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CBO

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OCTOBER 1997

The Costs and
Benefits of Retail
Activities at
Military Bases



**THE COSTS AND BENEFITS OF RETAIL
ACTIVITIES AT MILITARY BASES**

The Congress of the United States
Congressional Budget Office

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NOTES

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Preface

The Department of Defense (DoD) is seeking to reduce its infrastructure of bases and support activities in order to free up funds to replace aging weapon systems. One aspect of DoD's infrastructure that may merit review is its network of on-base grocery stores, department stores, and other shops that sell goods and services at below-market prices to active-duty, reserve, and retired military personnel. Despite the decline in the size of the military since the end of the Cold War, DoD remains one of the largest retailers in the United States. Its stores, with annual sales of more than \$14 billion, employ 96,000 civilians—one for every 15 active-duty service members. What explains the size and scope of DoD's retail activities in the United States? Are government-run stores necessary to provide access to goods at military bases or to preserve military morale and cohesion? Are they more cost-effective than cash allowances as a way to attract and retain a high-quality force?

This Congressional Budget Office (CBO) study examines the social and budgetary costs and benefits of DoD's retail activities and various alternatives for their future. It was prepared in response to a joint request from Congressman John Kasich, Chairman of the House Committee on the Budget, and Congressman William Zeliff Jr., former Chairman of the Subcommittee on National Security, Foreign Affairs, and Criminal Justice of the House Committee on Government Reform and Oversight. In keeping with CBO's mandate to provide objective, impartial analysis, the study makes no recommendations.

Deborah Clay-Mendez of CBO's National Security Division wrote the study under the general supervision of Neil M. Singer and Cindy Williams. Earlier drafts benefited from reviews by Greg Hildebrandt of the Naval Post-Graduate School and John Donahue of the John F. Kennedy School of Government. The author gratefully acknowledges the research assistance provided by Shaun Black, Jofi Joseph, and Doug Taylor of CBO. She also thanks the numerous DoD and industry officials who responded, frequently at short notice, to questions and requests for data.

Christian Spoor edited the study. Cindy Cleveland produced drafts of the manuscript. Kathryn Quattrone, with assistance from Jill Sands, prepared the study for publication.

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Director

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Summary

The Department of Defense (DoD) provides a wide array of retail stores and consumer services at military bases for the benefit of current and retired military personnel and their dependents. DoD's retail operations have annual sales of \$14 billion and employ some 96,000 civilian workers—one for every 15 active-duty personnel. Those operations include commissaries (stores similar to civilian supermarkets), which have annual sales of about \$5 billion, and military exchanges, which have sales of about \$9 billion. The exchanges operate retail stores similar to department stores and also furnish a host of other shops and services, including on-base gas stations, furniture stores, florist shops, optical shops, fast-food outlets, pet-grooming salons, and liquor stores. Based on annual sales, DoD operates the 10th largest supermarket chain and the 12th largest general retail chain in the nation.

Those retail enterprises have many supporters. For U.S. service members stationed overseas, commissaries and exchanges are sometimes the only affordable and accessible source of familiar products. For service members in the United States, DoD's policy of selling goods at below-market prices makes its stores an important noncash benefit. Military retirees generally view access to DoD stores as an entitlement earned through their years of service. Many military leaders see on-base commissaries and exchanges as integral parts of the military way of life and argue that they foster a sense of military community. Other supporters include store employees and the commercial vendors, brokers, and distributors that sustain the stores.

Despite the benefits that commissaries and exchanges provide, analysts concerned with reducing the size of DoD's infrastructure might question the rationale for the department's current retail system. That system—a large network of stores designed to serve families rather than to meet the needs of single troops—emerged during the early years of the Cold War. At that time, DoD's policy was that its retail activities were necessary to ensure that service members living at military bases had access to adequate, affordable shopping.

Today, the department no longer argues that it has to provide stores at military bases to make up for a lack of commercial alternatives. At least within the United States, DoD's role goes far beyond what is required to ensure convenient and affordable shopping for on-base communities. Commissaries and exchanges use below-market prices to attract active-duty personnel, retirees, and reservists who live off-base and might more conveniently shop elsewhere. Instead, DoD justifies its stores by arguing that the low prices they offer are a cost-effective alternative to providing additional cash compensation to service members.

This Congressional Budget Office (CBO) study finds that DoD's current justification is untenable: from a social perspective, government-run stores with below-market prices are not a cost-effective alternative to cash compensation. (If they were, it would suggest that society would be better off if the government provided stores for all of its employees, or even all of its citizens.) Instead, CBO finds that the military's role in retail activities has grown and persisted in part because

many of the costs of those activities—including the cost of forgone taxes and return on capital—fall outside the federal budget. When DoD uses cash compensation to attract and retain a high-quality military force, the full cost of that policy appears in its budget. When the department uses retail stores with below-market prices, much of the cost falls outside its budget.

If DoD faced the full cost of its role in retail activities, it might well reassess and reduce that role. Designing policies to make DoD face that cost is not difficult. But such policies would entail difficult political decisions. Any meaningful debate over DoD's future retail activities may have to balance the inefficiency of subsidized, government-run stores as a way to attract and retain a high-quality force against the disrupted expectations and transition costs associated with changing that system.

An Overview of Commissaries and Exchanges

More than 300 commissaries, which are run by the Defense Commissary Agency (DeCA), operate at DoD bases throughout the world. Commissaries are like civilian supermarkets in many ways, although they differ in how they price merchandise and pay operating costs. Commissaries sell goods at a uniform 5 percent above the wholesale cost. DeCA relies on that 5 percent markup, or surcharge, to provide funds for capital investment. But federal appropriations pay for most of the stores' operating costs—including the salaries of DeCA's 18,000 employees, who are members of the civil service. Those differences from supermarkets ensure that commissaries offer below-market prices, making them a valuable benefit for both active-duty and retired military personnel. In 1995, commissaries sold over \$5 billion in groceries (valued at the wholesale cost), collected almost \$300 million in surcharges, and spent about \$1 billion in appropriated funds.

Unlike commissaries, military exchanges are not part of a federal agency. Instead, DoD's three separate exchange systems—the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corps exchanges—operate as nonappropriated-fund (NAF) activities. NAF status means that the revenue

exchanges receive from patrons is not part of the federal budget. It also means that exchanges are exempt from many of the laws governing federal personnel and procurement practices that limit the flexibility of commissary managers. (The exchanges' 78,000 employees are federal workers but are not members of the civil service.)

Although exchanges have nearly twice the annual sales of commissaries, they receive less public attention. The Congress appropriates almost \$1 billion for commissaries each year, which ensures a continuing debate over the costs and benefits of those stores. Exchanges, by contrast, do not receive an appropriation specifically earmarked for their use. Instead, they actually appear to produce earnings for DoD. The average markup on items at exchanges (about 20 percent) generates enough sales receipts to cover the exchange systems' operating costs and still produce some NAF earnings. Those NAF earnings would disappear, however, if exchanges were required to reimburse DoD for the support services it provides with appropriated funds (such as exterior maintenance of exchange buildings and transportation of exchange goods overseas).

Even though the exchanges' ability to generate NAF earnings depends on the appropriated support that DoD provides, DoD can spend those earnings without a Congressional appropriation or authorization and without creating a federal budgetary outlay. Between 1980 and 1995, the three exchange systems produced \$7 billion in NAF earnings for DoD. Roughly one-third of that was spent to finance new investment in exchanges; the rest went to support DoD's morale, welfare, and recreation (MWR) programs, such as libraries, fitness centers, golf courses, clubs, and hotels. Members of Congress have criticized some of the purchases DoD has made with NAF earnings (including a hotel at Walt Disney World and the construction of a third golf course at Andrews Air Force Base near Washington, D.C.). The department has responded by arguing that nonappropriated funds are service members' dollars rather than taxpayers' dollars.

Differences in the legal status, budgetary treatment, and pricing policies of commissaries and exchanges reflect their historical evolution. Although the modern commissary system did not develop until after World War II, it has roots in an earlier system in which commissary officers were responsible for issuing rations to

troops and for managing cash sales of additional food items. Appropriated funds paid for operating the system and buying the goods that would be issued as rations; receipts from patrons paid for buying the goods that would be sold for cash. By contrast, the exchange system and many MWR programs had their roots in soldiers' canteens and other cooperative arrangements among service members. Although commanders provided in-kind support (such as access to buildings), the federal status of those NAF activities was only established over time through a series of court decisions.

Today, despite differences in their legal and budgetary status, commissaries and exchanges share many characteristics. They both offer below-market prices that attract patrons from off-base, and they serve similar populations (although reservists, who have unlimited access to exchanges, are limited to 12 commissary visits a year). DoD also offers similar justifications for the two systems. It justifies overseas stores—which account for 16 percent of commissary sales and 25 percent of exchange sales—in part on the grounds that they may be the only affordable source of U.S. goods. It

Summary Table 1.
Subsidy Costs of DoD's Retail Activities in the United States, 1995 (In millions of dollars)

	Commissaries	Exchanges	Total
Business Income (Sales receipts minus the wholesale cost of goods sold)	260 ^a	1,760 ^b	2,020
Operating Costs			
Costs paid by DoD			
Paid from appropriations	670	160	830
Paid from surcharges or nonappropriated funds	<u>270</u>	<u>1,540</u>	<u>1,810</u>
Subtotal	940	1,700	2,640
Costs not paid by DoD			
Forgone return on capital	160	440 ^c	600
Forgone sales taxes	230	370	600
Forgone excise taxes	<u>100</u>	<u>100</u>	<u>200</u>
Subtotal	490	910	1,400
Total Costs	1,430	2,610	4,040
Subsidy (Total costs minus business income)	1,170	850	2,020
Subsidy Provided by DoD (Costs paid by DoD minus business income)	680	-60 ^d	620

SOURCE: Congressional Budget Office based on data from the Department of Defense (DoD).

NOTE: Business income and operating costs exclude the wholesale cost of goods sold. Overhead costs and income from financial investments were allocated between DoD's U.S. and overseas activities based on sales.

- a. Includes payments to DoD from vendors for handling coupons and other reimbursements.
- b. Includes concession fees and income from financial investments.
- c. Includes \$90 million in forgone monopoly rents.
- d. This number is negative because the estimated appropriated-fund support that DoD furnished to U.S. exchanges in 1995 (\$160 million) was less than their reported nonappropriated-fund earnings (\$220 million).

justifies stores in the United States on the grounds that their below-market prices are a cost-effective alternative to cash compensation.

Subsidies for DoD's Retail Activities

DoD's argument for the cost-effectiveness of its retail activities is straightforward. Commissaries receive an annual appropriation of about \$1 billion. Each year they sell military personnel about \$5 billion in goods, which have a commercial retail value of over \$7 billion (according to price surveys commissioned by DeCA). Thus, \$1 billion in commissary appropriations yields \$2 billion in benefits. The department's case for exchanges is even simpler: they offer savings to service members and at the same time generate revenue to support the military's MWR programs.

That assessment, however, overlooks costs that fall outside DoD's budget. In addition to appropriated-fund support, DoD's retail activities receive a subsidy from society in the form of exemption from state and local taxes, a monopoly over on-base retail sales, and interest-free use of federal capital (from society's perspective, it is just as costly to invest federal capital in a commercial activity as it is to invest private capital). Conceptually, the total subsidy is the difference between what patrons pay for goods and services in DoD stores and what it costs society to provide those goods and services.

The Congressional Budget Office estimates that in 1995, the total subsidy cost of DoD's retail operations in the United States was approximately \$2 billion (see Summary Table 1 on page xiii). Forgone state and local taxes and the forgone return on capital accounted for most of that subsidy. Those costs are not evident to DoD, however. From the department's perspective, the subsidy cost of its U.S. retail activities was only about \$600 million in 1995. U.S. exchanges generated resources for DoD to spend, although from a societal perspective they required a subsidy of more than \$800 million.

Subsidies that are not paid by DoD help explain how the exchanges can sell goods at below-market

prices and still generate earnings that, as a percentage of sales, are similar to those of private retailers. CBO found that most exchange earnings come from a few activities that benefit heavily from the exchanges' monopoly over retail activities at military bases, access to interest-free capital, or immunity from state and local taxation. Such activities include pay-telephone concessions, fast food, alcohol and tobacco sales, and interest on credit card balances. Sales of general merchandise—a retail activity in which the exchanges face competition from off-base stores—did not generate any earnings in 1995, although they accounted for 73 percent of sales. One problem with DoD's retail role is that some of the activities it finds most profitable (such as providing low-cost tobacco, alcohol, and credit) are those that military leaders might otherwise not want to promote.

The Effectiveness of U.S. Retail Activities as a Form of Compensation

DoD's retail activities in the United States pass much of their \$2 billion subsidy on to patrons in the form of below-market prices. That makes DoD stores one of the most important noncash benefits for service members and retirees. However, the actual value of those benefits to U.S. patrons will be less than the amount of the subsidy to the extent that the government is unable to manage resources as efficiently as private retailers, who are driven by competition. The benefits will also be less than the subsidy because subsidized prices distort service members' decisions about consumption. If it could be accurately determined, the difference between the subsidy and the value of benefits to patrons would measure the economic inefficiency (or deadweight loss) that subsidized DoD stores cause.

From a societal perspective, those U.S. stores would be a cost-effective alternative to cash compensation if the deadweight loss from using them to attract and retain a high-quality military force was less than the deadweight loss from relying on the tax system to raise revenue for paying additional cash compensation. Thus, the cost-effectiveness of DoD stores depends not only on the size of the subsidy and the amount of benefits that patrons receive (the two factors determining

the deadweight loss), but also on the impact that those benefits have on DoD's ability to attract and retain a high-quality force.

Who Benefits?

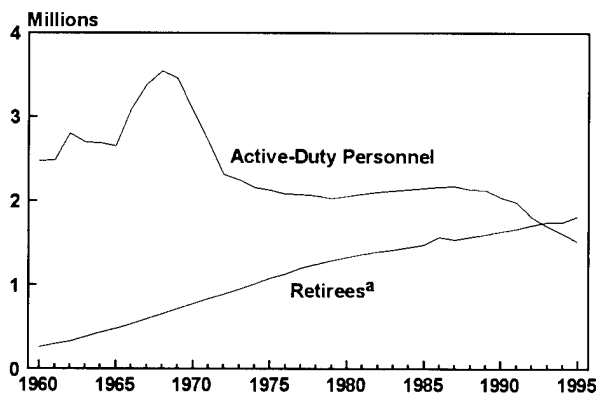
The number of military retirees increased gradually throughout the Cold War era and now exceeds the number of active-duty personnel (see Summary Figure 1). As a result, DoD's commissary and exchange systems—originally justified as convenient and affordable sources of goods for service members living on military bases—now focus heavily on serving retirees, who must drive to bases to shop. In 1993, 54 percent of commissary sales in the United States went to retirees, compared with 39 percent to active-duty personnel and 7 percent to reservists. Retirees also appear to account for about half of exchange sales of retail merchandise, although some exchange services (fast food, barber-shops, pay telephones) are used primarily by people living and working on-base.

That shift in the mix of patrons has implications for the cost-effectiveness of DoD's retail activities. A retail

system that serves active-duty personnel who live overseas or in isolated U.S. locations, where the value of the benefit is greatest, or who are about to make career decisions is likely to have a greater impact on retention than a system that primarily serves military retirees. (Young, active-duty service members who are making decisions about reenlistment may consider the benefits they will receive as retirees, but such members tend to heavily discount the value of deferred benefits. Moreover, the value of future commissary benefits is uncertain because it depends on people's eventual income, family status, and geographic location.)

The three exchange systems influence the mix of patrons in their stores through decisions about what types and quality of merchandise to stock. Those decisions are complicated by the fact that selling discount goods to enlisted personnel in competition with Wal-Mart and other discount retailers is not very profitable. The types of merchandise that generate the greatest earnings for exchanges (including upscale gift items such as Lladro figurines, Coach handbags, and Villeroy and Boch china) are often those that are most attractive to retirees with discretionary income. Finding the appropriate balance between discount store and upscale department store has long been a source of controversy for the exchanges. But that controversy has intensified in recent years as the size of the active-duty force has declined.

Summary Figure 1.
Number of Active-Duty and Retired Military Personnel, 1960-1995



SOURCE: Congressional Budget Office based on Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, *Selected Manpower Statistics, Fiscal Year 1995, DIOR/MO1-95* (1995).

a. Also includes families receiving survivor benefits.

How Do DoD's Prices and Commercial Prices Compare?

DoD's assessment of its commissaries and exchanges overstates the savings they provide to patrons in the United States. Price surveys commissioned by DeCA suggest that brand-name goods cost an average of 29 percent less in commissaries than in nearby supermarkets (including sales tax). Yet the average gross margin (sales receipts minus the wholesale cost of goods as a percentage of sales receipts) in U.S. supermarkets suggests that commissaries, which sell at 5 percent over wholesale cost, can provide average savings of only about 20 percent. The discrepancy between those two estimates of savings results in part from the tendency of shoppers to buy items when they are on sale. Industry margins reflect that shopping pattern, but price surveys like DeCA's, which identify the cost of a specific basket of goods on a particular day, do not.

Surveys commissioned by the three exchange systems appear to overstate patrons' savings in exchanges by an even greater amount. Those surveys indicate that exchange prices are about 20 percent below commercial prices (before sales tax). But customers' perceptions of how much they save, as well as comparisons between markups by exchanges and commercial discount retailers, suggest that exchange prices are only 5 percent to 10 percent below commercial prices (including sales tax). Customers' savings vary, however, depending on what kinds of goods they buy. Exchanges offer large savings on some types of merchandise, including tobacco, alcohol, and upscale items that discount retailers in the private sector do not carry. But enlisted personnel frequently say that commercial discount stores offer lower prices and a better selection of the kinds of merchandise they want.

What Is the Value of Savings to Patrons?

DoD's assessment of the value of its stores is also inconsistent with the economic principle that the actual value to consumers of a price discount is less than their

apparent financial savings (that is, the difference between what their purchases cost with the price discount and what those same goods would have cost without the discount). The fact that service members typically shop in both DoD and commercial stores supports that principle. It is evidence that, despite the financial savings, not every dollar spent in commissaries and exchanges yields the same benefit. The last dollar that patrons spend in DoD stores gives them no more benefit than the last dollar they spend in private, unsubsidized stores (after taking into account nonprice factors such as the distance they have to travel to shop, the hours that the stores are open, and the selection of merchandise). If the benefit was greater, patrons would choose to spend more in DoD stores and less in private stores.

One drawback to using DoD's retail activities as a form of compensation is that it is difficult to assess accurately either the cost of the subsidy or the value of the benefits. Nonetheless, under the illustrative (but not unreasonable) assumption that the total value of benefits to patrons equals 80 percent of their apparent financial savings, the deadweight loss associated with DoD's retail activities in the United States is on the order of \$700 million a year (see Summary Table 2). In that

Summary Table 2.
Annual Costs and Benefits of DoD's Retail Activities in the United States (In millions of 1995 dollars)

	Commissaries	Exchanges	Total
Subsidy Costs	1,170	850	2,020
Possible Benefits to Patrons ^a			
Active-duty patrons	300	200	500
Retired and reserve patrons	<u>600</u>	<u>200</u>	<u>800</u>
All Patrons	900	400	1,300
Subsidy Costs Minus Possible Benefits to All Patrons (Deadweight loss)	300	400	700

SOURCE: Congressional Budget Office based on 1995 data from the Department of Defense.

NOTE: Possible benefits to patrons and subsidy costs minus benefits are rounded to the nearest \$100 million.

a. These estimates assume that the value of benefits to patrons is 80 percent of patrons' apparent financial savings. CBO calculated apparent financial savings based on a 20 percent price difference between commissaries and commercial supermarkets and an average 7.5 percent price difference (the midpoint of the 5 percent to 10 percent range) between exchanges and commercial retailers.

illustration, giving active-duty personnel benefits equivalent to \$500 million in compensation through DoD's U.S. stores costs society \$1.2 billion (the \$500 million in benefits plus the \$700 million in deadweight loss).

Alternative Strategies for DoD's Retail Activities

The Department of Defense has many important reasons, which are not readily captured in a cost-effectiveness analysis, to continue operating large retail businesses that offer below-market prices. DoD officials wish to preserve military tradition and protect a unique, cohesive military lifestyle. They may also want to avoid the windfall gains and losses involved in switching from a compensation system that relies on below-market prices to one that relies on higher pay or allowances. People who would lose from such a change include the many military retirees who rely on DoD stores (and who feel that the benefit is a right they have earned), commissary and exchange employees, and the network of manufacturers, brokers, and distributors who support the current system.

Yet one of the key reasons that DoD's retail role has grown and persisted is that most of the costs fall outside the federal budget. Alternative strategies for the future of that role can take either a budgetary or a social perspective. Strategies that take a budgetary perspective on costs would encourage DoD to maintain a large role in retail activities because those activities allow the department to benefit from subsidies that are not included in either its own or the federal budget. Strategies that take a social perspective would encourage DoD to face the full cost of its retail activities and thus limit its role. This study examines four alternative strategies for DoD's retail activities (see Summary Table 3). The first two focus on reducing budgetary costs; the third and fourth focus on social costs.

Alternative 1: Follow DoD's Current Plan

The Defense Department plans to maintain the size, scope, and pricing policies of its commissaries and ex-

changes while reducing the cost of operating them. Its approach is two pronged. First, it intends to pursue federal waivers and legislation that would free commissaries from some of the legal and policy constraints that limit their ability to control costs. Commissaries would then operate more like nonappropriated-fund activities—able to hire workers outside the civil service and to pay some of their operating costs from the revenue they would generate from suppliers or patrons. Second, DoD is examining ways to consolidate the three exchange systems. Doing so would reduce operating costs and increase the exchanges' ability to generate earnings for morale, welfare, and recreation programs.

CBO estimates that fully implementing that approach could save DoD up to \$200 million to \$300 million a year. One of the weaknesses of the approach, however, is that providing DeCA with the same freedom enjoyed by private enterprises will not necessarily lower costs as long as commissaries depend on the political budget process rather than on competitive markets for most of their operating income.

