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PREVIEW

**Order Number 9013601**

**The sectoral composition and spatial distribution of Department  
of Defense services expenditures, 1979, 1982, and 1987**

**Crump, Jeffrey Randell, Ph.D.**

**The University of Nebraska - Lincoln, 1989**

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PREVIEW

THE SECTORAL COMPOSITION AND SPATIAL DISTRIBUTION  
OF DEPARTMENT OF DEFENSE SERVICES EXPENDITURES  
1979, 1982, AND 1987

by

Jeffrey R. Crump

A DISSERTATION

Presented to the Faculty of  
The Graduate College in the University of Nebraska  
In Partial Fulfillment of Requirements  
For the Degree of Doctor of Philosophy  
Major: Geography

Under the Supervision of Professor Robert H. Stoddard

Lincoln, Nebraska

August, 1989

THE SECTORAL COMPOSITION AND SPATIAL DISTRIBUTION  
OF DEPARTMENT OF DEFENSE SERVICES EXPENDITURES  
1979, 1982, AND 1987

Jeffrey Randell Crump, Ph.D.

University of Nebraska, 1989

Advisor: Robert H. Stoddard

The purpose of this dissertation is to describe and analyze the sectoral and spatial distribution of Department of Defense (DOD) procurement of services and to find the relationship between DOD services expenditures and change in services employment, population, and income.

It was discovered that defense procurement of services has, over the 1979-1987 period, increased faster than the overall defense budget. The findings also indicate that the sectoral composition of defense services procurement is concentrated in two categories: producer and equipment services.

When the spatial distribution of defense producer services allocations was examined it was found that several eastern states, notably Virginia, Connecticut, and Massachusetts, receive a high proportion of these

expenditures. States specializing in military-related manufacturing, such as California and Washington, also rank highly in receipts of DOD producer services expenditures.

DOD equipment services procurement is allocated mainly to southern and western states, a distribution that indicates that these expenditures may be associated with both military manufacturing and base operations.

The third largest category of DOD services procurement are the distributive services. Many of the states receiving high levels of distributive services procurement are in the South, implying that these expenditures may be linked to the activities at military bases.

The spatial distribution of DOD producer services expenditures was relatively stable over the study period. And, while the spatial pattern of equipment and distributive services was less stable, overall, the geographic distribution of DOD services procurement exhibited a high degree of spatial continuity, supporting the incremental model of federal budget allocations.

The relationship between percentage change in services procurement and percentage change in services employment, income, and population was described through regression analysis. However, in the statistical models used here, the relationship between services procurement and services employment, population, and income was found to be very

weak.

Overall, the results indicate that DOD services procurement is concentrated in those service sectors most critical to regional development. However, little statistical evidence was found to support the argument that these outlays are influencing state-level patterns of employment, population, and income growth.

PREVIEW



**TITLE**

THE SECTORAL COMPOSITION AND SPATIAL DISTRIBUTION OF DEPARTMENT

OF DEFENSE SERVICE EXPENDITURES 1979, 1982, AND 1987

**BY**

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## ACKNOWLEDGEMENTS

I want to express my appreciation for the support of my committee members throughout this project. My advisor, Dr. Robert H. Stoddard spent many hours with this dissertation and contributed greatly to the final product. His diligence and most of all, his honesty, are deeply appreciated. I also wish to thank Dr. J. Clark Archer who graciously allowed me to occupy his time (and office space) with my many questions. Clark's patience and insights were irreplaceable.

Keeping one's sense of humor when writing a dissertation is not always easy. However, my office mate and fellow graduate student, Joe Schumacher, never let a day go by without providing, intentionally or not, some moment of laughter. I appreciate his silent smirks and silly puns and will miss them. Finally, without the understanding, patience, and support of my wife and companion, Fiona Davidson, this dissertation would never have been completed. Thanks dear!

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PREVIEW

INTRODUCTION  
DEFENSE EXPENDITURES AND SERVICES: THE IMPLICATIONS FOR  
REGIONAL DEVELOPMENT

Through its funding of research and development (R&D) and its procurement of technologically sophisticated weapons systems, the Department of Defense (DOD) has played, and continues to play, an important role in the development of regional economies in the United States. In particular, the development of high-tech industry is closely linked to defense expenditures. The thriving, densely packed R&D and high-tech industrial complexes of Silicon Valley (California) and Route 128 (Massachusetts) are just the most recent, and best known, testimonials to the effectiveness of defense spending in promoting the growth of high-tech industry (see Scott 1986; Dorfman 1983; Saxenian 1985). As Saxenian describes it, the historical development of high-tech industry is closely related to the expenditure patterns of the DOD,

The origins of these seedbeds of technology-based industry lie in World War II, in the spending priorities of the Cold War, and in the development of close links between federal funding sources,...and local industry (Saxenian 1985, 99).

The importance of defense expenditures in influencing the patterns and direction of regional development suggests that, in lieu of any explicit regional development policy by the Federal government, defense outlays function implicitly as the nation's industrial and regional policy.

Such a policy is deserving of careful consideration when issues of regional development are discussed.

Services also contribute to regional development. The local availability of specialized services, such as computer programing, accounting, advertising, market research, and financial services, helps to nurture the development of a viable manufacturing sector. These producer services are particularly important in the evolution of high-tech firms since these innovative operations need to have access to such specialized services. It is their importance in building and maintaining the competitiveness of the manufacturing sector that make producer services so important in regional development.

#### Rationale

The rationale for this dissertation rests on the idea that both services and defense expenditures are important components of regional development in the United States. Since services and defense outlays do play critical roles in the development process, this dissertation, in order to contribute to the literature on regional development, investigates the linkages between defense spending for services and the role of military expenditures in regional

development.

Although the linkages between defense spending and the service sector have not been widely studied, the impact of defense expenditures on services, particularly producer services, may be substantial. The connection between producer services (in this case computer programing) and defense spending is featured in Browne's study of the high-tech sector and services as she states,

As a major purchaser of computer programing and other services, the Department of Defense has helped foster the growth of the computer service industry...(Browne 1983, 9).

At the outset, it is important to recognize that the regional development implications of defense outlays for services depends, to a large degree, on the type of services that are purchased. For example, the services that are associated with a military base are likely to be those that provide for consumer final demands such as personal services or those that are necessary for routine base operations such as housekeeping or guard services. In such cases, the defense contribution to regional development may be minimal in that defense procurement is not contributing directly to the growth of those services which are linked to the manufacturing sector or that contribute to a region's export base.

On the other hand, if defense procurement of services

is predominantly for professional or business services of the type that contribute to the competitiveness of the local manufacturing sector, while being part of the export sector, then it could be inferred that these DOD expenditures are playing an important role in regional development.

#### Statement of The Problem

Before the possible relationship between defense expenditures, services, and regional development can be assessed, the sectoral composition and spatial pattern of defense procurement of services needs to be established. With this in mind, the starting point and primary goal of this dissertation was to find the product mix (sectoral composition) of Department of Defense procurement of services. Here the pertinent question was: What is the geographic and sectoral composition, by state, of DOD expenditures for services? Since not all services play an equally important part in regional development, this question needed to be answered before the regional development implications of defense services procurement could be clarified.

To further examine the relationship between defense spending and services, several additional questions were