.6777)	4.54888585* (0.9107)	9.96546698* (0.9244)
R & D	0.04073509 (0.9160)	0.02785884 (0.9685)	5.76722207* (0.9632)
SPWR	0.04867826 (0.9405)	4.0868563* (0.9544)	-5.0855952* (0.9409)
RDNS	4.49175646 (0.8997)	-5.0543923* (0.9726)	5.20182889* (0.9395)
DEF	0.09460702 **(0.8388)**	-0.2808012 (0.6633)	5.66952278* (0.9710)
	R^2 = 0.307152 OBS. = 320	R^2 =0.325621 OBS. = 173	R^2 = 0.271256 OBS. = 64

p values in parentheses

* unstable data PS collinear with NSI in House and among Southern Democrats

APPENDIX P. HOUSE TTC MEMBERS

TABLE P.1: LOGIT EQUATION 2 - HOUSE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	-1.5729728* (0.9248)	-1.7119189* (0.9429)	0.00132284 (0.9987)
USMC BASE	7.6230664* (0.9967)	7.96305204* (0.9978)	-0.3298221 (0.9995)
NSI	-0.0040075 (0.7481)	-0.0153873 (0.3202)	0.88463583* (0.9551)
PARTY	-0.1557561 (0.7419)		
TTL PAC	0.0062796 (0.9985)	0.00023903 (0.3161)	-0.0003154 (0.4714)
PS			0.00692824 (0.9156)
FMR. USMC	8.05224488* (0.9953)	24.067488* (0.9852)	5.92544196* (0.9816)
HASC	8.16591658 (0.9935)	8.26779532* (0.9948)	6.34680394* (0.9848)
HAC	0.19450855 (0.6662)	0.52300659 (0.4270)	-0.1521336 (0.8367)
	R^2 = 0.164928 OBS. = 89	R^2 = 0.208738 OBS. = 57	R^2 = 0.283602 OBS. = 32

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE P.2: LOGIT EQUATION 2 - HOUSE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	1.03739791 (0.0526)	6.50799372* (0.9552)	0.37865458 (0.5500)
USMC BASE	5.09512957* (0.9688)	5.9694269* (0.9877)	5.73083484* (0.9828)
NSI	-0.0022682 (0.8499)	-0.0153873 (0.3202)	0.94952423* (0.9448)
PARTY	-0.2226443 (0.6191)		
TTL PAC	-0.00008 (0.6670)	0.00023903 (0.3161)	-0.0004766 (0.2865)
PS			0.00275236 (0.9657)
FMR. USMC	5.45645005* (0.9547)	21.8327999* (0.8758)	5.73033384* (0.9770)
HASC	5.55549909* (0.9390)	6.15402196* (0.9681)	5.82087152* (0.9731)
HAC	0.21006278 (0.6323)	0.52300659 (0.4270)	-0.1628951 (0.8204)
	R^2 = 0.192454 OBS. = 121	R^2 = 0.271645 OBS. = 72	R^2 = 0.321957 OBS. = 49

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE P.3: LOGIT EQUATION 3 - HOUSE TTC MEMBERS ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	-1.5232942* (0.9274)	-1.6686753* (0.9943)	0.6931959* (0.9849)
USMC BASE	7.75677215* (0.9970)	7.97084857* (0.9980)	-0.0040281* (1.0000)
NSI	-0.0024759 (0.8394)	-0.0158945 (0.3080)	0.98822517* (0.9572)
PARTY	-0.102646 (0.8245)		
TTL PAC	0.00010221 (0.6270)	0.00042249 (0.1479)	0.00012115 (0.8453)
PS			0.00458498 (0.9457)
FMR. USMC	7.90413465* (0.9947)	10.0422236* (0.9995)	6.24557554* (0.9870)
PROC	7.97223619* (0.9955)	8.10977846* (0.9958)	586.691848* (0.9849)
R & D	8.08757077* (0.9968)	7.98216843* (0.9978)	6.40577004 (0.9868)
SPWR	7.53224324* (0.9961	6.01569909* (0.9995)	6.29549625* (0.9870)
RDNS	0.76101606 (0.9997)	1.74810963 (0.9999)	-9.3266609* (0.9900)
DEF	8.21911471* (0.9949)	28.3406631 (0.9985)	7.02356896* (0.9869)
	R^2 = 0.191386 OBS. = 89	R^2 = 0.249117 OBS. = 57	R^2 = 0.312991 OBS. = 32

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE P.4: LOGIT EQUATION 3 - HOUSE TTC MEMBERS ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	1.06351464 (**0.0481**)	6.79209815* (0.9943)	0.44201488 (0.4869)
USMC BASE	5.18107096* (0.9701)	5.92931491* (0.9886)	5.76543896* (0.9829)
NSI	-0.0011382 (0.9227)	-0.0158945 (0.3080)	0.95475202* (0.9457)
PARTY	-0.1878635 (0.6681)		
TTL PAC	0.00001777 (0.9272)	0.00042249 (0.1479)	-0.0003043 (0.5578)
PS			0.00017309 (0.9978)
FMR. USMC	5.4692829* (0.9562)	26.7036593 (0.9921)	5.83605708* (0.9788)
PROC	5.265545546* (0.9591)	6.19104683* (0.9780)	0.45235672 (0.9995)
R & D	5.27615886* (0.9646)	5.56793075* (0.9830)	5.8601828* (0.9842)
SPWR	4.9613824* (0.9639)	0.77546461* (0.9992)	5.72764995* (0.9796)
RDNS	0.69375717 (0.9966)	4.96113276* (0.9952)	0.59153539 (0.9994)
DEF	5.74541051* (0.9645)	9036148032* (0.9972)	6.01519031* (0.9888)
	R^2 = 0.210821 OBS. = 121	R^2 = 0.308813 OBS. = 72	R^2 = 0.328551 OBS. = 49