Alternative 2: Create a DoD Resale Authority

A second alternative would reduce the budgetary costs of DoD's retail activities by combining DeCA and the exchange systems into what DoD refers to as a resale authority. The resale authority could be organized as either a government corporation or a revolving fund with NAF-like personnel and acquisition rules. It would reimburse DoD for any support the department provided, and the difference between its receipts and expenditures in any year would be included in the federal budget.

This option would increase Congressional control over federal resources (nonappropriated funds) that are now outside the federal budget. In addition, it would provide large budgetary savings: perhaps \$800 million to \$1 billion a year. Such savings would allow the resale authority—viewed from DoD's perspective—to almost break even. Much of the savings would come from raising prices on all commissary items to exchange levels (a logical move under a consolidated system). Additional savings would come from freeing commissaries from the constraints under which they operate as part of a federal agency and from combining

**Summary Table 3.
Alternative Strategies for DoD's Retail Activities**

	Scope of On-Base Activities	Pricing Strategy	Annual Costs or Savings (-) (Millions of 1995 dollars)		Standard of Living for Military Personnel
			In the Federal Budget	Outside the Federal Budget	
Current System of Retail Activities					
Baseline	Supermarkets, department stores, and liquor stores dependent on off-base patrons	Below-market	1,100 ^a	1,600	Current Level
Effects of Alternative Strategies for Retail Activities					
Alternative 1: Consolidate Exchanges and Reduce Constraints on DeCA	No change	Some increases in commissary prices	-200 to -300 ^b	Little change	Little change
Alternative 2: Create a Single DoD Resale Authority Within the Federal Budget	Grocery sales to off-base patrons decline	Commissary prices rise to exchange levels	-800 to -1,000 ^c	Some savings if scope of on-base activities declines	Declines for retirees; cash allowances offset effects on active-duty personnel
Alternative 3: Contract Out Operations and Subsidize Prices	No change	No change	800 to 1,200 ^d	-1,600	No change
Alternative 4: End Subsidies and Give Cash Allowances to Active-Duty Personnel	Much smaller role for on-base stores; remaining activities focus on people living or working on-base	Prices rise to market levels	-200	-1,600	Declines for retirees; cash allowances offset effects on active-duty personnel

SOURCE: Congressional Budget Office.

NOTE: DoD = Department of Defense; DeCA = Defense Commissary Agency.

- a. Commissary appropriations plus appropriated-fund support for exchanges minus reported exchange earnings. Although not included in the federal budget, exchange earnings can substitute for appropriated funds.
- b. Includes \$50 million to \$100 million in savings from consolidating the three exchange systems and \$150 million to \$200 million in potential savings from changing the civil service status of commissary employees and other initiatives that grant more flexibility to commissary managers.
- c. Includes savings from raising commissary prices (\$390 million after compensating active-duty personnel), requiring the resale authority to reimburse DoD for appropriated-fund support (\$370 million), changing the civil service status of commissary employees (\$150 million to \$200 million), and consolidating exchanges with commissaries (over \$100 million) minus the costs of appropriated funds to support Category A and B morale, welfare, and recreation programs.
- d. DoD's budget would rise to reflect the cost of taxes and the return on capital, although those costs would be offset in part by savings from competition.

commissary and exchange stores at bases where separate facilities are too small to be economical.

One disadvantage of this option would be the impact that higher prices for commissary items would have on patrons. From a broad social perspective, another disadvantage might be that a DoD resale authority that did not require a large annual appropriation might receive little public scrutiny, despite the social costs it would impose. In order to operate with little appropriated-fund support, the resale authority would have to keep its exemption from state and local taxes and would have to emphasize those activities that generate the most earnings—including sales of upscale items and of low-cost tobacco and alcohol.

Alternative 3: Rely on Private Contractors

A third alternative would require DoD to use contractors for all on-base retail services. That would eliminate the need for the Congress to create and oversee unique, quasi-governmental retail organizations. Using contractors rather than in-house providers might also allow DoD to distinguish more clearly between decisions that benefit the retail enterprises and decisions that benefit service members and the department as a whole. Even more important, competition among prospective contractors would reduce the costs of operating on-base facilities. Because the exchange systems already rely on concessionaires to provide many consumer services (such as pay telephones, fast food, and barbershops), DoD has experience in writing and monitoring the kinds of contracts that would be necessary.

One problem with Alternative 3 is that private contractors at bases in the United States might face higher operating costs than DoD because they would have to pay state and local taxes and earn a return on their capital. In theory, that need not change the size, scope, or pricing policies of on-base retail activities. DoD could subsidize contractors so that they could pay taxes and earn a return on their capital and still provide the same goods at the same prices as DoD's in-house stores. (Summary Table 3 reflects that assumption.) In practice, however, that approach would pose serious budgetary problems for DoD. U.S. commissaries and exchanges, which have annual operating costs of \$2.6 billion, benefit from \$1.4 billion a year in forgone taxes

and forgone return on capital. For many of those enterprises, the cost of taxes and of the required return on capital would outweigh any possible savings from more efficient operation by contractors.

Faced with the cost of subsidizing contractors, DoD would probably reassess the cost-effectiveness of below-market prices as a form of compensation. Although Summary Table 3 does not reflect this, DoD might allow contractors to charge higher prices, decreasing the size and scope of the department's retail activities in the United States. That would reduce the welfare of retirees who shop on-base. Moreover, unless the price increases were offset by higher compensation (as in Alternative 4), such a change would reduce the welfare of active-duty personnel and make it more difficult for DoD to attract and retain a high-quality force.

Alternative 4: Revise Incentives for DoD's Retail Activities

Under this alternative, DoD would pay the full cost of its in-house retail activities, including forgone taxes and the forgone return on capital. One way to achieve that would be to require DoD to make payments to the Treasury in lieu of forgone taxes and to borrow capital from a Treasury credit account at the pretax, private rate of return. The department would be free to choose between in-house and contractor-operated stores. It would also determine which activities to subsidize and to what extent. Active-duty personnel would receive bigger cash allowances to compensate for the higher prices they would face. (CBO's estimates of budgetary savings for Alternative 4 assume that DoD would offset the higher prices for active-duty personnel in the United States with additional cash allowances of \$500 million a year and that savings from eliminating subsidies for overseas stores would be just offset by higher overseas cost-of-living allowances.)

If DoD faced the full costs of its retail program, it would have an incentive to objectively evaluate the benefits of that program (including intangible factors such as the impact on military cohesion). As a result, DoD might well limit the size and scope of its retail system to the point where the costs of additional activities were balanced by the benefits. Likewise, this alternative would give the department an incentive to assess the nonfinancial drawbacks of its current role. Those draw-

backs include the extent to which running large retail businesses distracts DoD officials from their core missions, the impact that sales of low-cost tobacco and alcohol have on the health of service members, and the risk that access to goods at below-market prices will lead to fraud and scandal (as has sometimes happened in the past) or that black-market activities will undermine the character of military communities.

Under this alternative, the Congress could in theory increase DoD's budget to cover the expected payments to the Treasury, thus giving the department enough resources to provide the same retail system at the same prices that it does today. Even if the Congress did so, however, DoD would probably choose to use those funds for other purposes and pass much the cost of taxes and capital on to patrons in the form of higher prices. As in Alternative 3, those price increases would change the size and focus of DoD's role in retail activities. The department might place greater emphasis on convenience stores and services (such as fast food, dry cleaning, and barbershops) that serve the needs of members living and working on-base and do not require subsidies to attract customers. Prices of alcohol and tobacco might rise to commercial levels, causing sales of those items to off-base patrons to fall. Except in a few isolated areas, DoD might prove unwilling to subsidize large retail stores designed to attract off-base customers with below-market prices. In addition, with the playing field between contractors and in-house activities leveled, DoD might choose to rely on contractors to operate the retail stores that remained on-base.

This approach would eliminate the incentives that drive DoD to operate retail activities that are not central to its military mission. Without requiring the department to give up subsidized prices or in-house stores as a form of compensation, it would encourage DoD to be objective about their full costs and benefits. As a result, Alternative 4 offers the largest savings from a social perspective, while protecting DoD's ability to maintain a high-quality force. However, it does not offer the greatest budgetary savings to either the department or the federal government. The reason is that as DoD's role in retail activities declined, off-base stores and the state and local governments to which they pay taxes would reap much of the savings. From the perspective

of the federal budget, this option would save much less than Alternative 2 (a DoD resale authority) and slightly less than Alternative 1 (the department's current plan).

Selecting an Appropriate Strategy

Reducing DoD's retail role and increasing its dependence on cash compensation might be undesirable for many reasons. First, although the gains to society as a whole would be more than large enough to compensate all of the people who would lose, there would be no practical way to make offsetting payments to many of the losers—including military retirees, workers at DoD stores, and the private industry that supports the stores. Second, DoD is trying to cut the costs of its entire infrastructure in order to free up funds to buy new weapons. CBO's estimates indicate that from a budgetary perspective, DoD could save the most by creating a centralized resale authority that would capitalize on the department's retail role rather than reduce it.

Nonetheless, this study finds that the military's justification for its U.S. retail system—that it is a cost-effective alternative to cash compensation—is not credible when the costs that the system imposes outside the defense budget are taken into account. From a broad social perspective, DoD's tax-free status and its use of retail activities to generate revenue for MWR programs appear to have distorted the focus of a system that was originally designed to provide necessary articles of convenience to service members with limited shopping options. In addition, DoD's role raises issues that go beyond economic efficiency. The most effective military may be one that is free to focus on its central mission, rather than one with control of a \$14 billion a year retail empire that employs 96,000 civilian workers and competes with private companies. Those concerns suggest that fundamental changes in the current system—including possibly altering the tax treatment of DoD's retail activities and eliminating price subsidies—deserve serious consideration despite their limitations from a budgetary standpoint.

Introduction

The Department of Defense (DoD) provides an extensive network of retail stores and consumer services at its military bases for the use of current and retired service members and their families. Those DoD enterprises have annual sales of \$14 billion and employ about 96,000 federal workers—one for each 15 active-duty personnel. Military commissaries, which are similar to civilian supermarkets, account for \$5 billion of those sales. The various stores and services furnished by the military exchange system account for the other \$9 billion. That system operates post exchanges (similar to department stores) and also provides on-base gas stations, furniture stores, florist shops, optical shops, pet-grooming establishments, fast-food outlets, liquor stores, and credit card programs. Based on the value of the goods and services it sells, DoD runs the 10th largest supermarket chain and the 12th largest general retail chain in the United States.

According to the department, those enterprises operate primarily to provide a nonpay benefit to current and retired military personnel by offering access to low-cost goods and services. (DoD enterprises try to keep their prices about 20 percent below commercial levels.) In addition, the department argues, on-base stores foster a sense of military community and ensure that personnel at overseas or isolated U.S. bases have access to adequate shopping facilities. Both DoD officials and service members view commissaries and exchanges as integral parts of military compensation and the military way of life. Service members frequently cite DoD's retail activities (together with housing and medical care) as one of their most important nonpay benefits.

Within the United States, DoD's ability to charge below-market prices comes largely from taxpayer support—either in the form of Congressional appropriations or in the form of tax exemptions or other indirect benefits. The extent of that support, and its visibility in the federal budget, varies. Commissaries receive most of their taxpayer support through a single appropriation earmarked for their use. The visibility and size of that appropriation (almost \$1 billion a year) foster continuing debate about the appropriate level of taxpayer spending on commissaries.

In contrast, the costs of DoD's exchange system are much less visible. Although the department uses some appropriated funds to provide support services to the system, the cost of that support is not consolidated into a single appropriation account. In addition, many of the system's costs—including the state and local taxes forgone because of its tax-exempt status and the value of its monopoly over sales of goods and services at military bases—do not appear in either the DoD or the federal budget.

Moreover, the ability of the exchange system to generate funds for DoD's use often overshadows discussions of its total cost. The direct and indirect support that exchanges receive from taxpayers enables them to charge below-market prices, cover their remaining costs, and still produce over \$300 million a year in net earnings. DoD uses most of those earnings to support various morale, welfare, and recreation (MWR) programs that might not otherwise receive federal funding. It can do that without going through the budget process or creating federal budgetary outlays because

its exchanges and MWR programs—unlike commissaries—are nonappropriated-fund activities. In other words, their sales receipts and expenditures are handled outside the federal budget by so-called nonappropriated-fund instrumentalities of the Department of Defense.

Challenges to DoD's Role in Retail Activities

The U.S. military has a strong interest in the welfare of its personnel. As long as DoD continues to provide on-base communities, some government involvement in retail activities may be both necessary and desirable. That is especially true in overseas or isolated U.S. locations, where the private sector, unassisted, might provide few if any affordable alternatives. But it is also true at less remote U.S. bases, where DoD, even if it encouraged private businesses to provide goods and services, would still have to serve as a landlord with control over valuable retail sites.

The department's current role, however, goes beyond what is required to support its on-base communities. By offering below-market prices, DoD's on-base stores attract active-duty personnel, retirees, and reservists who live off-base and who might more conveniently shop elsewhere. Moreover, some of the goods and services that those stores offer at reduced prices—including luxury items, pet grooming, and alcohol and tobacco products—appear to have, at most, a tenuous relationship with the department's central mission.

Now may be an appropriate time to reexamine DoD's role in retail activities. The end of the Cold War and continuing concern about the federal deficit are limiting defense spending. Yet if DoD is to maintain the size of its forces, it must find money within its limited budget to procure new weapons. Under the leadership of Secretary William Cohen, the department is seeking to cut its infrastructure and costs by shifting tasks to the private sector where appropriate. Some analysts suggest that DoD could achieve part of the needed savings by reducing its role in retail activities. Moreover,

other changes brought on by the end of the Cold War—including fewer service members stationed overseas and longer average tours of duty in the United States—might aid a reduction in DoD's role. If the department decides to provide less on-base housing, and if military families become more integrated with civilian communities, the value of separate, on-base shopping facilities is likely to decline.

Some changes are already under way, and others are being considered. In October 1996, the Clinton Administration designated the Defense Commissary Agency as the federal government's first performance-based organization (PBO). As a PBO, the agency hopes to obtain waivers and legislation freeing it from costly government acquisition rules and personnel practices. DoD is also studying how much it could save by consolidating the three separate exchange systems run by the Army and Air Force, the Navy, and the Marine Corps. And in the past year, two independent study groups of the Defense Science Board have issued reports recommending that DoD contract with private grocers to run its commissaries.

Objectives of This Analysis

This Congressional Budget Office study examines the strengths and weaknesses of commissaries and exchanges as a way to compensate service members and to ensure that personnel living overseas or in isolated U.S. locations have access to U.S. goods. It also looks at the costs and benefits of alternative ways to meet both of those goals.

The study does not specifically examine DoD's commercial-style MWR facilities (movie theaters, golf courses, clubs, hotels, and bowling alleys), although many of the options considered for commissaries and exchanges might apply to them as well. However, the study does analyze some of the strengths and weaknesses of using nonappropriated-fund instrumentalities to control and allocate government resources. That analysis applies to all nonappropriated-fund activities, both MWR programs and exchanges.

The Commissary System

The Defense Commissary Agency (DeCA) operates just over 300 commissaries, or military grocery stores, throughout the world. Commissaries are a traditional part of military life, with roots that can be traced to the Civil War. Approximately 10 million people are eligible to shop in Department of Defense commissaries. Among those with unlimited shopping privileges—about 8 million people in all—are active-duty personnel, military retirees, DoD civilians living overseas, and the family members of those three groups. Members of the Selected Reserve and their families—about 2 million people—also have access to commissaries, but they are limited to 12 visits per year. Commissaries have many strong supporters, including DoD's senior leadership, associations of active and retired military personnel, commissary employees, military food brokers and distributors, and manufacturers of brand-name foods.

According to DoD policy, the primary purpose of commissaries is to provide a nonpay benefit to current and retired military personnel. In addition, commissaries foster a sense of military community and ensure that service members overseas have access to familiar U.S. goods. (In some foreign locations, commissaries are the only accessible and affordable source of U.S. brand-name products that service members have.) Within the United States, both retirees and active-duty personnel place a high value on access to commissaries. In a recent survey by DeCA, patrons identified commissary privileges as their most important nonpay benefit.

According to the agency's most recent estimates, a dollar spent in a commissary in the United States buys the same market basket of goods as \$1.40 spent in a

commercial supermarket. Although that estimate is subject to dispute, there is no doubt that commissary prices are substantially lower than commercial prices for the same goods.

One reason commissaries can offer low prices is that three-fourths of their operating costs are covered by Congressional appropriations rather than by sales receipts. Commissaries sell products at the wholesale cost plus a 5 percent markup. That markup, known as the commissary surcharge, pays the cost of capital investment, utilities at U.S. stores, and some supplies (such as paper bags and cash register tapes). Appropriations cover the cost of labor and contract services, transportation, and utilities overseas. In 1995, DeCA sold goods with a wholesale cost of \$5.4 billion, collected surcharges of almost \$300 million, and received about \$1 billion in appropriated funds.

Questions About the Costs and Benefits of DoD Commissaries

DoD maintains that the nonpay benefit provided by commissaries is a cost-effective alternative to providing more cash compensation. In an effort to demonstrate that, DeCA compares the annual appropriation for commissaries with its estimate of customers' savings. For a cost of about \$1 billion a year in appropriated funds, commissaries sell groceries with a wholesale value of \$5.4 billion. At commercial U.S. prices, those groceries have a value of about \$7.4 billion, according

to DeCA. Thus, the argument goes, each taxpayer dollar provides \$2 worth of noncash compensation to military personnel.¹

That argument is not persuasive to outside analysts, who have repeatedly questioned the cost-effectiveness of maintaining a government-subsidized chain of supermarkets in the United States. From an economic standpoint, there are a number of compelling reasons why commissaries—despite their undoubted value to service members—are unlikely to be as cost-effective as cash payments.

First, the supermarket industry in the United States is fiercely competitive. Regional chains are forced to use labor and capital efficiently to stay in business. It is improbable that a government agency, paying civil service wages and operating a chain of stores of various sizes dispersed throughout the country, could provide comparable service at a substantially lower cost.

Second, economic theory says that price subsidies—such as the ones that commissaries offer by selling goods for less than the cost of providing them—distort consumer choices and lead to inefficient outcomes. (A diagram illustrating this widely accepted economic principle is included in Appendix A.) Commissary customers buy goods as long as the value that they place on the goods exceeds the price. But because the price of subsidized commissary goods is less than the cost of providing them, the value that customers place on them is also frequently less than that cost. That argument implies that commissaries charging below-market prices would not be as cost-effective as cash compensation even if they could provide the same services at the same cost as private supermarkets.

Third, the value of commissaries to taxpayers is not the same as their value to customers. Because DoD cannot target commissary benefits to those pay grades and skills that it most needs to retain, the value to taxpayers of using commissary benefits as a tool for recruiting and retaining military personnel is likely to be less than the value to commissary customers.

Those arguments indicate that DoD's analysis of commissary benefits understates costs, overstates benefits, or both. By taking a closer look at the commissary system in the United States and overseas—who uses it, how much they gain from it, and how commissaries differ from civilian supermarket chains—this study seeks to provide a clearer picture of commissary benefits and costs.

Taking a closer look at the commissary system could also change the nature of the debate on commissaries. Specifically, it could lead analysts to ask whether the disadvantages of commissaries as a form of compensation are sufficient to outweigh the transition costs, loss of tradition, disrupted expectations, and lowered morale that could result from any fundamental change in the current system. Military tradition and the losses that change would impose on some individuals and groups in the short run may be underlying reasons for DoD to support today's commissary system. Those are realistic concerns that need to be acknowledged.

Commissary Patrons and Sales

DeCA's 1995 sales of \$5.4 billion make it the nation's 10th largest supermarket chain.² However, the value of commissaries as a way to attract and retain a high-quality military force depends not just on their total sales but also on the distribution of those sales between service members in the United States and overseas, and among active-duty personnel, reservists, and retirees.

Patrons and Sales in the United States

The 223 commissaries in the United States, with sales of \$4.6 billion, accounted for about 84 percent of total commissary sales in 1995. Military retirees and their families spent the majority of that \$4.6 billion. According to a DeCA survey, retirees made 54 percent of the purchases and accounted for 48 percent of the patrons in U.S. commissaries in 1993 (see Figure 1). Retirees and reservists account for a higher percentage of sales

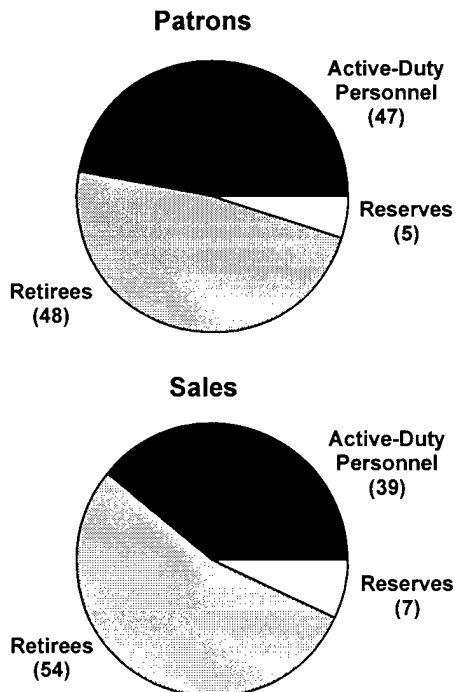
1. DeCA usually cites \$1.60 in benefits for each dollar of appropriations. However, that estimate is based on 1992 survey results indicating that a dollar spent in commissaries could purchase the same amount as \$1.30 spent in civilian supermarkets. In DeCA's 1996 price survey, that figure rose to \$1.40.

2. "Demographic Section," *Exchange and Commissary News*, vol. 33, no. 10 (October 15, 1996), p. 86.

than of shoppers because their average purchases are larger. Active-duty personnel, who usually live closer to the commissary, typically shop more frequently but make smaller purchases.

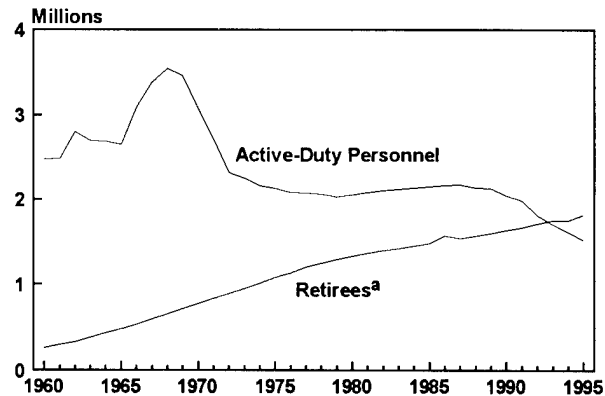
DeCA does not routinely track sales by type of patron. But cuts in the size of the U.S. military since the end of the Cold War have probably significantly reduced the percentage of sales going to active-duty personnel. Based on changes in the number of active, retired, and reserve personnel living in the United States, the Congressional Budget Office (CBO) estimates that active-duty service members and their dependents were responsible for 36 percent of U.S. commissary sales in 1995, down from 41 percent in 1991. (Those estimates assume that the per capita use of commissaries by each type of personnel did not change.)

Figure 1.
Distribution of Commissary Patrons and Sales in the United States, 1993 (In percent)



SOURCE: Congressional Budget Office based on data from the 1993 Patron Demographic Survey, a survey of 5,000 patrons at 28 U.S. commissaries conducted by the Defense Commissary Agency's Office of Strategic Planning and Analysis.

Figure 2.
Number of Active-Duty and Retired Military Personnel, 1960-1995



SOURCE: Congressional Budget Office based on Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, *Selected Manpower Statistics, Fiscal Year 1995*, DIOR/MO1-95 (1995).

a. Also includes families receiving survivor benefits.

Moreover, long-term trends in the number of retirees and active-duty personnel suggest that the percentage of sales made to retirees has increased gradually since at least the early 1960s. Retirees now outnumber active-duty service members (see Figure 2). By contrast, there were relatively few military retirees when the modern commissary system began at the end of World War II.

Based on DoD's projections of the future active, reserve, and retired populations, active-duty personnel and their dependents could account for just 34 percent of U.S. commissary sales by the end of the decade. Whether that actually occurs, however, will depend in part on DoD policies and Congressional actions. Because low tobacco prices have traditionally attracted many retirees to military bases to shop, DoD's recent decision to raise the price of tobacco in commissaries could reduce the share of sales to retirees (and thus increase the share to active-duty personnel). By contrast, if the Congress adopts proposals to grant unlimited shopping privileges to reservists or to extend commissary privileges to DeCA employees, the share of sales

Table 1.
Distribution of U.S. Commissary Sales, Active-Duty Personnel,
and Military Compensation, by Grade, 1993

Grade	Percentage of U.S. Commissary Sales to Active-Duty Personnel and Their Families	Percentage of Active-Duty Force	Percentage of Regular Military Compensation
Junior Enlisted (E-1 to E-4)	16	46	32
Senior Enlisted (E-5 and above)	62	40	43
Warrant Officer	2	1	1
Junior Officer (O-1 to O-3)	9	8	11
Senior Officer (O-4 and above)	11	5	13
All Active-Duty Personnel	100	100	100

SOURCE: Congressional Budget Office based on data from the Department of Defense.

to active-duty personnel could fall below 34 percent. In addition, DoD's policy of keeping commissaries open that serve as few as 100 active-duty members (even on bases closed as part of the base realignment and closure process) might increase the share of sales made to reservists and retirees rather than active-duty personnel.

In theory, the knowledge that they will be eligible for commissary benefits after retirement could encourage high-quality personnel to join and remain with the military. However, empirical evidence suggests that when young service members make career decisions, they focus on current compensation and heavily discount the value of deferred benefits.³ That outlook is particularly likely for commissary benefits, since their future value depends on uncertain factors, such as a person's future family status and proximity to a commissary. As a result, DoD's inability to target commis-

sary benefits toward active-duty personnel may have a serious impact on the cost-effectiveness of commissaries as a form of noncash compensation.

The military is also limited in its ability to target commissary benefits toward service members in pay grades and occupations where it needs higher retention, or toward people who might otherwise experience economic hardship. Senior enlisted personnel and officers are among the groups most likely to have families and least likely to rely on DoD dining facilities. Accordingly, they account for a disproportionate share of commissary sales. For example, senior officers (grade O-4 and above) accounted for 5 percent of active-duty military personnel in 1993 but 11 percent of commissary sales to active-duty members (see Table 1). By contrast, junior enlisted personnel (grade E-4 and below) accounted for 46 percent of the active-duty force but only 16 percent of commissary sales to active-duty members. (That is equivalent to just 6 percent of total commissary sales.) Although the number of junior enlisted personnel who are eligible for food stamps is sometimes cited as a justification for commissaries, DoD has no way to target commissary benefits toward that group.

3. Estimates of discount rates typically range from 10 percent to 20 percent for enlisted personnel at the ages when they might be making career decisions. See Matthew Black, "Personal Discount Rates: Estimates for the Military Population," in Department of Defense, *Fifth Quadrennial Review of Military Compensation*, vol. IB, *Supporting Appendixes to Uniformed Services Retirement System* (January 1984), Appendix 1, Attachment 3.

DoD's surveys of spending patterns show that military families in the United States typically use commissaries for about 60 percent of their purchases of the goods that commissaries sell.⁴ CBO estimates that the households of senior active-duty officers spent an average of \$2,300 in commissaries in 1995, those of senior enlisted personnel spent \$2,000, and those of junior officers spent \$1,200. Households of junior enlisted personnel spent an average of just \$500 (many junior personnel are single and eat in dining halls).⁵ But even though senior officers spend more in commissaries, senior enlisted personnel may be more likely to consider commissary benefits an important aspect of their total military compensation, since their share of sales far outweighs their share of military pay.

Patrons and Sales Overseas and at Isolated U.S. Bases

Commissaries may be a much more cost-effective form of compensation overseas than in the United States. Part of the reason is that most of DeCA's overseas sales are made to active-duty service members and their families. In DeCA's European stores, for instance, active-duty personnel and their dependents make up 73 percent of commissary patrons. Retirees account for 10 percent of patrons, and DoD civilians and others—including personnel of the North Atlantic Treaty Organization—account for the remaining 17 percent.⁶

Higher prices for U.S.-style goods in foreign stores, unfamiliar labels, and problems resulting from language and cultural differences help explain why military families living overseas rely more on commissaries than families in the United States do. In the United States, commissary sales to active-duty members and their dependents average about \$500 per person per year. In overseas locations, the equivalent figure is

about \$1,300 per eligible patron (active-duty personnel, DoD civilians, military retirees, and all of their family members).⁷

Although commissaries remain very important to military families overseas, the drawdown in U.S. troops since the end of the Cold War has reduced the size of the overseas commissary system relative to that of the U.S. system. Between 1989 and 1995, the share of commissary sales made outside the United States declined from 20 percent to 16 percent. Moreover, the roughly \$800 million in overseas sales in 1995 were concentrated in a few countries: stores in Germany accounted for almost 37 percent, and stores in Japan, South Korea, Italy, the United Kingdom, Guam, Puerto Rico, and Panama accounted for another 55 percent.

In the United States, some commissaries are located in isolated areas where patrons might not otherwise have access to convenient, reasonably priced groceries. However, the number appears to be very small. Data provided by DeCA indicate that in 1995, just seven bases with commissaries (Crane, White Sands, Dugway, Sierra, Camp Merrill, Fallon, and Ft. Irwin) did not have a commercial supermarket within 10 miles.⁸ Sales at those seven commissaries totaled \$23 million in 1995, about one-half of one percent of all U.S. commissary sales. Although DoD may need to ensure that goods are available in such locations, that requirement does not provide a credible rationale for the entire commissary system.

Implications of the Usage Patterns

The high proportion of retirees among U.S. commissary patrons, and the relatively small proportion of total sales made overseas or at isolated U.S. bases, highlights the fact that commissaries are not a benefit that

4. Based on Department of Defense, Defense Manpower Data Center, *Continental United States (Conus) Living Pattern Survey* (1993).

5. CBO's estimates are based on the proportion of U.S. commissary sales going to those groups (as reported in DeCA's 1993 Patron Demographic Survey), on total U.S. commissary sales in 1995, and on the number of those personnel stationed in the United States in 1993.

6. Those estimates are based on 1995 survey data collected as part of DeCA's Customer Service Evaluation System. Active-duty personnel in overseas locations, like those in the United States, may account for a greater percentage of patrons than of sales.

7. Part of the difference between the U.S. and overseas figures may result from black-market activities. For example, DoD estimates that between 10 percent and 15 percent of the sales made by military stores in South Korea go to black marketeers. See Karen Towers, "Beer Sales Will Be Limited in South Korea," *Air Force Times*, May 26, 1997, p. 23.

8. The Defense Commissary Agency sometimes includes costs and sales at 17 isolated U.S. bases with costs and sales overseas. However, the list of isolated bases that it uses for that purpose was compiled by DoD based on access to recreational facilities rather than access to grocery stores.

can easily be targeted toward groups for whom retention or morale is a problem. Because of that lack of flexibility, the value of commissaries to taxpayers may be much less than their value to patrons. In particular, the rising percentage of sales going to retirees and the declining percentage going to military personnel overseas may be reducing the cost-effectiveness of commissaries as a tool to attract and retain a high-quality force.

Uncertainty about who benefits from the stores and lack of control over those benefits distinguish commissaries from other forms of military compensation. A brief review of the history of the commissary system shows that DoD only recently adopted the position that commissaries are a cost-effective form of compensation.

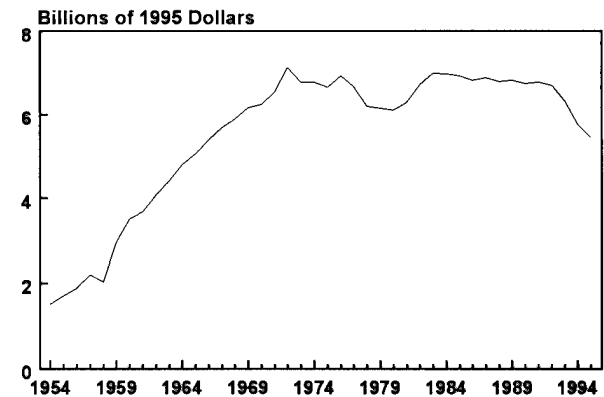
Past and Present Rationales for Commissaries

The roots of military commissaries go back to the Civil War. But the commissary system as it exists today—a large network of full-service grocery stores designed to serve families rather than to meet the needs of single troops—did not emerge until shortly after World War II. During the 1950s and 1960s, DoD took on the responsibility of providing on-base communities (complete with housing and shopping opportunities) to serve a large enlisted force of married personnel. Commissary sales, adjusted for inflation, rose from \$1.5 billion in 1954 to over \$7 billion in 1972—an increase of more than 300 percent (see Figure 3).

Despite the rapid growth of the commissary system, DoD's stated policy during that period was to provide commissaries only where local grocery stores were not convenient, adequate, or affordable. That policy reflected direction provided by a subcommittee of the House Committee on Armed Services during hearings in 1949. According to Congressman Philbin, the Chairman of that subcommittee:

The whole theory of the commissary privilege . . . was originally to give it to the people who were at isolated stations who did not have the benefit of metropolitan sales. That is the whole theory and the only justification for it. It

Figure 3.
DoD Commissary Sales Worldwide, 1954-1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

was never intended that the Government should go in the business of providing for its personnel where they have the privilege and opportunity to go to a private place to buy. It was intended on account of the remoteness of stations to accommodate them.⁹

Each year between 1953 and 1974, the Secretary of Defense certified to the Congress that commercial stores were not adequate, convenient, or reasonably priced in every location that had a DoD commissary.¹⁰ But as the U.S. supermarket industry expanded and the civilian communities near military bases grew, the notion that DoD provided commissaries only in isolated areas—and thus did not compete with private grocery stores—gradually lost credibility. In 1975, a study by the General Accounting Office examined 27 urban commissaries and found that each one had at least four grocery stores within five miles of it.¹¹ In addition, the study found that DoD had never closed a commissary on the grounds that convenient, adequate, and reason-

9. Quoted in General Accounting Office, *The Military Commissary Store: Its Justification and Role in Today's Military Environment*, FPCD-75-88 (May 21, 1975), p. 1.

10. That certification process is discussed in General Accounting Office, *Information on Commissary Store Operations*, FPCD-75-132 (March 19, 1975).

11. General Accounting Office, *The Military Commissary Store*.

ably priced commercial alternatives had become available nearby.

Growth in the amount of appropriated funds needed to pay for the commissary system, together with doubts about DoD's rationale for maintaining commissaries in the United States, has periodically brought recommendations that the department either close its U.S. commissaries or make them self-supporting. In 1967, a DoD study group (the First Quadrennial Review of Military Compensation) advocated that commissaries rely on receipts from patrons to pay all of their costs. In the 1970s, President Ford supported a similar recommendation. In 1983, the Privatization Task Force of the President's Private Sector Survey on Cost Control (the Grace Commission) recommended having private firms manage commissaries.

None of those proposals were adopted. As the commissary system became more established, the Congress's initial concern about protecting private grocers from government competition shifted to an emphasis on protecting the benefits that commissaries provide. One of the few lasting results of those proposals was DoD's adoption in 1987 of a new policy on the purpose of commissaries. It stated:

The Department of Defense operates commissaries as an integral element of the military pay and benefits system. . . . They are a proven, efficient method of compensating military personnel. The savings offered by well-managed commissaries provide significant noncash benefit to military personnel at lower cost than cash pay equivalents.¹²

According to the new policy, commissaries were to be viewed as part of the military compensation package rather than as a substitute for private stores in isolated areas. That represented a significant departure from the view offered by the First Quadrennial Review 20 years earlier: that commissaries could not be considered part of the military compensation package because of uncertainty about who they benefited and lack of uniformity in the allocation of those benefits.

12. Department of Defense, Assistant Secretary of Defense for Force Management and Personnel, *Armed Services Commissary Regulations*, Directive 1330.17-R (April 1987), p. 5-1.

DoD's new policy also emphasized that commissaries served to "foster and maintain a sense of military community" and contributed to "a sense of confidence among military personnel that their families are cared for by the military institution."¹³ In the view of some military personnel, the emphasis on military community was a straightforward and perhaps overdue recognition of what had—in fact, if not in formal policy—always been an important underlying justification for commissaries. Other rationales that are frequently cited include the need to support families overseas with U.S. goods, the need to help junior enlisted families who have limited resources, and the view that change would be unfair to people who served in the military in the expectation that they would receive commissary benefits throughout their lifetime.

Although clearly commissaries continue to exist for many reasons, DoD's primary justification for the system today is that commissaries are a cost-effective form of compensation. That view deserves close scrutiny. How can the benefits enjoyed by the various types of patrons be measured? How do those benefits in turn help DoD maintain a high-quality military force? And what are the costs of commissaries to taxpayers?

Measuring Commissary Benefits

DoD's cost-benefit analysis assumes that the benefits that the system provides to taxpayers who are concerned about maintaining a high-quality military force equal the total savings that patrons receive on their grocery bills. One weakness of that approach was noted earlier: it overlooks the importance that the distribution of benefits among different groups of patrons has for the military's ability to retain a high-quality force. Two additional weaknesses are discussed below. The first is that price surveys may overstate the amount that commissary customers save on their grocery bills. The second is that the benefits that customers get from low commissary prices are not the same as their financial savings on grocery costs.

13. *Ibid.*, p. 4-1.

Financial Savings to Patrons

Because commissaries receive appropriations and are exempt from state and local sales and excise taxes, they can sell brand-name products at significantly lower prices than civilian supermarkets can. Those low prices explain why commissaries are one of the military's most valued nonpay fringe benefits. As General Beale, the director of the Defense Commissary Agency, put it: "If low prices ever drop out of the number one position in terms of likes or reasons why people use the commissary, then we all ought to start looking for a new line of employment because that's what makes the commissary special."¹⁴

Commissary Prices in the United States. Commissary prices are clearly lower than supermarket prices for similar goods, although the exact percentage difference is uncertain. According to a 1996 survey funded by DeCA, people who buy a typical market basket of goods in a U.S. commissary can expect to save 29 percent from the cost (including sales tax) of those same goods in a commercial supermarket.¹⁵ (Expressed differently, that means a typical basket of goods costing \$100 in a commissary would cost \$140 in a civilian supermarket.) That 29 percent savings estimate is substantially higher than DeCA's 1991 estimate of 23 percent savings.

Given what is known about the operating costs of commercial supermarkets, however, it is unclear whether savings can indeed be as large as 29 percent. In conventional supermarkets, the average gross margin (the difference between retail sales and the wholesale cost of the goods sold, expressed as a percentage of retail sales) was approximately 24 percent in 1995. That figure has been relatively stable in recent years, ranging between 22 percent and 24 percent since 1988. DeCA's prices equal the wholesale cost of goods plus a 5 percent surcharge that is roughly equivalent to the average sales tax paid by shoppers in commercial supermarkets. Thus, the only way DeCA could consis-

tently offer savings that were greater than the commercial gross margin would be if it were able to buy goods at a lower cost than commercial stores do.¹⁶

That lower cost would have to be substantial. The 24 percent average gross margin reported by commercial stores reflects many high-margin activities that were not included in DeCA's 1996 price survey—such as florists, bakeries, delis, salad bars, and sales of private-label (as opposed to brand-name) goods. Private-label products, which account for 20 percent of supermarket sales, combine a high markup for the store with a low price for consumers (see Box 1). CBO estimates that the average industry markup on the basket of goods used in DeCA's price survey would be about 22 percent. In order for DeCA to offer savings of 29 percent compared with commercial retail prices, it would have to negotiate wholesale prices that were, on average, 9 percent below those paid by commercial supermarkets.

DeCA is not subject to the Robinson-Patman Anti-Discrimination Act, which governs fair-trade practices. Thus, vendors can legally offer it lower prices than they do to other buyers. However, with the exception of tobacco companies (which have historically sold tobacco products to DoD at prices below those charged to other buyers), CBO has found no evidence that vendors in fact do so. In some cases, DeCA may face higher prices than commercial supermarkets because of the extra services that it asks suppliers to provide (such as shelf stocking and daily deliveries to stores) and because of the need to support a system of brokers who specialize in the military market.

CBO's best estimate of the price differential between commissaries and commercial stores is 20 percent (although actual savings might be either higher or lower). That estimate equals the commercial margin on the categories of brand-name goods included in DeCA's market basket, adjusted downward by 2 percent to account for the cost of the workers (known as baggers) whom commissary patrons pay to bag and transport

14. Quoted in Cathy Riddle, "Surprise! Low Prices Top Commissary Survey," *Military Market* (Fall 1994).

15. Defense Commissary Agency, *1996 Market Basket Comparison Study* (prepared by Wirthlin Corporation, March 1996).

16. The costs of operating commissaries are not reflected in the prices that DeCA charges. As a result, the efficiency with which DeCA manages its stores—apart from its success in negotiating prices with its suppliers—does not affect the level of savings that patrons receive.

Box 1.**The Absence of Private-Label Goods in Commissaries**

Unlike most civilian supermarket chains, commissaries do not offer private-label goods (a category that includes items bearing store labels rather than nationally advertised brand names). Private-label goods account for an increasing share of civilian supermarket sales—around 20 percent in 1995. Typically, those goods are priced about 30 percent below brand-name products. That makes them particularly attractive to families with limited budgets. And despite their low retail price, sales of private-label goods are also attractive to supermarkets. Because the wholesale cost of such goods is only about half that of brand-name products, supermarkets earn a higher margin (the difference between the retail and wholesale price as a percentage of the retail price) on private-label sales.

Military exchanges have found that private-label goods such as clothing, health and beauty aids, and basic household items are very appealing to their price-conscious customers. In one combined commissary and exchange store overseas, the Army and Air Force Exchange Service's in-house brands, sold at the exchange markup, compete well against brand-name merchandise sold at the lower commissary markup.

How much could patrons save on their grocery bills if the Defense Commissary Agency (DeCA) sold private-label goods? The Congressional Budget Office estimates that DeCA, with its 5 percent markup, now offers average savings of 20 percent on brand-name goods. But with that same markup, it could sell private-label products for 60 percent less than commercial retail prices for brand-name goods, 50 percent less than commissary prices for brand-name goods, and 40 percent less than commercial prices for private-label goods.

If DeCA offered private-label products, and if 20 percent of the items in a typical market basket were private label, the grocery bills of commissary patrons would decline by 10 percent. That figure may overstate the true benefits to patrons, however, because private-label goods may be worth less than brand-name goods in the eyes of consumers. The average price difference

between brand-name and private-label goods in civilian supermarkets is 30 percent. If that difference is an index of the relative value of private-label products to consumers, the net gain to commissary patrons would be equivalent to savings of about 7 percent. Given annual commissary sales of \$5.4 billion, that would amount to savings of around \$400 million a year. Those figures are not exact. But because purchases of private-label goods would be entirely voluntary, providing such goods could only increase the welfare of service members by increasing the choices available to them.

Why does DeCA not offer private-label products? Part of the answer may lie in the extra services that it demands from its vendors. Private-label goods are less profitable for vendors than brand-name goods. As a result, vendors selling private-label goods might not be able to offer services (such as daily delivery of merchandise to stores and shelf stocking) that DeCA is used to. To accommodate those vendors, DeCA might have to pay somewhat higher wholesale prices for private-label goods than civilian stores do. Another problem is that, under current law, DeCA would have to use competitive procurement procedures to buy private-label goods, instead of the simplified procurement rules it follows to buy brand-name goods. (Military exchanges, as nonappropriated-fund activities, can already purchase private-label products in the same way as brand-name ones.) The risks associated with using simplified purchasing rules for either type of product are relatively small, however, because customers will not buy items that are not competitive in quality and price.