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

APPENDIX Q. HOUSE NON-TTC MEMBERS

TABLE Q.1: LOGIT EQUATION 2 - HOUSE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	0.01040472 (0.5583)	-0.0103862 (0.7720)	0.0039498 (0.8821)
USMC BASE	-4.6136471* (0.8281)	-5.8922335* (0.9154)	-----
NSI	-0.0214873 **(0.0018)**	-0.0215872 **(0.0046)**	-0.0262711 (0.2453)
PARTY	-1.1513175 **(0.0001)**		
TTL PAC	-0.0001551 (0.2541)	-0.0003544 (0.0792)	-0.0001954 (0.4934)
PS			0.03152551 (0.3252)
FMR. USMC	0.7786712 (0.0860)	5.31589019* (0.9089)	0.36321326 (0.5805)
HASC	0.32347985 (0.2600)	0.87744474 **(0.0444)**	-0.3977644 (0.5980)
HAC	-0.0009467 (0.9968)	-0.1282165 (0.6746)	0.11246517 (0.7715)
	R^2 = 0.12434 OBS. = 205	R^2 = 0.192326 OBS. = 127	R^2 = 0.034019 OBS. = 78

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE Q.2: LOGIT EQUATION 2 - HOUSE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.23222982 (0.1602)	0.09446455 (0.6640)	0.40638852 (0.1387)
USMC BASE	-0.603846 (0.3681)	-5.9496684* (0.9147)	4.12033747* (0.8915)
NSI	-0.0226316 **(0.0004)**	-0.0224344 **(0.0024)**	-0.0175303 (0.3141)
PARTY	-1.1014497 **(0.0000)**		
TTL PAC	-0.0001641 (0.2023)	-0.0003526 (0.0647)	-0.0001122 (0.6452)
PS			0.00536316 (0.8216)
FMR. USMC	0.96796055 **(0.0220)**	5.34469115* (0.8949)	0.60856592 (0.2548)
HASC	0.33039195 (0.2108)	0.89603763 **(0.0369)**	-0.0120727 (0.9827)
HAC	0.03571913 (0.8602)	-0.2372836 (0.3875)	0.21507767 (0.5267)
	R^2 = 0.116912 OBS. = 263	R^2 = 0.194474 OBS. = 165	R^2 = 0.06945 OBS. = 98

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE Q.3: LOGIT EQUATION 3 - HOUSE NON-TTC MEMBERS ($JOBS_I$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_I$	0.00734516 (0.6895)	-0.0099753 (0.7790)	0.00504176 (0.8558)
USMC BASE	-8.3562828* (0.8376)	-10.3148* (0.9245)	-----
NSI	-0.0210034 **(0.0025)**	-0.0205889 **(0.0074)**	-0.0268844 (0.2381)
PARTY	-1.140593 **(0.0001)**		
TTL PAC	-0.0001404 (0.3238)	-0.0002572 (0.2492)	-0.0001568 (0.5803)
PS			0.03313273 (0.3072)
FMR. USMC	0.80510277 (0.0771)	6.02039765* (0.9380)	0.3177036 (0.6303)
PROC	0.42110514 (0.3116)	5.20453343* (0.9196)	-0.2027117 (0.8041)
R & D	0.12048846 (0.7725)	0.08569957 (0.8876)	-0.228386 (0.8030)
SPWR	-0.2661609 (0.7622)	2.6174455* (0.9983)	-4.357574* (0.9752)
RDNS	-11.599949* (0.8706)	2.36039702* (0.9985)	-----
DEF	0.76322277 (0.2438)	5.4504222* (0.9679)	0.53150987 (0.4852)
	R^2 = 0.135435 OBS. = 205	R^2 = 0.205061 OBS. = 127	R^2 = 0.046048 OBS. = 78

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

TABLE Q.4: LOGIT EQUATION 3 - HOUSE NON-TTC MEMBERS ($JOBS_N$)

Ind. Var.	*House*	*Democrats*	*Republicans*
$JOBS_N$	0.19891417 (0.2354)	0.10292123 (0.6320)	0.31713129 (0.2684)
USMC BASE	-0.7484543 (0.2977)	-10.339079* (0.9213)	4.84831081* (0.9529)
NSI	-0.0228434 **(0.0004)**	-0.0211377 **(0.0036)**	-0.0156475 (0.3650)
PARTY	-1.1164631 **(0.0000)**		
TTL PAC	-0.0001505 (0.2663)	-0.0000367 (0.0749)	-0.0002031 (0.4543)
PS			0.00450803 (0.8495)
FMR. USMC	0.980687 **(0.0207)**	5.98830021* (0.9286)	0.66270368 (0.2308)
PROC	0.45557827 (0.2542)	5.13360096* (0.9198)	-0.3630663 (0.6517)
R & D	0.15450063 (0.6851)	0.08299827 (0.8909)	-0.3016263 (0.7165)
SPWR	-0.4989514 (0.5169)	2.71867065* (0.9983)	-4.892314* (0.9525)
RDNS	0.94511158 (0.2984)	2.26952051* (0.9986)	5.69375675* (0.9447)
DEF	0.43207747 (0.3542)	-0.4491841 (0.5373)	0.5049395 (0.5070)
	R^2 = 0.124199 OBS. = 263	R^2 = 0.196486 OBS. = 165	R^2 = 0.09737 OBS. = 98

p values in parentheses

* unstable data

PS collinear with NSI in House and among Democrats

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