Political pressure may also be a factor. DeCA benefits from its close relationship with trade associations whose members—brand-name vendors, brokers, and distributors—lobby vigorously in support of the commissary system. The members of those associations would be harmed by the introduction of private-label goods in commissaries. DeCA's failure to provide such goods could be an example of conflict between the welfare of the military's retail activities and the welfare of service members.

their groceries to their car.¹⁷ CBO's estimate implicitly assumes that the wholesale price of brand-name goods (other than tobacco) is the same for DeCA as for other retailers.¹⁸

That estimate appears to be closer to customers' perceptions of commissary savings than is DeCA's 29 percent figure. Although results vary depending on the specific poll, commissary patrons have frequently indicated that they perceive lower savings than market-basket comparisons suggest. A 1994 poll of commissary customers by *Airman* magazine found that 12 percent of patrons thought they saved less than 10 percent, 51 percent thought they saved between 10 percent and 20 percent, and only 36 percent thought they saved at least 20 percent.¹⁹

What explains the large discrepancy between DeCA's reported savings on the one hand and industry margins and customer perceptions on the other hand? Weaknesses in the design of DeCA's price survey may be one factor. For example, the contractor conducting the survey selects the goods for comparison from lists of DeCA's best-selling items. As a result, most commissary items have a zero probability of being included rather than a probability that reflects their actual sales.

Perhaps more important, the market-basket survey approach involves comparing the price of a specific basket of goods in commissaries at a single point in time with the average price in nearby supermarkets. That approach overlooks the fact that consumers tend to buy more of items when they are on sale. Civilian supermarkets rely on sales as an important marketing tool. Shoppers frequently stock up on nonperishable items during sales and also adjust their weekly menus to take advantage of specials on specific cuts of meat or types of produce. Some consumers may go out of their

way to shop at a store that is advertising an attractive special. Those shopping patterns, which affect the prices that consumers typically pay for different goods, are automatically reflected in industry margins but are not captured in market-basket comparisons.²⁰

Although DeCA appears to overestimate the financial savings that commissaries offer service members in the United States, those savings are still substantial. Based on CBO's 20 percent estimate, commissary sales in the United States provided current and former service members with over \$1.1 billion in financial savings in 1995.²¹ About \$400 million of that went to the families of active-duty personnel and about \$700 million to the families of retirees and reservists. Moreover, those estimates do not include the value of overseas commissary sales.

Commissary Prices Outside the United States. In addition to serving as a source of familiar U.S. products, commissaries at DoD's overseas bases offer goods at lower prices than nearby supermarkets. That is true even though DeCA estimates that prices are about 9 percent higher, on average, in overseas commissaries than in U.S. commissaries.²²

A 1993 survey by the U.S. Department of Agriculture compared food prices in cities around the world.²³ Although the survey results were based on a limited set of goods, restricted to capital cities, and subject to fluctuation with exchange rates, they give some idea of how

17. The use of baggers is discussed in greater detail on page 15. In the past, DeCA has estimated that if it was responsible for paying baggers, it would need to levy a 2 percent service charge. See Robyn Chumley, "Shoppers Speak Out," *Airman* (December 1994), p. 47.

18. In estimating the overall price differential, CBO used DeCA's estimates of savings for tobacco products because commissaries' immunity from excise taxes and the low wholesale prices that cigarette manufacturers charge them result in savings that exceed the industry margin. CBO also used DeCA's estimates for produce. The cost of produce to commissary patrons includes some losses from spoilage, which may help explain why DeCA's reported savings on produce are below the industry margin.

19. Chumley, "Shoppers Speak Out."

20. To the extent that stocking up on items, adjusting menus, and shopping in multiple stores impose costs on consumers, the savings on grocery bills that such practices permit overstate the benefit that customers receive. Commissary patrons benefit from "everyday low prices" without engaging in those practices. Nonetheless, they are appropriate to consider in a discussion of the financial savings to commissary patrons. Moreover, industry margins reflect those practices only to the extent that they are normal shopping behavior.

21. If savings are 20 percent of commercial prices, each dollar spent in a commissary saves customers 25 cents. U.S. sales of \$4.6 billion times 0.25 equals \$1.15 billion.

22. Overseas commissaries sell goods at the wholesale cost (excluding transportation charges) plus a 5 percent surcharge. But price differences between U.S. and overseas commissaries arise for such items as tobacco (which is less costly overseas because no federal excise taxes are paid), perishable items (which DeCA frequently buys locally), and soda (which is more costly in Europe because DeCA buys it from exchanges at a price 5 percent below the exchanges' retail price).

23. Larry Traub, "Time Worked to Earn Value of Food Varies Widely Around the World," *Food Review*, U.S. Department of Agriculture Economic Research Service, vol. 17, no. 3 (September-December 1994).

commissary prices appear to service members compared with local prices. Allowing for the difference between overseas commissary prices and U.S. commercial prices, the results of the survey suggest that a market basket costing \$100 in an overseas commissary (and \$120 in a Washington, D.C., supermarket) would cost about \$130 in a supermarket in London, \$150 in Bonn, \$160 in Rome, \$190 in Seoul, and \$380 in Tokyo.

Surprisingly, though, the price difference between commissaries and local stores (as well as between military exchanges and local stores) is not always an advantage for U.S. service members living overseas. The reason is the way DoD calculates the cost-of-living allowances (COLAs) that it uses to compensate military personnel stationed overseas for differences between U.S. and local prices. The size of the COLA in each overseas location reflects the relative quantities of local goods and commissary and exchange goods that service members stationed there typically choose to buy. But that mix can be skewed if large price differences between local stores and commissaries make local goods appear unreasonably costly and encourage service members to limit their shopping to commissaries. As a result, the COLAs based on that mix may be so small that they make it difficult to shop in local stores.²⁴

The interaction between DoD prices and COLAs may not be a problem in places where local shopping opportunities are unattractive because of the nature of the stores or the products available. But a large percentage of U.S. service members in Europe live near urban communities that have attractive, modern supermarkets offering a wide array of goods. Even there, the COLA system can in effect trap military personnel into shopping at small commissaries that may offer no more than 2,000 separate items. The disadvantages of feeling limited to on-base shopping are likely to grow as the integration of European markets increases the supply and variety of international and U.S. brand-name goods in European stores. Rather than augmenting the shopping opportunities that the local economy and an adequate COLA would offer, commissaries and exchanges with low prices may be reducing the COLA and restricting shopping alternatives. Paradoxically,

the service members whose COLAs are most affected by this problem (those people living in communities where local prices are much higher than commissary prices) are likely to be the ones who value their commissary benefits most highly.

Price comparisons and estimates of savings on grocery bills are at best a starting point from which to try to estimate the value of commissaries to patrons. In those overseas locations where shopping is unattractive and familiar brand names are unavailable, price comparisons seriously understate the benefits that commissaries provide. In the United States, where low prices are the commissaries' main selling point, estimates of financial savings are likely to overstate the value that customers place on their commissary privileges.

Differences Between Commissaries and Civilian Supermarkets

Active-duty families in the United States buy about 40 percent of their groceries in stores other than commissaries, which is evidence that the benefits of commissary shopping cannot be measured simply by savings on grocery bills. Although families could save more by spending another dollar in the commissary, the fact that they choose not to demonstrates that the last dollar spent in a commissary yields no more benefit than the last dollar spent in a commercial store. (If the benefit was greater, families would shift more of their purchases to commissaries.)

A variety of nonprice differences between commissaries and civilian supermarkets help explain the disparity between the financial savings that U.S. commissaries offer and the benefits that their patrons receive. Those differences—which affect the costs of providing commissaries as well as the benefits—arise because DeCA's goals and problems differ from those of private supermarkets.

In the private sector, increased sales mean greater profits. Supermarkets compete to attract patrons and generate sales, relying on long hours, convenient locations, and customer service as well as on price. In addition, to satisfy different consumer needs, civilian grocery chains compete with one another by offering alternative store formats—convenience stores, warehouse

24. In the early 1990s, depreciation of the dollar relative to the yen encouraged U.S. service members in Japan to rely more on commissaries and exchanges. As a result, COLAs in Japan actually fell.

stores, and "hypermarts" that offer one-stop shopping for both food and general retail merchandise.

In commissaries, however, sales receipts do not cover the costs of additional transactions. For them, increased sales mean an increased need for appropriated funds. The challenge facing a commissary manager is to sell goods priced at their wholesale cost plus 5 percent, not exceed a limited appropriated-fund budget, and still permit as many potential customers as possible to benefit. Managers must meet that challenge while operating under all of the employment, contracting, and accounting rules that guide DoD agencies using appropriated funds. The unique incentives and constraints faced by commissary managers lead to some significant differences between commissaries and commercial stores.

Limitations in Access and Service. One important difference is that commissaries—though historically justified as a way to provide convenient access to groceries—are frequently less accessible to their patrons than commercial stores. Commercial supermarkets are typically designed to serve the neighborhoods that surround them. Some urban chains, for example, plan for stores to draw almost exclusively from a two- to three-mile radius.²⁵ Commissaries, by contrast, are designed to serve an eligible population that may be dispersed throughout a metropolitan area. In an informal survey by *Military Market* magazine, commissary patrons cited the proximity of private supermarkets to their home as the most important reason they did not rely more on commissaries. The next most important reason—the longer hours that private stores are open—is also an aspect of accessibility.²⁶

Even though current and former service members may value their right to shop in a military environment, commissary use declines with the distance that patrons must travel. Each household of a retired service member within five miles of a commissary typically adds \$3,600 a year to commissary sales, whereas one between five and 10 miles away adds \$2,800, and one

between 10 and 30 miles away adds only \$850.²⁷ For some people who do travel to shop in commissaries, the net benefit—taking into account travel time and inconvenience as well as intangible benefits—will be less than the savings on their grocery bill.

Although travel costs reduce patrons' benefits, they also help control the size and cost of the commissary system. Total grocery spending by the approximately 8 million people with unlimited access to U.S. commissaries is on the order of \$12 billion a year (based on average grocery spending in the United States of \$29 per person per week in 1995).²⁸ If DoD eliminated the need to travel and provided groceries at commissary prices to all 8 million eligible personnel (perhaps by issuing grocery coupons that shoppers could redeem at local supermarkets for a savings of 20 percent), it would need over \$2 billion in annual appropriations to support the U.S. system alone. That sum is more than twice the appropriation that DeCA received in 1995 for the entire commissary system.

In addition to the restrictions imposed by distance, commissaries have adopted operating practices that reduce the need for appropriations by further limiting service and access. Compared with commercial supermarkets, commissaries typically offer shorter hours, more crowded shopping conditions, and a more limited selection of merchandise (see Table 2). Those practices reduce the need for appropriations in two ways: they lower the operating cost per dollar of sales, and they discourage some people from shopping in commissaries. By conventional measures such as weekly sales per employee, crowded shopping conditions can make DeCA appear more efficient than commercial supermarkets.

Those characteristics of commissaries may also affect the mix of active-duty and retired personnel who use them. Short lines and labor-saving items (such as salad bars and preseasoned meat ready for the oven) may be of greater value to young, two-earner families than to military retirees. The mix of goods sold by

25. Personal communication to CBO by Pete Manos of Giant Foods, Inc., May 20, 1996.

26. Cathy Riddle, "Patrons Value Their Shopping Benefit," *Military Market* (January 1994), p. 11.

27. Those numbers are CBO estimates derived from a statistical relationship (determined using regression analysis) between sales in U.S. commissaries and the number of retirees and active-duty personnel living different distances from the nearest commissary.

28. Food Marketing Institute, *Trends in the United States: Consumer Attitudes & the Supermarket, 1995* (Washington, D.C.: Food Marketing Institute, 1995), p. 25.

commissaries and the large quantity of goods that the average customer buys during each visit suggest that some shoppers make occasional trips to commissaries to stock up on nonperishable items, but rely on commercial stores for meat and produce.

Among civilian supermarkets, average annual sales, hours of operation, and the variety of goods and services continue to increase. Private retailers frequently combine grocery sales with other types of services, such as floral sales, photo finishing, banking, and pharmacies. Moreover, industry forecasts indicate that "hypermarkets" will expand their share of the market. In the future, those trends could accentuate existing differences between commissaries and supermarkets. Although commissaries in the United States typically have a larger sales volume than private stores, they offer fewer goods and services and shorter hours. DoD may need to combine its exchange and commissary businesses (one of the options discussed in Chapter 5) if it is to follow industry trends.

Table 2.
Characteristics of Commissaries and Civilian Supermarkets in the United States

	Average Commissary	Average Supermarket ^a
Operating Hours		
Hours open per week	48	131
Percentage of stores open on Sunday	40	99
Number of Items Stocked	9,600	22,000
Sales (Dollars) ^b		
Average customer transaction	64	19
Weekly sales per store	380,000	201,000
Weekly sales per employee	6,600	3,400

SOURCE: Congressional Budget Office based on data from the April 1995 annual report of *Progressive Grocer* magazine and the Defense Commissary Agency.

- a. Supermarket data are for chain stores with annual sales of more than \$2 million.
- b. Commissary sales are adjusted to reflect the commercial retail value of the goods sold.

Even if DoD makes such a change, however, its ability to offer shopping opportunities comparable with those of private stores will remain limited in places where the military population is small. Because commissaries serve a restricted group, DeCA operates some small stores in locations where the civilian population is able to support large, modern supermarkets. The small size of those stores limits their hours and the number of items they can stock. In many respects, those commissaries are similar to the corner grocery stores of the 1950s.

Operating Practices That Shift Costs to Patrons and Vendors. One way commissaries try to meet more of the demand for their services within a fixed appropriation is by shifting some costs to patrons. For example, in addition to its approximately 18,000 civil service employees, DeCA relies on about 10,000 baggers to place groceries in bags and deliver them to customers' cars. The agency designs commissaries to operate with two or three baggers for each checkout line so the cashiers (who are civil service personnel paid by DeCA) can sell goods as quickly as they can scan the prices. Although baggers work inside the store using carts provided by DeCA, they are treated as independent contractors rather than DeCA employees. As a result, the agency does not pay them wages or provide them with health and pension benefits.²⁹ Instead, baggers rely on tips from commissary customers, a practice that adds about 2 percent to the typical grocery bill.

DeCA also shifts costs to patrons when it contracts with private firms to provide labor-intensive services such as in-store bakeries, delis, and seafood counters. Under those arrangements, the contractors' labor costs are included in the price DeCA pays for the goods, which allows DeCA to pass those costs on to customers rather than paying them with appropriated funds.

Another way the agency controls its need for appropriations is by shifting costs to its vendors. For example, commissaries in the United States rely on private-sector distribution and warehousing networks to make store deliveries on a daily basis. The costs of that sys-

29. Although paying baggers directly might cost DeCA an additional \$100 million a year in appropriated funds, the current treatment of baggers (many of whom are members of minority groups) appears to be at odds with the government's efforts to set a high standard as an employer. See Ellen Sorokin, "Belvoir Baggers Unpaid, Sue U.S.," *The Fairfax Journal*, December 13, 1996, p. 1.

tem are paid by vendors rather than directly by DeCA. In addition, DeCA relies on vendors to provide a number of services—including some shelf stocking and ordering—for which civilian supermarkets use their own employees. Many vendors are ill equipped to provide those in-store services to DeCA's worldwide network of commissaries. As a result, specialized firms of military brokers have developed that are familiar with DoD practices and assist vendors in providing those services. The broker, working on behalf of the vendor, might contract with a shelf-stocking firm whose employees would actually work in the commissary. The extent to which this system of layered contractual relationships increases the total cost of operating stores, and the extent to which vendors pass those costs to DeCA and its patrons in the cost of goods, is unknown.

The high cost of civil service personnel also encourages DeCA to rely on its own contractors for services that vendors do not provide. The number of contract employees working in commissaries—baggers working for patrons, shelf stockers working for brokers who work for vendors, deli and bakery personnel working for contractors, and custodians and shelf stockers working under contract for DeCA—rivals or exceeds the number of civil service employees who are under the direct control of store managers.

Those differences between commercial supermarkets and commissaries explain why cost comparisons (such as the figures on weekly sales per employee in Table 2) do not reflect the relative efficiency of the two kinds of stores. There is no easy way to determine how much it would cost a private firm to operate large commissarylike stores with limited hours and services and subsidized prices. Those nonprice differences also explain why price comparisons and estimates of savings on grocery bills do not accurately measure the benefits that commissaries provide to patrons.

Assessing the Difference Between Customers' Financial Savings and Their Benefits

How much are commissaries' price subsidies worth to patrons once nonprice differences are taken into ac-

count? Standard economic theory recognizes that when shoppers have alternatives to buying a particular good or going to a particular store, price discounts do not provide a benefit that is equal to the shoppers' apparent financial savings. To estimate consumers' actual gain from a price discount, economists use demand curves that show how the quantity of goods that consumers will purchase varies with the price they face (see Box 2). A demand curve showing the quantity of goods that service members would buy from commissaries at different prices would reflect all of the nonprice differences between commissaries and private stores discussed above—including distance traveled, waiting lines, and the value to the customer of shopping in a uniquely military environment.

What does the demand curve for commissaries look like? And what does it imply for the relationship between financial savings and the actual benefits that customers receive from low commissary prices? A 1975 DoD study group, chaired by General Emmett Bowers, tried to answer those questions using survey data about commissary expenditures and perceptions of savings among active-duty personnel.³⁰ The demand curve that the study group estimated suggests that low commissary prices could provide a benefit to service members roughly equal to 80 percent of their financial savings.³¹

The reliability of that estimate is limited by the assumptions that the study group used and, to a lesser extent, by the age of the estimate. Nonetheless, it illustrates an important principle. The apparent financial savings to commissary patrons—based on comparisons between commissary and supermarket prices—provide at most a starting point from which to examine the actual value of commissaries to their customers.

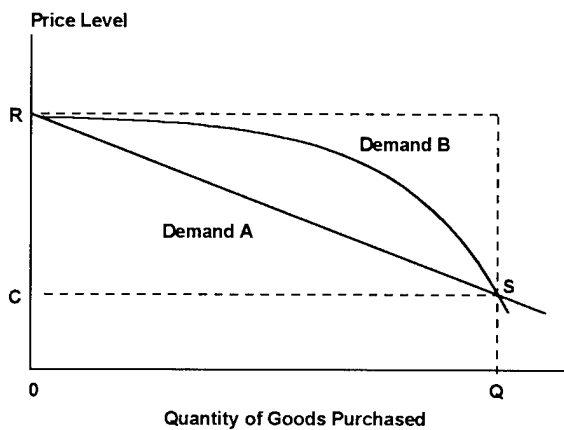
30. Department of Defense, Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs, *Study of Military Commissary Stores*, vols. 1 and 2 (May 1975).

31. That estimate is based on the demand curve for combined Army and Navy data. The curve estimated using Army data alone would indicate that benefits are a lower percentage of financial savings. See Department of Defense, *Study of Military Commissary Stores*, pp. 3-7 to 3-16.

Box 2.
**Using Demand Curves to Estimate the Gain
 to Consumers from a Price Discount**

To estimate the value of the benefit that consumers receive from a price discount, economists use demand curves, which show how the quantity of goods that consumers would buy varies based on price. In the illustrative figure below, the amount that shoppers purchase from commissaries depends on the price of a market basket of goods at a commissary. (To accurately reflect the actual gain from a price subsidy, the demand curve is drawn assuming that consumers receive cash payments to compensate them for the loss in purchasing power associated with different price levels.)

Illustrative Demand Curves for Commissaries



In the case of illustrative demand curve A, when the commissary price is at level C, consumers buy the quantity indicated by Q. If commissary sales fall to zero when commissary prices reach the commercial retail level (R), the financial savings that commissary patrons get from buying Q at price C rather than at the commercial price is indicated by the rectangle with an area equal to the product of the quantity and the price difference: $Q \times (R - C)$.

However, those apparent financial savings do not measure customers' actual benefit from the lower prices available in commissaries. Instead, their gain in welfare is indicated by the area of the triangle RCS. That equals the amount they would be willing to pay for Q (that is, the area under demand curve A from zero to Q) minus the amount they actually pay (represented by the rectangle with an area of $C \times Q$).

The difference between consumers' financial savings and their welfare gain depends on the position and shape

of the demand curve. In the case of demand curve A, no purchases are made from commissaries when commissary prices exceed commercial prices (R). In addition, the quantity purchased declines in a linear fashion as the level of commissary prices rises. In this special case—in which the demand curve is linear and commissary sales fall to zero when commissary prices equal commercial prices—patrons' gain from lower commissary prices equals half of their financial savings. That relationship is indicated by the fact that the area of triangle RCS is equal to one-half of $Q \times (R - C)$.

Very little is known about the demand curve for commissaries. The only available estimate is one published by a Defense Department study group (led by General Emmett Bowers) in 1975. That study group tried to estimate the demand curve using cross-sectional data relating the amount spent by active-duty service members in commissaries to their perceptions of commissary savings. To derive a demand curve from those data, the group assumed that service members' perceived savings would decline as actual commissary prices rose and that patrons would cease shopping in commissaries when their perceived savings fell to zero.

The demand curve that the study group estimated—shown in the figure as demand curve B—suggests that patrons' benefit from commissary sales averages about 80 percent of their financial savings. The reliability of that estimate is limited because of its age and because the wide variation in patrons' price perceptions in the data used by the study group did not reflect actual price differences. Nonetheless, the bowed shape of that estimated demand curve appears very plausible. Such a shape suggests that small increases in commissary prices (increases that still left them much lower than prices in civilian supermarkets) would have a modest effect on sales, but sales would fall off sharply if commissary prices approached commercial levels.

Can some reasonable bounds be put on the relationship between patrons' financial savings and their welfare gain? In the United States—where low prices are, according to the director of the Defense Commissary Agency, "what makes the commissary special"—it might be reasonable to assume that commissary sales would fall to zero as the price differential disappeared. If that assumption is combined with the bowed shape estimated by the Bowers study, the welfare gain to patrons of U.S. commissaries will be less than their financial savings but greater than half of those savings.

Comparing Commissary Benefits with Costs

The costs of the commissary system can be viewed from different perspectives. A cost analysis that fo-

cused on DoD's budget would look only at the Congressional appropriation for commissaries. A cost-benefit analysis concerned with overall economic costs, however, would also take into account forgone state and local taxes (taxes that would have been paid had commissary patrons shopped in commercial stores) and the return on capital forgone because federal assets were

Box 3.

Economic Costs of DoD's Retail Activities Versus Budgetary Costs

The costs and benefits of retail activities operated by the Department of Defense (DoD) can be viewed from different perspectives depending on the question being asked. The cost-benefit estimates in this study are designed to answer two related questions: Do the benefits received by patrons of commissaries and exchanges outweigh the social costs of those activities? And is it cost-effective for society to use retail activities rather than cash compensation to attract and retain a high-quality military force? The answers to both questions start with an evaluation of the costs of DoD stores from a broad social perspective rather than a more narrow budgetary perspective.

In looking at the first question, the Congressional Budget Office used the resource subsidy received by DoD retail activities as a measure of the cost of the system. The resource subsidy identifies the extent to which the amount that patrons pay for goods understates the value of the resources used in providing those goods. As such, it measures the costs that the system imposes on the rest of U.S. society. To some extent, the resource subsidy can be characterized as taxpayers' costs; for example, the sales and excise taxes that state and local governments do not collect on commissary and exchange sales might be passed on to their citizens through higher tax rates on other goods. Yet it is also possible that, rather than raise taxes, state and local governments might choose to provide fewer services. Because the incidence of those resource costs is unknown, they might best be interpreted as a cost to U.S. society rather than to U.S. taxpayers. Also, because the focus of this analysis is the costs to U.S. society, costs that appear to be borne outside the United States (such as forgone value-added taxes in other countries) are not considered.

Most of the resource subsidy passes to patrons of DoD stores in the form of low prices. Part of the value of the subsidy may be lost, however, because govern-

ment-run stores may use resources less efficiently than businesses operating in competitive markets, and because the subsidy may encourage patrons to consume goods even if the goods are worth less to patrons than they cost to provide. The difference between the subsidy cost and the value of benefits to patrons is called the deadweight loss. A positive deadweight loss would indicate (in response to the first question) that the commissary and exchange systems' benefits to patrons are outweighed by their costs to society.

By itself, however, the amount of the deadweight loss does not indicate whether DoD stores are a cost-effective alternative to cash compensation (the second question). A retail system in which all sales and benefits went to store employees could have the same deadweight loss as a system in which they all went to active-duty personnel. For DoD stores to be considered a cost-effective alternative to cash compensation, the deadweight loss associated with using them to achieve a high-quality force must be less than the deadweight loss of achieving the same goal through cash compensation. Thus, the answer to the second question depends on three factors: the costs of the system from a broad social perspective, the total value of the benefits it provides to patrons, and the impact that those benefits have on the military's ability to retain the high-quality personnel it needs.

Not all perspectives appear to answer questions of general policy interest. One perspective—frequently adopted by DoD—considers only costs that appear directly in the defense budget. At the same time, however, it takes into account all of the benefits received by individual patrons (regardless of the degree to which those benefits contribute to maintaining a high-quality military force). That perspective cannot answer questions about the effects of DoD's activities on the efficiency of the U.S. economy or on the budgetary or social costs of maintaining a high-quality force.

invested in commissaries rather than in other, equally risky investments. (See Box 3 for a discussion of the distinction between economic and budgetary costs.)

Taking a broad economic perspective, CBO estimates that the commissary system receives an annual subsidy of approximately \$1.7 billion (see Table 3). Appropriated funds provide roughly two-thirds of that subsidy. Forgone taxes and the forgone return on capital account for the other third.

Taxes and the return on capital are important elements in the cost of goods and services in the U.S. economy. Even though forgone taxes and the forgone return on capital are not evident in the defense or federal budget, omitting them from a cost-benefit analysis would understate the full cost of providing commissaries. From the perspective of DoD's budget (although not from a broad economic perspective), one difficulty of a recent Defense Science Board proposal to have contractors provide commissaries at military bases is that those economic costs—which are hidden as long as the stores are operated by the government—would become visible if a contractor took over.

To calculate the forgone return on capital, CBO applied a 15 percent rate of return (an estimate of the average before-tax return on equity in the U.S. economy) to the estimated net value of commissary assets.³² That forgone return reflects what taxpayers might demand for investing in other assets with a comparable level of risk.³³ CBO estimated the net value of DoD's commissary assets at \$1.5 billion, which reflects (among other assets and liabilities) \$450 million in inventories, approximately \$1.7 billion in buildings and equipment, and almost \$1 billion in accounts payable.

32. See Appendix B for more details on how CBO estimated the net asset value, the forgone return on capital, and forgone taxes. Both the net asset value and the forgone rate of return are uncertain, and the numbers in Table 3 can be interpreted as midrange estimates. Despite their uncertainty, however, those estimates provide useful insights into the long-run economic costs of commissaries.

33. Although it is appropriate in this cost-benefit analysis to use a before-tax return on capital in the private sector to measure the economic cost of commissaries to taxpayers, a Treasury borrowing rate would measure the direct budgetary consequences if the government chose not to invest in commissaries. See Rudolph Penner, "Aspects of Budget Accounting and Scoring That Distort the Decision Process" (draft, Barents Group, Washington, D.C., November 15, 1996).

CBO estimated forgone sales taxes using a 5 percent average tax rate.³⁴

Costs and Benefits in the United States

How much does a dollar in economic subsidies to U.S. commissaries provide in terms of patrons' benefits, and what does that imply for the cost-effectiveness of commissaries as a form of compensation?

CBO estimates that the roughly \$1.2 billion economic subsidy for commissaries in the United States is equal to about 24 percent of commissary sales (see Table 3). And based on CBO's estimate that commissary patrons pay 20 percent less than commercial retail prices, patrons' financial savings also equal about 24 percent of commissary sales.³⁵ Comparing those two figures, however, may be misleading. Such a comparison takes into account the mix of goods sold in commissaries (primarily nonperishable brand-name items), but it does not take into account other differences between commissaries and civilian supermarkets that affect patrons' benefits, such as the value of an all-military environment, the number of hours that stores are open, the range of merchandise, the waiting time at checkout lines, and the accessibility of stores.

The principal advantage of U.S. commissaries over commercial stores is low prices rather than good service or selection of merchandise. As a result, financial savings are likely to overstate the actual benefits that patrons gain from commissary shopping in the United States. If the actual benefits are worth 80 percent of the financial savings (as suggested by the estimates in the Bowers study), U.S. commissaries convert about \$1,200 million in annual subsidy costs into benefits worth \$900 million to patrons (see Table 4). If instead the value of benefits is half of the financial savings (a result consistent with the linear demand curve in Box 2), \$1,200 million in subsidy costs yields \$600 million in benefits.

34. That sales tax rate is based on Defense Commissary Agency, *1996 Market Basket Comparison Study*. The study found that, on average, state and local sales taxes just offset the 5 percent commissary surcharge.

35. Patrons' savings are greater expressed as a percentage of commissary prices than of commercial retail prices because commissary prices are lower.

Table 3.
Annual Economic Subsidy of DoD Commissaries (In millions of 1995 dollars)

	U.S. Stores	Overseas Stores	Total
Business Income			
Commissary Surcharge (Sales receipts minus the wholesale cost of goods sold)	230	40	270
Other Business Income ^a	<u>30</u>	<u>10</u>	<u>40</u>
Total	260	50	310
Operating Costs			
Costs Paid by DoD			
Paid from appropriations or from other business income	670	400	1,070
Paid from surcharges ^b	<u>270</u>	<u>90</u>	<u>360</u>
Subtotal	940	490	1,430
Costs Not Paid by DoD			
Forgone return on capital	160	60	220
Forgone sales taxes	230	0	230
Forgone excise taxes	<u>100</u>	<u>0</u>	<u>100</u>
Subtotal	490	60	550
Total	1,430	550	1,980
Economic Subsidy			
Total Subsidy (Total operating costs minus business income)	1,170	500	1,670
Memorandum:			
Wholesale Cost of Goods Sold	4,580	860	5,440
Sales Receipts (Wholesale cost plus 5 percent surcharge)	4,810	900	5,710
Subsidy as a Percentage of Sales Receipts	24	56	29
Subsidy Provided by DoD (Operating costs paid by DoD minus business income)	680	440	1,120

SOURCE: Congressional Budget Office based on 1995 data provided by the Defense Commissary Agency.

NOTES: Business income and operating costs exclude the wholesale cost of goods sold.

DoD = Department of Defense.

a. Includes payments to DoD from vendors for handling coupons and other reimbursements.

b. Includes the cost of capital measured on an accrual basis (that is, it includes CBO's estimate of depreciation and excludes current investment).

Table 4.
Annual Costs and Benefits of Commissaries in the United States Under Varying Assumptions
(In millions of 1995 dollars)

Assumptions About Patrons' Benefits Relative to Financial Savings ^a	Subsidy Cost	Value of Benefits			Deadweight Loss (Subsidy minus total benefits)
		Active-Duty Personnel	Retirees and Others	Total	
Benefits Equal 50 Percent of Savings	1,200	200	400	600	600
Benefits Equal 80 Percent of Savings	1,200	300	600	900	300
Benefits Equal 100 Percent of Savings	1,200	400	700	1,100	100

SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTE: The numbers in this table are illustrative estimates based on the 1995 figures in Table 3.

a. CBO calculated patrons' financial savings based on a 20 percent price difference between commissaries and commercial supermarkets.

The difference between the subsidy cost and the total value of benefits to patrons is the deadweight loss from commissary operations. That loss is a cost to society that is not offset by benefits to customers or other people. It reflects any inefficiency in the government's use of resources, as well as the loss caused by price subsidies that distort consumption choices.

The size of the deadweight loss does not by itself indicate whether commissaries are a cost-effective form of compensation. A system that targets benefits to active-duty personnel making career decisions is more likely to be effective than one that primarily benefits store employees or military retirees. From a social perspective, commissaries might be considered a cost-effective form of compensation if the deadweight loss incurred in using them to maintain a high-quality force was no greater than the deadweight loss that would be incurred in using cash compensation to achieve the same goal.

One of the weaknesses of commissaries as a form of compensation is that it is difficult to estimate either the deadweight loss they cause or their impact on DoD's ability to retain personnel. A possible approach is to assume that the value of commissary benefits now going to active-duty personnel equals the amount of cash compensation that DoD would have to pay to offset the effects on retention of raising commissary prices to

commercial levels.³⁶ Using that approach, and assuming that the value of commissary benefits equals 80 percent of the financial savings, suggests that providing \$300 million in annual compensation benefits to active-duty personnel through commissaries costs society approximately \$600 million (the \$300 million in active-duty benefits plus the \$300 million in deadweight loss shown in Table 4). Although very uncertain, those estimates are consistent with the economic arguments presented earlier, which indicate that (at least in the United States) government-operated stores with subsidized prices are not a cost-effective alternative to cash.

Costs and Benefits Overseas

Outside the United States, the cost of commissary subsidies equals more than half of what patrons spend in commissaries (see Table 3). Although overseas stores account for only 16 percent of total commissary sales, they account for 30 percent of the total economic subsidy cost and 34 percent of the costs that actually appear in DoD's budget. Overseas, DeCA spends an average of 57 cents in appropriated and surcharge funds to sell goods that have a wholesale value of \$1 (a figure

36. On the one hand, less cash would be required if the cash payments were targeted toward pay grades and skills in which DoD had retention problems. On the other hand, the amount of cash would be greater to the extent that the loss of future retiree benefits affected retention decisions.

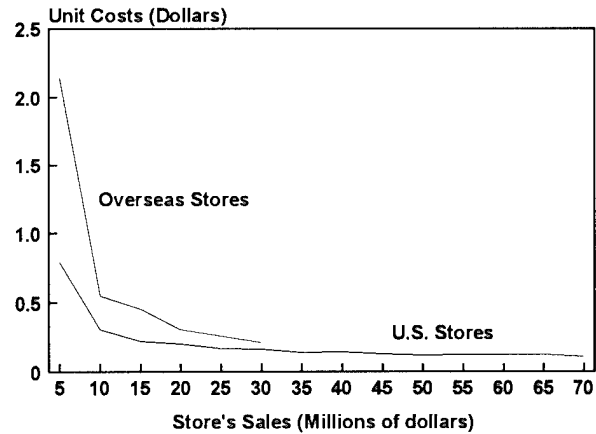
known as the unit cost). In U.S. commissaries, the equivalent figure is 21 cents. Despite those high costs, the benefits that overseas commissaries provide may make them a much more effective form of compensation than U.S. commissaries.³⁷

Most of the higher cost of overseas sales results from two factors: transportation costs and the small size of overseas stores.³⁸ The cost of transportation—which includes shipping goods from the United States to distribution centers overseas and then transporting them to individual stores—totaled about \$175 million in 1995 and accounted for more than half of the difference between unit costs for U.S. and overseas stores. (Actual transportation costs were higher than \$175 million because commissaries in Europe buy soda from DoD exchanges, so the cost of transporting the soda to Europe appears in the appropriated-fund costs of the exchanges.)

DeCA's transportation costs are large in part because it is required to sell U.S. products (with the exception of highly perishable items and a limited number of specialty goods). Another reason is that DeCA uses the military transportation system. The agency estimates that it could save \$30 million a year by booking its shipments directly with U.S.-flag commercial ships, rather than relying on DoD to book the shipments.³⁹

The size of overseas stores also plays a significant role. In both the United States and abroad, small commissaries have much higher unit costs than larger stores (see Figure 4). But nearly half of DeCA's overseas stores are small ones with sales of less than \$5 million

Figure 4.
Unit Costs for U.S. and Overseas
Commissaries, by Size of Store, 1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTES: CBO grouped stores based on 1995 sales, using intervals of \$5 million. Groups that included only one store were excluded.

Unit costs are operating costs per dollar of goods sold. They reflect the average value for each group of stores. Those costs do not include investment, depreciation, or forgone taxes. The value of goods sold is measured by the wholesale cost.

37. Although the benefits of having overseas commissaries may far outweigh their costs, a system of overseas commissaries without subsidized prices (and with correspondingly higher COLAs) might be even more cost-effective than the current system.

38. The average cost per work-year is the same (\$31,000) in U.S. and overseas commissaries. Although overseas stores report a higher ratio of labor costs to sales than U.S. stores do, that appears to be the result of smaller stores and less reliance on contractors.

39. The 1996 defense authorization act required DoD to allow DeCA to book its shipments without using DoD's transportation system. Because exchange and commissary goods represent a large portion of that system's workload, however, transportation charges for other DoD customers could rise if DeCA stopped using the system. One solution would be for DoD to offer DeCA the same rates that DeCA would pay if it did not use the DoD system and to attribute the remainder of the cost to DoD's mobilization requirements.

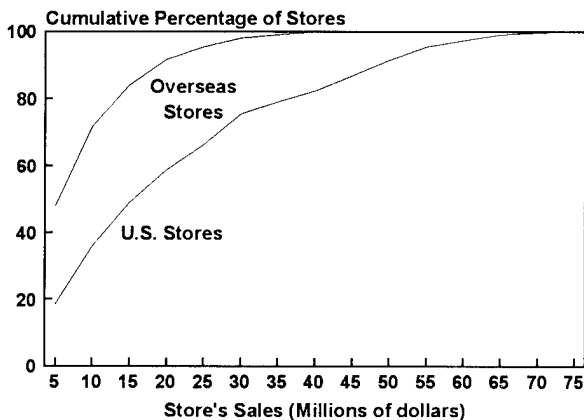
a year, compared with less than 20 percent of its U.S. stores (see Figure 5). In overseas commissaries of that size, DeCA spends more than \$2 in operating costs for every dollar spent by patrons. Based on an estimate of how much it would cost to operate stores in the United States that were the same size as those overseas, store size appears to account for roughly 30 percent of the difference between U.S. and overseas unit costs. (See Appendix C for a detailed analysis of the relationship between sales and costs in U.S. commissaries.)

Service members living overseas place a high value on commissaries as a source of U.S. brand-name goods and affordable groceries. Nonetheless, the high cost of those stores, together with the limited selection that smaller ones can offer, raises questions about whether DoD could support the quality of life of families overseas in less costly and more effective ways. For example, higher COLAs, coupled with higher prices for commissary goods, might free overseas personnel in urban

areas to shop in local stores that can provide a wider range of merchandise.

The Department of Defense and the Congress could also take steps to reduce the cost of providing commissaries overseas—for example, by allowing DeCA to purchase more local goods (including U.S. brand-name soft drinks that are bottled overseas). Other options that could prove effective in lowering the costs of small commissaries both at home and abroad include allowing DeCA to use non-civil-service labor or to contract out the operation of entire stores. Currently, DeCA's store managers—facing a labor force composed of civil service personnel, baggers working for patrons, contractors working for DeCA, and contractors working for brokers working for vendors—lack the ability to move workers among different tasks. The agency's reliance on multiple contractors in its stores may put it at a particular disadvantage in running small stores. Flexibility in the use of labor may be one reason that, in the private sector, independent grocers are able to operate small supermarkets with gross margins similar to those of the large supermarket chains.

Figure 5.
Distribution of U.S. and Overseas Commissaries, by Size of Store, 1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTE: CBO grouped stores based on 1995 sales, using intervals of \$5 million.

Trends in Commissary Appropriations

Although appropriated funds do not identify the full economic costs of the commissary system, they are among the most visible and controversial commissary costs. Appropriations for the system fell by 12 percent between 1993 and 1995. DoD expects that more reductions will be possible in the future if DeCA's status as a performance-based organization encourages the Congress and the executive branch to eliminate some of the legal and policy constraints facing DeCA's managers.

Despite the recent cuts, appropriations remain high by historical standards. CBO estimates that appropriated-fund costs today are comparable with those of the mid-1980s.⁴⁰ Commissary sales, by contrast, are about 18 percent below the levels seen in the 1980s. As a result, appropriated-fund costs relative to sales have shown an upward trend, rising from 15 percent of sales in 1974 to 16 percent in 1986 and 19 percent in 1995.

At the end of the Cold War, DeCA's sales and appropriations did not decline proportionally with reductions in the active-duty force or the overall DoD budget. Since retirees account for most U.S. commissary sales, that is not surprising. The growth in the ratio of costs to sales is surprising, however, given that the share of commissary sales made overseas—where costs are much higher than in the United States—has declined. Some of the growth might be attributed to improved commissary services and higher, more uniform standards resulting from the consolidation of commissaries under a single agency. Part of the increase, however, results from the difficulty DeCA has had in adjusting to a smaller force and lower sales.

Despite efforts by DoD to close and consolidate bases in the United States, average annual sales per U.S. commissary are lower than they were before the drawdown. In U.S. commissaries, average sales fell from \$23 million to \$20 million per store between 1986 and 1995. One reason is that under current DoD policy, some commissaries at bases that have been closed

40. That is the case even after adjusting for changes in accounting that resulted when the services' separate commissary systems were consolidated in 1992 under the Defense Commissary Agency.

by the base realignment and closure process continue operating to serve retirees, reservists, and the few active-duty personnel who remain nearby. This year, DeCA expects to continue operating 13 commissaries at installations that are closed or designated for closure. Overseas, commissary closures have more than kept pace with declines in sales; average annual sales in overseas stores rose from \$7 million to \$8 million between 1986 and 1995.

As Figure 4 showed, a smaller volume of sales per store means a higher cost to sell a dollar of groceries. Based on the statistical relationship between sales in U.S. commissaries and the cost of selling a dollar of goods in those stores, a uniform 10 percent decline in sales in all U.S. commissaries would lead to an 8 percent decline in total costs (see Appendix C).⁴¹

If DoD reversed the trend toward lower average sales by closing small, expensive stores, the commissary appropriation might fall at the same time that the ratio of commissary benefits to costs rose. If, however, DoD reversed the trend toward smaller stores by encouraging store managers to increase sales, the total appropriation required to support commissaries would tend to increase. Under the current system, the Congress and DoD face difficult trade-offs among three conflicting goals: being fair to those retirees who live in places now served by small, inefficient commissaries; making commissaries a more cost-effective form of compensation for active-duty personnel; and reducing appropriated funds.

Issues Raised by the Commissary System

The commissary benefit is highly valued by senior active-duty and retired service members in the United States and overseas. Those members may value commissaries both as a source of low-cost goods and as a traditional feature of military life. Yet CBO's review of the costs and benefits of the commissary system indicates that, at least in the United States, commissaries

are not a cost-effective alternative to cash compensation for military personnel. Commissary managers operate under a variety of constraints that make it difficult for them to allocate resources efficiently. Moreover, because commissary benefits are difficult to target and involve price subsidies, they would not be a cost-effective way to compensate service members even if the stores were run at the lowest possible cost.

DoD's approach to estimating the benefits of commissaries overstates the financial savings that patrons receive, neglects the difference between financial savings and patrons' actual benefits, and fails to account for the department's inability to target this noncash benefit effectively. At the same time, DoD understates the economic cost of commissaries by not taking into account forgone state and local taxes or the forgone return on capital.

Rather than attempting to justify commissaries as a cost-effective form of compensation, a more credible DoD policy might emphasize their importance as a traditional benefit and as a symbol of DoD's commitment to the well-being of active-duty personnel, retirees, and their families. Those are potentially important concerns. Any fundamental change in the current system could disrupt the morale of active-duty members and impose costs on retirees who made decisions about civilian jobs and housing based on the availability of commissary benefits.

Perhaps because of those concerns, the department's current plan is to maintain the commissary system but reduce the level of appropriations necessary to support it. The Clinton Administration has designated the Defense Commissary Agency a performance-based organization under its "reinventing government" initiative. As a PBO, DeCA plans to reduce costs by getting waivers and legislation that will free it from many civil service and federal acquisition rules.

Before evaluating both that plan and possible alternatives to it, this study looks at DoD's nonappropriated-fund activities in general and the military exchange system in particular. Nonappropriated-fund activities are similar to PBOs in their freedom from many of the constraints imposed on federal agencies. A review of how such activities operate, and of their costs and benefits from a taxpayer's perspective, offers insight into the potential advantages and disadvantages of freeing DeCA from those constraints.

41. The actual impact on costs of a decline in store size will depend on whether the decline is driven by changes in large stores (which may still be large enough to maintain economies of scale) or in smaller stores (where declines in sales are typically accompanied by sharp increases in costs per dollar of goods sold).

An Overview of DoD's Nonappropriated-Fund Activities

Unlike the commissary system, most Department of Defense programs that sell goods and services to current and former service members are nonappropriated-fund (NAF) activities. That means the money they receive from patrons is controlled by so-called nonappropriated-fund instrumentalities (NAFIs) of the federal government. NAFIs are federal financial entities, but their receipts and expenditures are not reflected in the federal budget. They can spend funds without a Congressional authorization or appropriation and without resulting in federal budgetary outlays.

DoD is not the only federal agency to use NAFIs. The Department of Veterans Affairs, the Coast Guard, and the State Department all operate NAFIs for the benefit of their employees. DoD's NAFI program, however, is by far the largest.

NAFIs within the Department of Defense collected and spent \$11 billion in nonappropriated funds in 1995. About \$7 billion of that went to purchase goods sold by NAF activities; the other \$4 billion paid most of the operating costs of the activities. Those operating costs include the salaries of 160,000 NAF employees—federal workers who, because they are paid with nonappropriated funds, are not part of the civil service.

The Scope of NAF Activities Within DoD

The military exchanges—which provide general retail stores, specialty stores, and consumer services at mili-

tary installations—are among DoD's largest nonappropriated-fund activities. But the department's morale, welfare, and recreation programs for current and former service members include many other NAF activities. Among them are libraries, fitness centers, child care centers, clubs for officers and enlisted personnel, restaurants, hotels, golf courses, and bowling alleys.

NAF activities rely on a mix of appropriated funds, which are controlled through the budget process, and nonappropriated funds, which are controlled by NAFIs. DoD divides its NAF programs into three groups based in part on the extent to which they use appropriated funds (see Table 5):

- o Category A activities are ones that contribute most directly to the ability of service members to perform their jobs (such as fitness centers and libraries). Consistent with guidance from the MWR Panel of the House Committee on National Security, DoD policy calls for Category A activities to rely primarily on appropriated funds. Like all NAF activities, however, they collect and spend nonappropriated funds as well.
- o Category B activities are ones that provide basic community support (such as child care centers, youth centers, and arts and crafts programs). They are activities that might receive some public funding in civilian communities. DoD policy is for them to use a mix of nonappropriated and appropriated funds. Child care centers account for a significant portion of Category B expenses and employment.

Table 5.
Nonappropriated-Fund Activities Within DoD, 1995 (In millions of dollars)

	MWR Activities			Total	Exchanges	Total NAF Activities	Commercial-Style Activities (Category C plus exchanges)
	Category A (Mission-sustaining) ^a	Category B (Community support) ^b	Category C (Revenue-generating) ^c				
Operating Income							
Receipts from Patrons Minus the Wholesale Cost of Goods Sold	30	300	1,400	1,730	2,060	3,790	3,460
Other NAF Income ^d	<u>0</u>	<u>10</u>	<u>110</u>	<u>120</u>	<u>390</u>	<u>510</u>	<u>500</u>
Total	30	310	1,510	1,850	2,450	4,300	3,960
DoD's Operating Costs							
Paid from Appropriated Funds	610	500	140	1,250	370	1,620	510
Paid from Nonappropriated Funds	<u>150</u>	<u>410</u>	<u>1,500</u>	<u>2,060</u>	<u>2,130</u>	<u>4,190</u>	<u>3,630</u>
Total	760	910	1,640	3,310	2,500	5,810	4,140
DoD's Operating Results							
Operating Result (Operating income minus DoD's operating costs)	-730	-600	-130	-1,460	-50	-1,510	-180
Memorandum:							
Percentage of Operating Costs Paid by Patrons	4	33	85	52	82	65	84
Total NAF Receipts ^e	40	350	1,920	2,310	8,440	10,750	10,360
Number of Employees ^f							
Appropriated-fund employees	6,200	8,300	1,800	16,300	300	16,600	2,100
Nonappropriated-fund employees	<u>4,300</u>	<u>19,300</u>	<u>57,800</u>	<u>81,400</u>	<u>78,700</u>	<u>160,100</u>	<u>136,500</u>
Total	10,500	27,600	59,600	97,700	79,000	176,700	138,600

SOURCE: Congressional Budget Office based on the Department of Defense's 7000.12 reports for fiscal year 1995 and on 1995 financial reports from the Army and Air Force Exchange Service, the Navy Exchange Command, and Marine Corps exchanges.

NOTES: DoD = Department of Defense; MWR = morale, welfare, and recreation; NAF = nonappropriated fund.

Operating income and operating costs exclude the wholesale cost of goods sold. Data are adjusted to exclude double-counting: NAF receipts are assigned only to the category that generated the receipts, even if they were subsequently transferred to another category as a dividend or grant. Overhead costs were allocated among activities in proportion to nonoverhead costs.

- a. Includes libraries and fitness centers.
- b. Includes child care centers and arts and crafts programs.
- c. Includes golf courses, bowling alleys, and clubs.
- d. Includes interest income and fees paid by concessionaires.
- e. Total receipts from patrons (including the cost of goods sold) and other NAF income.
- f. Includes part-time employees.

- o Category C activities include commercial-style retail and recreational activities similar to those provided by the private sector in civilian communities. They include golf courses, clubs for officers and enlisted personnel, theaters, bowling alleys, hotels, and slot machines.¹ DoD limits most appropriated-fund support for those activities to overseas and isolated U.S. locations. The department's commercial-style NAF activities (the military exchanges plus all other Category C programs) account for 85 percent of all NAF employees and 92 percent of all NAF operating income.

Characteristics of NAFIs

A NAFI is essentially a mechanism for handling the money that patrons pay to nonappropriated-fund activities. DoD operates several hundred NAFIs of varying sizes. For instance, each Marine Corps base has a single NAFI—under the control of the base commander—to handle all of the NAF funds from its morale, welfare, and recreation activities and its exchange operations. All Army MWR activities in Europe are under a single NAFI. The Navy Exchange Command is a single NAFI, as is the combined Army and Air Force Exchange Service.

NAFIs share many of the same characteristics as DoD revolving funds and government corporations. First, they receive payments for goods and services from customers and use those receipts to produce new goods and services. Second, like revolving funds, NAFIs can lose or make money in any year but must maintain a positive level of assets. Third, like many government corporations, NAFIs are free from some of the laws that regulate government agencies. (For example, NAF employees have different retirement and health programs than members of the civil service, and purchases made with NAF dollars are not subject to federal acquisition regulations or to the Competition in Contracting Act.) Fourth, unlike federal agencies but like many government corporations, NAFIs can hold

cash balances on which they collect interest. And fifth, some NAFIs—including the military exchanges—borrow money in private capital markets.

NAFIs do not operate exactly like private firms, however. They are subject to the Services Contract Act, which requires contractors working for NAFIs to pay prevailing wage rates determined by the Department of Labor. NAFIs are also subject to DoD policies that, in many cases, require them to abide by the same rules that defense agencies are legally bound to follow.

DoD's NAFIs differ from revolving funds and most government corporations in at least four important respects. One difference is that funds from widely different activities can flow into a single NAFI, and funds paid to one NAFI can be transferred to another (generating expenses for the first NAFI and income for the other) without any Congressional action. A second but related difference is that DoD does not set prices within each NAF activity and NAFI in order to break even. Instead, it intends for some NAF activities (such as exchanges and overseas slot machines) to generate net earnings to support other activities.

A third difference is that, unlike revolving funds, NAFIs do not consolidate the resources flowing into a businesslike activity in a single, visible account. The appropriated and nonappropriated resources used to support NAF activities are rarely viewed or managed as a whole. In addition, employees working in a single activity, such as a child care center, are subject to different labor practices depending on whether they are NAF employees paid with NAF receipts or civil servants paid with appropriated funds. Supplies for DoD child care centers that are purchased with appropriated funds are subject to the Competition in Contracting Act, whereas those purchased with nonappropriated funds are not.

A fourth difference is that, unlike activities funded through DoD revolving funds, NAF activities do not reimburse military bases for the support services that the bases provide. Those services—which may include exterior maintenance of buildings, police and fire protection, and snow removal—are provided by the host installations using funds appropriated by the Congress for base operations. In addition, NAF morale, welfare, and recreation programs sometimes "borrow" military personnel from tactical units.

1. Although military exchanges are technically a Category C morale, welfare, and recreation program, the Navy Exchange Command and the Army and Air Force Exchange Service are managed separately from the Category C programs that are recreational in nature. In this study, Category C activities refer only to the recreational programs and exclude the exchanges, unless otherwise indicated.

The Problem of Oversight and Control

The features of NAFs described above make it difficult for the Congress and senior DoD managers to determine—much less control—how much each type of NAF activity relies on money that it generates from its users and how much it relies on federal resources (whether appropriated funds or transfers of nonappropriated funds).

Some members of Congress have questioned recent instances of NAF spending, including the Army's purchase of the "Shades of Green" hotel at Walt Disney World and the Air Force's decision to build a third golf course at Andrews Air Force Base in Maryland. In response to that concern, NAF managers argued that those projects used "no taxpayer dollars," only NAF dollars.²

Of course, DoD's ability to make such expenditures is limited by its NAF earnings (which are the receipts of NAF activities minus the NAF costs incurred in generating them). But appropriations, and costs paid with appropriated funds, do not appear in statements of NAF income and expenses. As a result, even activities that depend heavily on appropriations can show NAF earnings. In 1995, exchanges and overseas slot machines generated approximately \$450 million in NAF earnings—nonappropriated funds that were not needed to operate those activities on a revolving basis, but that DoD could spend to make capital investments or to subsidize other NAF activities.

The extent to which federal resources subsidize an MWR activity depends on how much of its total costs are covered by appropriations or by transfers of nonappropriated funds from other activities, rather than by its own patrons. That information is not readily available. In the past, DoD and Congressional overseers have examined the mix of appropriated and nonappropriated funds spent within Categories A, B, and C without considering the original source of the nonappropriated funds. In the Air Force and Navy, transfers of nonappropriated funds from one activity to another

are counted as income to the receiving category (and expenses to the other), even though from a resource perspective such transfers are as much a federal subsidy to the receiving activity as the use of appropriated funds.³

Army data (which are much clearer than those of the other services) indicate that fees from patrons pay about 6 percent of the total cost of the Army's Category A activities and 29 percent of the cost of Category B activities. After adjusting Air Force and Navy data to eliminate double-counting and allocate overhead among the three categories, CBO developed similar estimates for DoD as a whole (see Table 5). Following the Army's approach, those estimates assign NAF receipts and expenses to the activities that generate them: in other words, transfers do not count as income to the receiving activity or as an expense to the activity that provides the transfer. In addition, CBO added appropriated and nonappropriated costs to give a complete picture of operating expenses.

CBO's approach indicates that only 4 percent of the costs of Category A activities are paid by their patrons rather than by appropriations or by transfers of nonappropriated funds. Thus, consistent with the spirit of DoD and Congressional guidance, Category A activities are financed almost entirely through subsidies rather than through fees from customers. However, DoD's own financial reports, which do not distinguish between NAF costs paid directly by patrons and those paid by subsidies, do not reveal that.

The situation differs for Category C activities, such as clubs, bowling alleys, and golf courses. Congressional guidance calls for very little, if any, appropriated-fund support for those activities—and, indeed, CBO's estimates indicate that only 9 percent of their operating costs are paid with appropriated funds. Nonetheless, many Category C activities are being subsidized with transfers of federal resources. For example, if overhead is allocated on the basis of total expenditures, losses by Army clubs in 1995 absorbed almost \$60 million in NAF earnings that were generated by other commercial-style activities. (That nonappropri-

2. Katherine Peters, "Army Plans for Resort May Stall," *Air Force Times*, November 6, 1995.

3. In addition, Navy and Air Force NAF financial summaries allocate a disproportionate share of the overhead costs of morale, welfare, and recreation activities to Category A. That practice further complicates the task of identifying the costs of each category and helps ensure that the NAF receipts of Category C activities cover reported expenses.

ated-fund subsidy accounted for over one-fourth of the clubs' costs.) In fact, most of the \$180 million in discretionary income that slot machines and exchange earnings provided to Army MWR activities in 1995 was absorbed by Category C activities.

As long as DoD is free to transfer nonappropriated funds between activities, Congressional restrictions on the use of appropriated funds to support Category C activities are not very meaningful. DoD can satisfy the restrictions by using its nonappropriated-fund earnings to support Category C activities and reducing the amount of nonappropriated funds available for Category A and B activities, which will then require larger Congressional appropriations.

The Legal Status of NAFIs

DoD's NAFIs predate current budgetary concepts and ideas about government corporations. The Army traces the roots of its NAFIs to the canteens (cooperative social clubs and trading establishments) that base commanders encouraged in the mid-1800s. The early, modest, and informal origin of NAFIs may explain why—despite their current size and importance within DoD—there is no statute that creates nonappropriated-fund instrumentalities and spells out their rights and obligations.

Today's NAFIs are big businesses and may warrant more formal treatment. In 1982, Congressman Dan Daniel, then Chairman of the MWR Panel of the House Armed Services Committee, noted, "What we have today is a \$10 billion governmental entity which employs almost a quarter of a million people in 12,000 activities worldwide . . . without legislative authority."⁴

DoD attempted to clarify the legal basis for NAFIs in the mid-1970s, after Congressional hearings exposed serious graft and mismanagement in the operation of overseas clubs and exchanges. The department conducted a comprehensive review of the legal and historical background of its NAFIs, which it defined as wholly

owned instrumentalities of the federal government under the jurisdiction of the armed forces. In the end, DoD concluded that the authority for its NAFIs derived primarily from departmental regulations, although it noted that "properly authorized and promulgated regulations of the Department of Defense and its components have the force and effect of law."⁵ The study found that in the absence of any authorizing statute, the legal rights of NAFIs had been spelled out on an ad hoc basis by federal courts as questions arose.

The Supreme Court made one of the most important of those legal rulings in 1942 when it found that "post exchanges . . . are arms of the Government. They are integral parts of the War Department, share in fulfilling the duties entrusted to it, and partake of whatever immunities it may have under the constitution and federal statutes."⁶ That ruling clearly established the immunity of exchanges from state and local taxes. Over time, Congressional actions have also reinforced the federal status of NAFIs, their employees, and their assets. Not only has the Congress appropriated money to support the exchange system, but it has on some occasions directed that funds from disbanded exchanges be turned over to the Treasury.⁷

Issues Raised by the Status of NAFIs

Because NAFIs are wholly owned federal entities, omitting them from the federal budget appears to violate the principles established in 1967 by the President's Commission on Budget Concepts. Those principles, which continue to be honored today, call for a unified and comprehensive federal budget.⁸ Because NAFIs operate much like business enterprises, however, those prin-

4. Dan Daniel, "The Military Resale System: Its Past . . . Its Present . . . Does It Have a Future?" *Interservice*, American Logistics Association, vol. 2, no. 2 (Spring 1982), pp. 12-19.

5. Department of Defense, Nonappropriated Fund Management Study Group, *The Legal Status of Nonappropriated Fund Instrumentalities and Their Employees*, vol. 1 (July 1975), pp. IV-1 and VIII-11.

6. *Standard Oil Company of California v. Johnson*, 316 U.S. 481, 485 (1942).

7. Department of Defense, *The Legal Status of Nonappropriated Fund Instrumentalities*, p. viii.

8. President's Commission on Budget Concepts, *Report of the President's Commission on Budget Concepts* (October 1967), Chapter 3.

principles would not require the federal budget to record all NAF receipts and expenditures as revenue and outlays. The budget would only need to reflect NAFIs' net expenditures or net income (that is, NAF spending minus NAF receipts).

Now may be an appropriate time to examine the budgetary treatment of nonappropriated-fund activities and NAFIs and to ask whether they provide adequate control over federal resources. Many of the privileges that the Defense Commissary Agency may seek as a performance-based organization are already enjoyed by NAF activities, including military exchanges.

Exchanges are among the largest NAF activities and, as retail activities, are the most closely related to commissaries in function. Do exchanges, operated under the NAF concept, provide goods and services to military personnel in a cost-effective manner with adequate safeguards over the use of federal resources? If so, changing the treatment of nonappropriated funds might be unwise, and extending NAF privileges to DeCA (or perhaps eventually consolidating DeCA with the exchanges under a NAF framework) might be warranted. If not, what options other than NAFIs are available for managing those commercial activities? Or what modifications in the treatment and status of nonappropriated funds might be useful?

The Military Exchange System

The military exchange system controls sales of general merchandise and consumer services at U.S. bases throughout the world. Although best known for its main retail stores (similar to department stores like Sears or J.C. Penney), its offerings cover the spectrum of consumer goods and services. Department of Defense exchanges run convenience stores, liquor stores, gas stations, garden shops, furniture stores, and home office-supply and computer stores. They also provide consumer services such as barbershops, florists, pay-telephone service, optical shops, tax-preparation services, and pet-grooming salons. In addition, the exchanges are responsible for providing fast-food outlets at DoD bases (including such national franchises as Burger King, McDonald's, Popeye's, and Dunkin' Donuts). At many bases, the exchanges have built small shopping malls to make on-base shopping more attractive to their customers.

The military exchange system generated sales of \$9.2 billion in 1995, making DoD the 12th largest general retailer in the United States.¹ About 12 million U.S. citizens are eligible to shop in exchanges. That figure includes everyone eligible to shop in DoD commissaries (active-duty and retired military personnel and their dependents, and DoD civilian personnel and their dependents overseas) as well as exchange employees and members of the Selected Reserve and Individual Ready Reserve and their dependents. Exchanges employ approximately 78,000 nonappropriated-fund workers. Family members of active-duty personnel account for almost half of those workers, making the exchanges an important source of secondary income for military families.

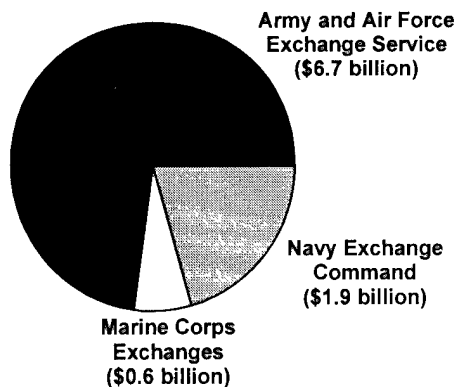
DoD's exchanges, unlike its commissaries, are not part of a single agency. Instead, the department operates three distinct exchange systems. The Marine Corps system, which has 16 main stores and annual sales of about \$600 million, is the smallest (see Figure 6). It operates in a relatively decentralized fashion, with the commander of each base controlling that installation's exchange facilities as well as its morale, welfare, and recreation programs. The Navy's exchange system, under the control of the Navy Exchange Command (NEXCOM), is larger and more centralized. In 1995, it had sales of almost \$2 billion, distributed among exchange complexes at 122 bases. The Army and Air Force Exchange Service (AAFES), which serves both Army and Air Force bases, is by far the largest of the three. In 1995, it had sales of \$6.7 billion and operated 224 main retail stores. Its exchange complexes include more than 10,000 distinct retail and service operations, ranging from Burger Kings to video stores.

Despite their separate management structures, the three military exchange systems share several features. They serve the same patron base; people who are eligible to shop at one exchange are eligible to shop at all others. Each system maintains exclusive control over the sale of goods and services to consumers at the bases it supports.² Private cooperatives or retailers can sell goods and services on-base only with the approval of the exchange. In addition, although exchanges are non-appropriated-fund activities, each exchange system relies on in-kind support that DoD provides using appropriated funds. That support includes maintaining the

1. "Demographic Section," *Exchange and Commissary News*, vol. 33, no. 10 (October 15, 1996), p. 86.

2. That control does not apply to sales of commissary goods and those recreational services (golf courses, theaters, clubs) provided by MWR programs.

Figure 6.
Distribution of DoD Exchange Sales
Worldwide, 1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTE: Includes sales made by concessionaires.

outside of exchange buildings, transporting goods overseas, and providing free utilities at overseas stores.

The exchange systems also share the same three goals: to provide military personnel with a noncash benefit by selling goods and services at 20 percent less than commercial prices; to generate nonappropriated-fund earnings to support other MWR programs or to invest in the exchange system itself; and to ensure that service members have access to brand-name U.S. goods and familiar services at overseas or isolated bases.

The value of military exchanges depends not only on their ability to generate earnings but also on who shops in them and how much those patrons gain from their exchange privileges. Neither of those factors is easy to quantify.

Exchange Patrons in the United States and the Benefits They Receive

Exchanges in the United States sold \$6.9 billion of goods and services in 1995, generating 75 percent of total exchange sales. Active-duty personnel and their

family members appear to account for only about half of exchange sales in the United States. For example, AAFES estimates the following distribution for its U.S. retail sales: 45 percent to retirees and their family members, 50 percent to active-duty personnel and their family members, and 5 percent to reservists and their family members.³ (The percentage of sales going to AAFES employees and their dependents is very small, although in one location—the retail store for AAFES headquarters—employees account for 89 percent of sales.)⁴

Similarly, a survey commissioned by the Navy in 1989 indicated that about 40 percent of the shoppers in its largest U.S. exchanges were retirees and 5 percent were reservists.⁵ The percentage of sales going to retirees and reservists is likely to be greater than those figures indicate, however, because the survey was conducted before the defense drawdown reduced the number of active-duty personnel in the United States. Moreover, retirees are likely to account for a higher percentage of sales than of shoppers because they shop less often than active-duty personnel (since they must generally travel farther to reach exchanges) and because they tend to have higher income. In the Navy survey, 57 percent of retired customers reported annual income of at least \$35,000, compared with only 23 percent of active-duty customers.⁶

Factors That Affect the Mix of Patrons

The proportion of sales made to active, retired, and reserve personnel and their families varies depending on the good or service being offered. On-base services (such as pay telephones, fast food, vending machines,

3. AAFES did not use survey data to calculate those figures. Instead, it estimated them based on the statistical relationship between the number of active-duty, reserve, and retired personnel living near its exchanges and the level of retail sales in the exchanges.

4. Army and Air Force Exchange Service, *HQ Retail Store Customer Preference Survey* (1995).

5. Those numbers are CBO estimates based on Navy Resale and Services Support Office, *CRISP Report: Consumer Ratings and Impressions of Store Performance* (prepared by Market Facts, Inc., 1990).

6. Ibid.

and barbershops) generally attract active-duty patrons.⁷ Apart from any savings that those services offer, convenient access to them makes an important contribution to the lives of people living or working on-base. Retirees and reservists cite inconvenience as a major reason for not using those on-base services, although they may do so when they visit the base to use medical facilities or to shop at the commissary or at the exchange's main store.

Even within the main stores, different departments serve different populations. Unlike private retailers, exchanges perceive a need to be all things to all customers: a discount store that can offer low-cost children's clothing to junior enlisted personnel with dependents; a specialty store that can offer brand-name clothing to single, fashion-conscious service members; a source of household and garden supplies for senior enlisted personnel and officers who own their own homes; and a source of high-quality gift items to meet the needs of retired officers with discretionary income.

When the exchange systems decide what types and quality of merchandise to stock, they also help to determine their mix of patrons. Finding the right balance between discount store and upscale department store is a difficult task and a perennial source of controversy among exchange officials. That task is complicated by the fact that some of the most profitable merchandise (including upscale goods such as Lladro figurines, Coach handbags, and Villeroy and Boch china) is more attractive to retired officers than to active-duty enlisted personnel.

Although some enlisted customers feel that exchanges have the right mix of goods, others agree with the senior enlisted customer who noted, "Many military members, along with myself, do much of their shopping at stores such as Wal-Mart, trying to stretch a limited budget (getting the most 'bang for the buck'). I think modeling the discount store approach rather than being a miniature Sears would better meet the needs and desires of folk in the military."⁸ Only 53 percent of

active-duty personnel surveyed by AAFES in 1994 thought the exchanges offered the merchandise they needed, compared with some 64 percent of retired personnel. In addition, 59 percent of active-duty personnel surveyed said that AAFES stores offered the right price range for them, compared with 71 percent of retired personnel.⁹

Patrons' Benefits from Shopping at Exchanges

DoD exchanges offer their customers below-market prices as a form of noncash compensation. For most goods, their policy is to provide savings of 20 percent relative to commercial retail prices in the United States, although some important goods and services—including fast food and gasoline—are usually sold at or near local market prices.

How Much Savings Do Exchanges Offer? The Congressional Budget Office's best estimate is that exchange prices may typically be 5 percent to 10 percent lower than commercial retail prices (including sales tax). That estimate is very uncertain, however. It is based on an informal assessment of the sometimes conflicting evidence provided by price surveys, average markups on goods in the retail industry, the perceptions and shopping patterns of exchange customers, and the concern with which exchange managers view their private-sector competitors.

Price surveys commissioned by the exchange systems find savings that are much greater than CBO's estimate. A 1993 survey comparing NEXCOM and commercial prices for 300 items at nine bases found average savings of 19.1 percent (which equates to 26 percent savings if commercial sales taxes are included).¹⁰ The survey even showed savings compared with discount stores: NEXCOM prices were 6 percent lower than Wal-Mart prices before sales tax.

Likewise, AAFES's 1995 annual retail price survey, which covered 317 items at 17 U.S. locations,

7. Army and Air Force Exchange Service, *Food & Services Baseline Customer Preference Survey Results* (commander's briefing prepared by EDS Management Consulting Services, September 19, 1995), p. 80.

8. Quoted in Army and Air Force Exchange Service, *1994 Baseline Customer Preference Research* (commander's briefing prepared by Deloitte & Touche, August 5, 1994), p. IV-24.

9. *Ibid.*, pp. IV-29 and IV-41.

10. Reported to the Congressional Budget Office in a briefing by NEXCOM staff, February 29, 1996.

Table 6.
Operating Results of Discount Stores and Exchanges in the United States

	Sales (Billions of dollars)	As a Percentage of Sales		
		Gross Margin ^a	Operating Expenses	Earnings
U.S. Discount Stores				
Dayton Hudson	21.1	26	17	9
Sears	29.5	27	25	1
Kmart	34.3	24	22	2
Wal-Mart	84.5	20	16	5
Venture	2.0	24	22	3
All discount stores	n.a.	25	17	7
U.S. Exchanges^b				
Army and Air Force	3.9	20	19	1
Navy	0.9	20	20	0

SOURCE: Congressional Budget Office based on 1994 and 1995 Securities and Exchange Commission 10K filings and 1995 financial data provided by the Army and Air Force Exchange Service and the Navy Exchange Command.

NOTE: n.a. = not available.

a. Gross margin equals sales receipts minus the cost of goods, as a percentage of sales.

b. Figures are for the exchange systems' U.S. retail stores, after allocating overhead. They include sales of tobacco and alcohol.

found average savings of 20 percent compared with commercial stores (again before sales tax).¹¹ Actual savings varied depending on the type of commercial store: AAFES offered savings of 14 percent relative to discount stores and 25 percent relative to conventional department stores.

Other evidence, however, appears to contradict the results of those price surveys. For example, the results are inconsistent with actual markups in the private retail industry. The typical gross margin (the difference between sales revenue and the cost of goods, expressed as a percentage of sales revenue) for discount stores in the United States is about 25 percent (see Table 6). AAFES's margin for retail goods in the United States is about 20 percent, so it is unclear how it could offer pretax savings of more than 5 percent relative to typical discount stores. In fact, to the extent that large size

permits Wal-Mart and other discount retailers to pay less for goods, their prices could be lower than those of the exchange systems.

Conventional department stores in the United States have an average gross margin of about 36 percent. Assuming that NEXCOM and AAFES can purchase goods for the same price as commercial department stores, their 20 percent margin might allow them to offer savings (before sales tax) on the order of 16 percent. That is a substantial figure, but it is well below AAFES's own estimate of 25 percent savings. Moreover, many of the goods bought at exchanges (including toiletries, automotive supplies, and compact discs) are not ones that most consumers would seek at a conventional department store.

A second problem with the exchange systems' price surveys is that their results are inconsistent with the perceptions of patrons. In 1994, only 31 percent of active-duty and retired Air Force personnel polled thought that AAFES prices were below those of other

11. Army and Air Force Exchange Service, *Price Comparison Survey, 1995: Final Reports* (prepared by United Market Research, Inc., June 23, 1995).

stores.¹² About 43 percent thought they were roughly the same, and 27 percent thought they were higher. In addition, almost half felt that exchanges did not offer as wide a selection of merchandise as commercial stores.

As noted in Chapter 2, the way people shop contributes to the discrepancy between price surveys and customers' perceptions. Surveys that compare the price of an item at an exchange with the average price at a few nearby stores do not account for consumers' ability to compare prices among commercial stores, take advantage of sales, or go to those stores that typically offer the lowest prices (see Box 4 for more details about the weaknesses of price surveys).

The attitude of exchange managers in the United States toward private retailers also suggests that although exchanges offer savings on many kinds of merchandise, they do not have an overwhelming price advantage. In the words of three exchange officials:

The MCX's [Marine Corps exchange's] primary challenge is to maintain its share of market in the face of increased competition from category killers. It's becoming an increasingly difficult situation. Recent studies confirm that we have a Wal-Mart, Kmart, Circuit City, J.C. Penney, etc., within a 10-mile radius of all our stateside bases. . . . My experience is that there's a perception that the exchanges might not provide the best assortment or pricing.¹³

The NEX [Navy exchange] is struggling with a price perception. . . . We must drive the point home to our customers that the merchandise in the NEX is priced right against the competition. Base newspaper ads are being designed to shout about how well we are priced and what kind of savings we provide the military shopper.¹⁴

[In the past] you went to the exchange because it was there and you got good value. Now competition is nipping at us, and we have to pay attention to customer service.¹⁵

How Important Is Price? In general, price comparisons are probably less useful as a guide to the value of exchanges than they are of commissaries. Supermarkets typically carry a relatively standard selection of goods, and most customers have a primary store in which they make the majority of their purchases. By contrast, consumers routinely patronize more than one retail store for other types of merchandise, shopping around for value and selection. Exchange mini-malls cannot provide the same shopping experience and variety of goods as large civilian shopping malls with multiple, competing stores; as a result, the exchanges may have to offer below-market prices simply to continue attracting shoppers from off-base.

In evaluating benefits, it is also important to distinguish between the main retail stores that seek to attract off-base customers and those exchange activities—such as fast-food restaurants, dry cleaners, gas stations, barbershops, and convenience stores—that depend heavily on location and convenience for their value. Price comparisons may understate the benefits of those convenience-oriented activities to active-duty patrons who live and work on-base. For example, service members may highly value on-base access to gas stations and brand-name fast food even though such goods are typically priced at market levels.

Actual shopping patterns may best indicate the extent to which military personnel benefit from the selection, price, and convenience offered by exchange stores. Families of active-duty personnel rely on exchanges for about 30 percent of their general retail purchases, according to a 1993 survey by DoD's Defense Manpower Data Center. Those families would not shop at exchanges unless they received some benefit. Nonetheless, differences between the ratio of commissary to exchange sales in the United States and overseas highlight the fact that in this country, exchanges do not offer the same level of benefits as commissaries. Over-

12. Army and Air Force Exchange Service, *1994 Baseline Customer Preference Research*, p. IV-28.

13. John Price, head of the retail services and operations branch of the Marine Corps Morale, Welfare, and Recreation Support Activity, quoted in *Exchange and Commissary News*, vol. 33, no. 10 (October 15, 1996), p. 63.

14. Robert McGinty, chief merchandising officer for NEXCOM, quoted in *Exchange and Commissary News*, vol. 33, no. 10 (October 15, 1996), p. 44.

15. The exchange manager at the National Naval Medical Center in Bethesda, Maryland, quoted in D'Vera Cohn, "Military Stores Armed for a Retail Battle: Smaller, Older Customer Pool and Discounter Competition Push PXs to Go Upscale," *Washington Post*, August 14, 1995, p. B1.

Box 4.
Using Surveys to Compare Exchange Prices and Commercial Prices

Why do the results of the exchange systems' periodic price surveys differ from savings estimates derived from industry markups and customers' perceptions? One possibility is that the items or the stores surveyed do not give a representative picture of relative prices. For example, since the contractor conducting the survey wants to find as many of the survey items as possible at each commercial store that its staff visits, specialty stores that offer a wide selection and low prices for particular types of goods (so-called "category killers" such as Circuit City and Toys R Us) may not be well represented. Also, price clubs such as Sam's have been intentionally omitted from many surveys.

In addition, the Army and Air Force Exchange Service (AAFES) and the Navy Exchange Command do not select the items to be surveyed randomly. Instead, they deliberately include many of their best-selling items. Although the intent may not be to bias the survey, best-selling items may by definition be those that offer the greatest savings. A survey of Wal-Mart's best-selling items, for example, could yield different results. In 1985, an outside price survey (rather than one sponsored by AAFES) found that the savings offered by exchanges at Army bases depended heavily on the choice of items compared.¹ It also concluded that exchange savings resulted largely from the absence of sales taxes.

A more fundamental problem with the exchange systems' price surveys is that in each location the exchange price for an item is compared with the average price charged by three to five nearby commercial retailers. That approach gives a representative picture of what shoppers would save only if they randomly visited stores near an exchange and bought the item they were seeking at the first store that offered it. Those are unrealistic assumptions. Although shoppers typically buy most of their groceries from a single store, when shopping for general merchandise they may patronize a number of stores—going to one for clothing and another for automotive needs—based on what they already know about the prices and selections available there. In addition, for all but the most routine purchases, shoppers often visit several stores to compare selection and value.

The Congressional Budget Office's analysis of data from the 1995 AAFES price survey indicates that prices at Army and Air Force exchanges for the items surveyed were 18.3 percent below commercial prices, on average. (That figure is slightly lower than AAFES's estimate because CBO did not weight the items by the quantities sold by AAFES.) In other words, shoppers will save an average of 18.3 percent (before sales tax) if they buy an item at an exchange rather than going at random to nearby commercial stores and buying the item at the first store that has it. But if shoppers go to more than one commercial store that has the product (still selecting stores at random), the difference between the AAFES price and the lowest commercial price falls, as shown in the table below. Although shopping around entails costs (in time and gasoline, for example), consumers with prior information about which stores are likely to offer good prices will find lower prices more rapidly than these figures indicate. (The probability of finding the item in at least one store if five are visited equals 100 percent because the contractor only visited five stores in each location. Items not found in any of the five stores were excluded from the estimate of expected savings in that location.)

Shopping Patterns and Estimated Savings

Number of Stores Visited in That Location	Probability of Finding Item in at Least One Store (Percent)	AAFES's Savings Relative to Lowest Commercial Price Found (Percent) ^a
1	79	18.3
2	94	13.8
3	98	10.2
4	99	6.8
5	100	5.2

SOURCE: Congressional Budget Office based on data from the 1995 AAFES price survey.

a. Savings estimates are based on commercial prices before sales tax.

1. Brent Kroetch, Nancy Barrett, and Deb Figart, *Military and Private Sector Commodity Outlets: A Retail Price Comparison*, Technical Report 675 (U.S. Army Research Institute for the Behavioral and Social Sciences, February 1985).

seas, where all DoD retail activities have a distinct advantage over local stores, exchanges sell \$2.60 of goods for each \$1 sold by commissaries. In the United States, where exchanges struggle to compete against private retailers, the ratio of exchange to commissary sales is \$1.40 to \$1.

Moreover, the perceptions of both exchange managers and patrons suggest that a significant increase in prices or decrease in service in the main retail stores might sharply reduce sales. If that is true, it implies that the benefit patrons receive from exchanges (including the benefit of shopping in a uniquely military environment) is relatively modest. If large savings in selected "destination categories" of merchandise are what makes it worthwhile for many patrons to drive to an exchange to shop, those patrons must have alternative sources for many goods that are nearly as attractive as exchanges.

Exchange Patrons Overseas and the Benefits They Receive

Overseas exchanges sold \$2.3 billion of goods and services in 1995, accounting for one-quarter of total exchange sales. (Those figures include sales made in regular exchange stores, sales by concessionaires, and sales at temporary facilities set up to support deployed troops in places such as Bosnia.) Although both NEXCOM and the Marine Corps operate some facilities overseas, the Army and Air Force Exchange Service accounts for 80 percent of overseas sales.

Like commissaries, overseas exchanges make an especially important contribution to the lives of U.S. military personnel and their families. Outside urban areas, overseas exchanges are sometimes the only reliable source of U.S.-style products, including music, videos, and newspapers. Moreover, overseas exchanges—which operate free from import, value-added, and other business taxes—provide greater savings than U.S. exchanges do.

Differences in the types of goods offered make international price comparisons inexact. Nonetheless, estimates of purchasing-power parity by the Organization for Economic Cooperation and Development indicate that if the prices for clothing, footwear, household goods, and books in exchanges are 5 percent to 10 per-

cent below U.S. commercial prices (as CBO estimates), they are about 15 percent below commercial prices in the United Kingdom and 225 percent below commercial prices in Japan.¹⁶ In the case of heavily taxed goods, savings can be much greater. A gallon of gasoline that sells for \$1.30 at commercial gas stations in the Washington, D.C., metropolitan area costs \$3.10 at gas stations in Britain, \$4.00 in Germany, and \$4.40 in Italy.¹⁷

Despite offering large savings, many overseas exchanges have difficulty meeting the diverse needs of service members. Customer surveys indicate that although service members overseas rely more heavily on exchanges, they are less satisfied with the selection of goods and services those stores offer.¹⁸ Overseas, there are no local discount stores to provide a backup source of inexpensive, U.S.-style goods for junior enlisted personnel with families. Catalog sales by U.S. retailers are sometimes the only practical alternative to the exchange. As a result, the decisions that exchanges make about what range and types of merchandise to offer in overseas locations have a significant impact on the ability of enlisted personnel to maintain a standard of living comparable with what they would have in the United States.

NAF Earnings: An Additional Benefit of Exchanges

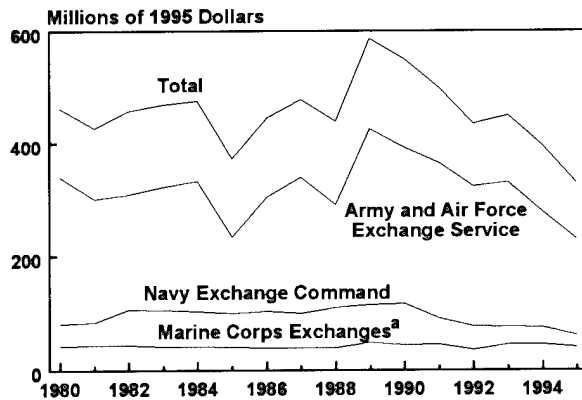
Besides providing savings to patrons, exchanges produce nonappropriated-fund earnings for DoD. Between 1980 and 1995, they generated an average of almost \$500 million a year in nonappropriated funds (see Figure 7). Those earnings equal exchange receipts minus the cost of goods, NAF operating expenses, and depreciation. Over two-thirds of the earnings (an average of more than \$300 million a year) were distributed as dividends to support MWR programs. The rest were retained by the exchanges for investment. NAF dividends and retained earnings do not appear in DoD's budget and can be spent without Congressional appro-

16. Organization for Economic Cooperation and Development, *Purchasing Power Parities and Real Expenditures*, vol. 1 (Paris: OECD, 1996), EKS Results, Table 2.11, p. 66.

17. Fawn Vrazo, "To Europe, U.S. Gas Prices Still Look Low," *Washington Post*, May 4, 1996, p. C2.

18. Navy Resale and Services Support Office, *CRISP Report*.

Figure 7.
DoD Exchange Earnings Worldwide, 1980-1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

a. Marine Corps earnings for 1980 through 1987 were estimated by CBO based on sales.

priations or authorizations and without creating a federal budgetary outlay.¹⁹

The Use of Exchange Earnings to Support MWR Programs

Although DoD's practice of using exchange earnings to support MWR programs is now well established, it was initially questioned by some Members of Congress. In 1949, when growth in the exchange system attracted Congressional attention, a special subcommittee of the House Armed Services Committee examined DoD's justification for exchanges. The subcommittee agreed that exchanges were necessary to provide a convenient source of goods at military bases and to foster community life and morale. However, it disagreed with DoD's use of exchange earnings to support other MWR activities and with DoD's view that below-market prices were needed to make up for inadequate military pay. The subcommittee felt that Congressional appropriations would better meet those goals.

The subcommittee's concerns, however, were apparently outweighed by doubts about Congressional willingness to provide appropriated funds for the recreational programs that depended on exchange earnings. During the 1949 hearings, Congressman Carl Vinson, then Chairman of the House Armed Services Committee, noted that "we have to be realistic about this" and argued, "I doubt very seriously if this committee would be able to convince the Congress that we should buy golf courses and tennis courts and maintain them. . . . The only way [DoD] can swing them is to get some money from some other source."²⁰

Nonetheless, DoD's practice of using exchange earnings for other programs can make it difficult for the federal government to track resources. When the exchanges have a bad year, the decline in exchange dividends reduces the level of federal support for MWR activities even though that reduction is not evident in DoD's budget.

In addition, like all nonappropriated-fund earnings, exchange earnings raise issues of control. Supporters of the current system argue that any profits generated by exchange sales to service members are the "service members' money" and should be available—without the need for an authorization or appropriation—to provide MWR benefits to service members. Other observers argue that NAF earnings are federal resources and should be allocated using the federal budget process.

Like the grocery industry, the retail and service industries in the United States are extremely competitive. As a result, the apparent ability of military exchanges to earn profits while selling goods and services at below-market prices merits close scrutiny. How do they do it? And are the exchange profits that support MWR activities really a savings for taxpayers? A look at both the level and sources of exchange earnings provides insight into those questions.

19. DoD does, however, submit a list of NAF construction projects to the MWR Panel of the House National Security Committee and the Personnel Subcommittee of the Senate Armed Services Committee for their approval.

20. Statement of Congressman Carl Vinson in House Committee on Armed Services, *Hearings on Sundry Legislation Affecting the Naval and Military Establishments*, hearings before the Special Subcommittee on Resale Activities of the Armed Services, H.A.S.C. No. 104 (1949), p. 346.

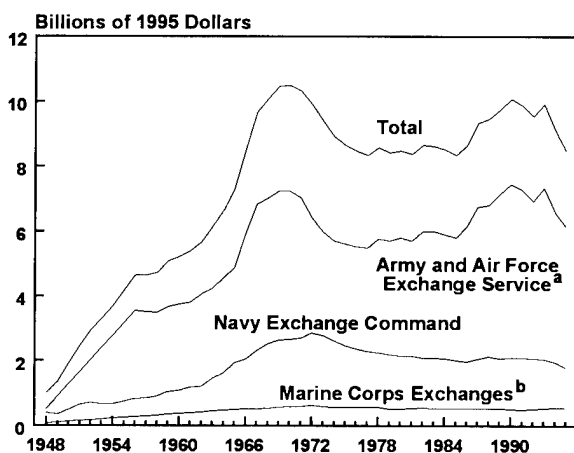
The Level and Sources of Exchange Earnings

In 1995, the three exchange systems generated approximately \$320 million in NAF earnings (see Figure 7). Earnings and sales were less than in previous years in part because of the effects of the defense drawdown. Exchange sales, which rose from modest levels after World War II, peaked during the Vietnam War and again during the late 1980s, only to dip sharply with the end of the Cold War (see Figure 8).

Although 1995 was a difficult year for military exchanges, their earnings still averaged 3.5 percent of sales—a performance that at first glance appears comparable with that of private retailers. In 1994, for example, both exchanges and private department stores had an average ratio of earnings to sales of about 4 percent.

Yet comparisons between exchanges and private retailers are misleading. An analysis of exchange earnings in different business areas shows that most earnings are not generated by the main retail stores. In-

Figure 8.
DoD Exchange Sales Worldwide, 1948-1995

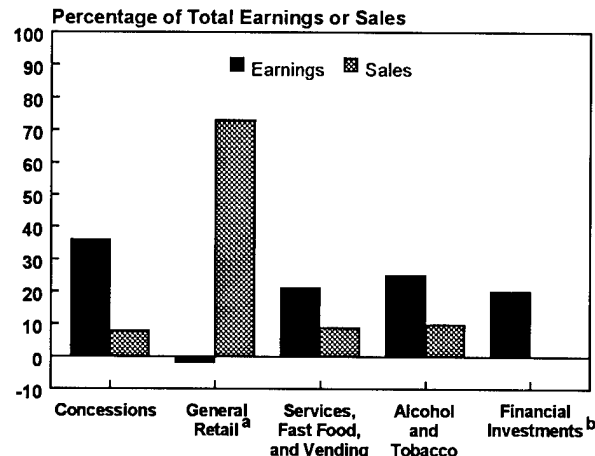


SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTE: Does not include sales made by concessionaires.

- a. Army and Air Force sales for 1949 through 1955 were derived from reported sales in 1948 and 1956, assuming a linear trend.
- b. Marine Corps sales for 1949 through 1966 were derived from reported sales in 1948 and 1967, assuming a linear trend.

Figure 9.
Distribution of Exchange Earnings and Sales, by Type of Business, 1995



SOURCE: Congressional Budget Office based on data from the Department of Defense.

NOTE: Earnings estimates are net of allocated overhead.

- a. Direct (nonconcession) sales of goods other than alcohol and tobacco.
- b. Includes earnings transferred from the Navy Exchange Command's employee pension plan and earnings on funds that the Army and Air Force Exchange Service invested in its credit card program.

stead, they come from a few business areas that particularly benefit from the exchanges' state and local tax-exemption and monopoly status on military bases. (See Box 5 for more details of how CBO estimated exchange earnings by business area.)

The most important source of exchange earnings is the fees that private firms, or concessionaires, pay for the right to operate on military bases. In 1995, concession fees constituted 36 percent of exchange earnings, although sales by concessionaires accounted for only 8 percent of the total value of goods and services sold by exchanges (see Figure 9).²¹ Concessionaires, which are selected by competitive bid, typically pay the exchanges 20 percent of their gross sales revenue. Those payments (net of the cost of any support that the exchanges provide) accrue to exchanges because of their monopoly over on-base sales.

21. The estimate of concession earnings takes into account the cost of the overhead and support provided by the exchanges.

The single largest concession is pay-telephone operations, which alone account for 10 percent of total exchange earnings. Other services frequently provided by concessionaires include optical shops, flower shops, beauty shops, and gas stations. Concessionaires also operate fast-food franchises on Navy bases. In addition, exchanges permit some specialty retail shops (including those selling candy and gift items) to operate as concessions, provided that their merchandise does not compete with that offered by the exchange's main retail store.

In contrast, the exchanges' direct (nonconcession) sales of retail goods other than alcohol and tobacco accounted for 73 percent of exchange sales in 1995 but did not generate any earnings. Exchange earnings would have been \$280 million larger if the exchanges' main retail stores, rather than losing money, had earnings equal to 4 percent of sales, as private retailers do. Instead, unprofitable main stores appear to be absorbing earnings generated by other business areas.

Why is there such a large difference in earnings between exchanges' concession operations and direct operations? Part of the answer could be differences in the ability of private and public managers to use resources efficiently. But at least some of the difference may arise because monopoly rights over on-base sales are more important for fast food and for consumer services that depend on convenience and location than they are for general retail sales. In the United States, the exchanges' main retail stores face direct competition from off-base general retailers (such as Wal-Mart and Target) and from the large discount specialty stores known as "category killers" (such as Circuit City and Toys R Us). Although the exchanges' general retail activities (direct sales of goods other than tobacco and alcohol) lost money in 1995, their fast-food, services, and vending activities had earnings equal to 8 percent of sales.

Alcohol and tobacco sales, in contrast to general retail activities, generate significant earnings for the

Box 5. **Estimating Exchange Earnings by Type of Business**

Although each exchange engages in many distinct types of business—from gas stations to portfolio management—obtaining meaningful information about earnings for different business areas is difficult. The reason is that the financial statements for each of the three exchange systems identify a large portion of total costs as central (or overhead) costs for bases, regions, and national headquarters. As a result, the total earnings of each exchange system are less than the sum of the operating profits reported by the individual business areas. For example, although the Army and Air Force Exchange Service as a whole reported earnings of only \$228 million in 1995, its individual business areas (such as main stores, specialty stores, and concessions) reported operating profits of almost \$600 million.

That approach to costs is appropriate for many, if not most, kinds of routine business decisions. For example, it may pay to keep a particular facility on a base open as long as it can cover its own operating costs. But broader questions about long-run business strate-

gies and the sources of exchange earnings cannot be answered without attempting to allocate central costs. To address those broader questions, the Congressional Budget Office (CBO) estimated earnings for various types of exchange businesses by allocating central costs to business areas based on sales volume.

In each business area, CBO adjusted operating profits downward by the amount of overhead allocated to it. Some activities, however, were not tracked as separate business areas (alcohol sales at Navy and Marine Corps exchanges, and tobacco sales at all exchanges), so they had no reported operating profits. CBO estimated operating profits for those activities using the average ratio of operating profits to retail sales, adjusted upward to account for the higher markup (the difference between the retail price and the wholesale cost) that the exchanges place on tobacco and alcohol. Although the exact numbers in Figure 9 depend on CBO's specific estimation procedures, the overall picture would be unlikely to change if other estimating methods were used.

exchanges. In 1995, they accounted for 10 percent of total exchange sales but 25 percent of total earnings. Sales of those goods benefit especially from the exchanges' exemption from state and local excise taxes (taxes that significantly raise the price of tobacco and alcohol in commercial stores).

Earnings from financial investments also benefit from the special status of exchanges. Most of those earnings reflect the return on assets held by the exchanges. Some of the financial earnings, however, come from an AAFES in-house credit card program that is financed, in part, with \$700 million in borrowed funds. Some of the earnings of that credit card program should be attributed to the low interest rates at which AAFES can borrow—rates that reflect the implicit loan guarantees that the agency's federal status provides.

The basic pattern of profitable and unprofitable activities is the same for each of DoD's three exchange systems. Nonetheless, some differences exist among the systems. Concession income is especially important for the Marine Corps, accounting for half of total exchange earnings. Perhaps because of its small size, the Marine Corps exchange system relies heavily on concessionaires, which may help explain why it achieved a higher overall earnings-to-sales ratio than NEXCOM or AAFES. Tobacco sales, which are not permitted in commissaries on most Navy bases, are particularly important for Navy exchanges, where they account for 15 percent of earnings. (In 1996, DoD raised the price of tobacco sold in commissaries to equal the price in exchanges and assigned the earnings from those sales to the exchanges. As a result, tobacco sales are likely to become more important for AAFES in the future.)

That pattern of profitable and unprofitable activities may not be a new phenomenon. Although retail earnings were depressed in 1995 because the exchanges were still adjusting to the effects of reduced numbers of military personnel, many of the main retail stores did not generate significant earnings even before the force reductions. For example, if concessions (including pay telephones) and alcohol are excluded, AAFES's earnings as a percentage of sales declined gradually from almost 4 percent in 1980 to less than 1 percent in 1995. (The alternate measure, total reported earnings, is misleading because earnings shifted upward in 1987 and 1989 when AAFES took control, respectively, of telephones and liquor stores. Another upward shift in total

earnings can be anticipated in 1997 from the transfer of tobacco sales.)

Patterns of exchange earnings must be interpreted cautiously, however. Attributing earnings to specific business activities is not entirely correct. Besides the problem posed by costs that are generated jointly by different business areas, earnings from some business areas may depend on sales in others. For example, the presence of subsidized commissaries nearby may attract shoppers to the stores that military exchanges operate. In addition, concession income may depend in part on sales by the main stores. Although a large part of concession income comes from telephones and (in the Navy) stand-alone fast-food outlets, other concessionaires providing services such as beauty shops and flower shops are frequently located in small malls next to the exchange's main store. Their profits depend in part on the main store's ability to attract customers.

Exchange managers also recognize that sales by main stores depend in part on alcohol and tobacco sales:

Cigarettes are historically an excellent destination department. People are going to drive to the exchange to buy cigarettes because the savings are significant. In order to get there, they'll more than likely drive by either a Kmart, Wal-Mart, Target, or some other mass merchandiser. Significant savings in select departments definitely gives us a leg-up on the competition. . . . Class Six beverages—spirits, wine, beer—are very, very good income producers. To AAFES customers, they represent another destination category, meaning that our price makes it worth driving to the store to make a purchase.²²

Exchange activities vary in their ability to generate NAF earnings for DoD and savings for patrons. Nonetheless, the military exchange system as a whole clearly benefits service members. It also benefits federal taxpayers by reducing the amount of cash compensation that DoD must pay in order to attract and retain a high-quality force. But what is the cost of that benefit?

22. Terry Wagner, vice president of AAFES's merchandising group, quoted in *Exchange and Commissary News*, vol. 33, no. 10 (October 15, 1996), p. 54.

The Cost of Exchanges to DoD and Society

DoD views its exchanges as a source of revenue. From a broader social perspective, however, exchanges depend on subsidies to survive. CBO estimates that exchanges received an economic subsidy, net of reported earnings, of approximately \$1.1 billion in 1995 (compared with the \$1.7 billion subsidy for commissaries). Exchange activities in the United States accounted for \$850 million of that total (see Table 7).

That subsidy figure is substantial but not particularly surprising. In the United States, competition forces retail chains that sell general merchandise to use labor and capital relatively efficiently and to set prices just high enough to cover costs (including the required return on capital) in the long run. For a government-run system to sell goods at lower prices, it is likely to require a subsidy at least as large as the savings it offers to customers. If exchanges cannot use resources as efficiently as private firms, that subsidy could be even larger.

CBO's estimate of the economic subsidy takes into account exchanges' reported earnings, costs borne by DoD but not included in the income and expense statements of the three exchange systems, the forgone return on capital that is tied up in the systems, and tax revenue forgone because of their tax-free status. The figures in Table 7 are only rough estimates, and the subsidy will vary from year to year as the level of earnings rises or falls. The basic approach that CBO used to estimate the subsidy is outlined below; additional details and separate estimates of subsidy costs for the AAFES, NEXCOM, and Marine Corps exchange systems are provided in Appendix B.

DoD Costs That Are Not Reflected in NAF Financial Statements

The financial statements issued by the three exchange systems show only nonappropriated-fund income and expenses. They do not include the cost of the support services that DoD provides with appropriated funds. CBO estimates that those costs amounted to about \$370 million in 1995, slightly more than the exchanges'

reported NAF earnings. Those costs are not readily visible in DoD's budget, however. Unlike commissaries, exchanges do not receive an appropriation earmarked for their use; instead, exchanges rely on the military services to provide in-kind support using their own appropriated funds.

About \$210 million of that \$370 million in appropriated-fund costs can be traced directly to exchange operations, mostly overseas. In an effort to keep prices at overseas exchanges comparable with those in the United States, DoD policy authorizes the use of appropriated funds to pay for transporting exchange goods overseas (about \$150 million in 1995) and to pay the utility costs of overseas stores. Other appropriated-fund costs that can be traced directly to the exchanges include some environmental cleanup costs at exchange gas stations and the salaries of the small number of military personnel assigned to exchanges.

In addition to those relatively direct costs, CBO estimates that individual bases provided exchanges with another \$160 million in appropriated-fund support. The military base where an exchange is located typically pays for maintaining the exterior of the buildings that the exchange uses (including maintaining their heating and cooling systems, windows, and roofs). In addition, bases do not charge exchanges for the city services that they provide, such as utility lines, streets, garbage collection, and police and fire protection. At overseas exchanges, where scarce resources must be devoted to controlling black-market operations, the cost of police services can be significant. CBO estimated the costs of those less visible support services based on the square footage of exchange buildings and on the charges that the Defense Commissary Agency (a similar kind of enterprise) pays per square foot for those types of services. Their total cost equals less than 2 percent of exchange sales.

Forgone Return on Capital

The forgone return on capital is another cost of DoD's exchange system. If taxpayers did not have resources tied up in the exchanges' inventories, buildings, and cash balances, those resources could be invested in different enterprises that would earn a positive rate of return. (Box 6 discusses why the forgone return on the

Table 7.
Annual Economic Subsidy of DoD Exchanges (In millions of 1995 dollars)

	U.S. Exchanges	Overseas Exchanges	Total
Business Income			
Sales Receipts Minus the Wholesale Cost of Goods Sold ^a	1,460	600	2,060
Other Business Income ^b	<u>300</u>	<u>90</u>	<u>390</u>
Total	1,760	690	2,450
Operating Costs			
Costs Paid by DoD			
Paid from appropriations ^c	160	210	370
Paid from nonappropriated funds	<u>1,540</u>	<u>590</u>	<u>2,130</u>
Subtotal	1,700	800	2,500
Costs Not Paid by DoD			
Forgone return on capital	350	150	500
Forgone monopoly rents	90	30	120
Forgone sales taxes	370	0	370
Forgone excise taxes	<u>100</u>	<u>0</u>	<u>100</u>
Subtotal	910	180	1,090
Total	2,610	980	3,590
Economic Subsidy			
Total Subsidy (Total operating costs minus business income)	850	290	1,140
Memorandum:			
Sales Receipts ^a	6,310	2,130	8,440
Subsidy as a Percentage of Sales Receipts	13	14	13
NAF Earnings (Business income minus costs paid from nonappropriated funds)			
	220	100	320
Subsidy Provided by DoD (Operating costs paid by DoD minus business income)			
	-60 ^d	110	50

SOURCE: Congressional Budget Office based on 1995 data from the Department of Defense.

NOTES: Business income and operating costs exclude the wholesale cost of goods sold.

DoD = Department of Defense; NAF = nonappropriated fund.

- a. For direct (nonconcession) operations only.
- b. Includes concession fees (before allocating overhead) and income from financial investments.
- c. Includes the cost of transporting goods overseas and of utilities in overseas stores as well as the estimated cost of the base support services that DoD provides in-kind.
- d. This number is negative because the estimated appropriated-fund support that DoD furnished to U.S. exchanges in 1995 (\$160 million) was less than their reported NAF earnings (\$220 million).

Box 6.
Nonappropriated Funds:
Service Members' Dollars or Taxpayers' Dollars?

There is no controversy about the legal status of non-appropriated-fund instrumentalities. They are wholly owned federal entities, and both their earnings and their assets are federal resources. Nonetheless, within the Department of Defense (DoD), the exchanges' nonappropriated-fund (NAF) earnings and assets are often viewed as service members' dollars because they appear to result from purchases made by service members. In addition, the current budgetary treatment of nonappropriated funds—under which DoD's expenditures of NAF earnings do not affect federal outlays or the federal deficit—encourages the Congress to view NAF dollars differently from appropriated dollars. If NAF assets are seen as belonging to service members rather than taxpayers, the forgone return on those assets might be considered a cost to service members, not to the rest of society or taxpayers as a whole.

However, an analysis of the sources of NAF earnings indicates that they are not generated by the expenditures of service members. NAF operations show earnings because taxpayers (through the Congress and DoD) grant them costly privileges—including the use of resources purchased with appropriated funds, the right to sell goods free of state and local sales and excise

taxes, and a monopoly over sales at military installations. It is misleading to view the military exchange system as a revenue generator that saves taxpayers money (by reducing the level of appropriated funds needed to support DoD's morale, welfare, and recreation programs) while providing goods to service members at below-market prices. In reality, taxpayers incur costs in providing exchanges as a benefit for military personnel. An accounting system that identified all of the costs of exchange operations would make the question of whether NAF earnings were service members' or taxpayers' dollars moot.

Apart from its fundamental conceptual weakness, DoD's view of NAF earnings may sometimes lead to poor use of resources. The department frequently advances the argument that nonappropriated funds are service members' dollars when its decisions about their use are being questioned. Yet the distinction between nonappropriated and appropriated funds is an artifact of current accounting practices. The federal government has no reason to be less careful or demanding when it invests NAF resources than when it invests appropriated funds.

exchanges' capital is a cost to taxpayers rather than to service members.)

The three exchange systems reported combined NAF assets of \$3.3 billion in 1995. That figure includes \$1.7 billion in inventories of resale goods, \$500 million in internal funds that are loaned to members through AAFES's in-house credit card program, and \$1.2 billion in buildings and equipment.²³ Assuming that taxpayers could earn a 15 percent before-tax rate of return on equally risky commercial investments, they would expect a return of about \$500 million annually

on an investment of \$3.3 billion.²⁴ (Approached from a different perspective, before-tax earnings for commercial department stores and specialty stores in 1994 equaled 6 percent of sales.²⁵ Applying that figure to the exchanges' direct sales of approximately \$8.4 billion would also imply a before-tax return on capital of \$500 million.)

23. The \$1.2 billion reported book value for buildings and equipment understates the value of the real property devoted to exchange activities, because all of the land and roughly two-thirds of the 55 million square feet of buildings used by exchanges are not NAF assets but are provided by DoD without charge. CBO did not attempt to place a rental value on those assets.

24. That \$500 million estimate of the cost of capital does not reflect the budgetary savings that taxpayers would receive if exchange assets were sold. Although private-sector rates of return may be appropriate for policy analyses, Treasury bond rates are the appropriate rate of return for budget estimates. See Rudolph Penner, "Aspects of Budget Accounting and Scoring That Distort the Decision Process" (draft, Barents Group, Washington, D.C., November 15, 1996). For more information about the 15 percent before-tax rate of return, see Appendix B.

25. John A. Ronzetti, ed., *FOR 1995 Edition: Financial & Operating Results of Retail Stores in 1994* (New York: John Wiley & Sons, 1995), pp. 6-9.

Forgone Monopoly Rents

One of the most valuable assets of exchanges is their monopoly over retail sales at military bases.²⁶ One way to estimate the rents that taxpayers forgo by granting monopoly rights to the exchanges would be to add the concession fees that exchanges collect (about \$120 million in 1995, after subtracting overhead costs) to the additional fees they could collect if they did not choose to operate most activities in-house. The CBO estimate shown in Table 7, however, includes only the rent on those monopoly rights that exchanges choose to auction to concessionaires (that is, actual concession fees). The value of the monopoly rights that exchanges choose to exercise themselves is unknown.

Forgone Tax Revenue

Exchanges, like commissaries, are exempt from state and local sales and income taxes. Thus, to the extent that exchange operations reduce the sales and profits of private retailers, they also reduce state and local tax revenue. Although not of direct concern to DoD or the federal budget, forgone tax revenue accounts for almost half of the exchanges' total economic subsidy. Based on U.S. sales data, CBO estimates that exchange activities in the United States resulted in \$470 million in forgone state and local sales and excise taxes in 1995. (Exchange activities overseas were not assumed to result in any forgone U.S. state and local tax revenue.)

Forgone sales taxes account for about \$370 million of that amount (based on an estimated average combined state and local sales tax rate of 7 percent). Forgone state and local excise taxes on tobacco account for another \$50 million. (That estimate is based on exchange sales of tobacco in each state in 1995, the average effective state and local excise tax rate in each state, and a possible decline in sales because of the higher prices that customers would have to pay in commercial stores.) Forgone excise taxes on distilled spirits, wine, and beer may total another \$50 million a year. However, for various methodological reasons (outlined

26. DoD's recent decision to transfer control of all tobacco sales at military bases to the exchange system illustrates the importance of accounting for the value of monopoly rights. Exchanges' earnings are expected to rise in 1997 because of their increased control over tobacco sales. However, the additional earnings will reflect an increase in the level of assets that exchanges hold, not a higher rate of return on their assets.

in Appendix B), that figure should be viewed as only a rough estimate.

Because the \$1.1 billion in forgone taxes, monopoly rents, and return on capital that exchanges cost each year does not appear directly in the DoD or federal budget, exchanges may appear to be a cost-effective form of compensation from DoD's point of view. As a result, the idea of fundamentally changing the current system could be unattractive to the department. Yet exchanges—and U.S. exchanges in particular—may not appear cost-effective when viewed from a perspective that takes into account their full economic cost.

The Economic Cost of U.S. and Overseas Exchanges

A cost comparison between U.S. and overseas exchanges is difficult because they share headquarters' expenses and because their combined operation permits economies of scale. Nonetheless, if joint costs and forgone return on capital are allocated in proportion to sales, the economic subsidy associated with a dollar of exchange sales in the United States appears to be nearly the same as that associated with a dollar of sales overseas (see Table 7).²⁷ Although overseas exchanges receive more appropriated-fund support, U.S. exchanges result in higher forgone taxes. In addition, host nations pay part of the costs of overseas exchanges, absorbing some expenses that might otherwise be paid by U.S. taxpayers.

Higher markups on overseas sales also tend to reduce the subsidy that overseas exchanges require. The average gross margin for AAFES exchanges abroad is 22.2 percent. That is 2.7 percentage points, or 14 percent, higher than AAFES's average U.S. margin. The exchange systems try to maintain uniform prices world-

27. Those figures (the subsidy equal to 13 percent of sales in U.S. exchanges and 14 percent overseas) are rough estimates. CBO estimated NAF earnings in the United States and overseas based on reported earnings minus overhead costs allocated by sales. Transportation and utility costs paid for with appropriated funds were allocated to overseas exchanges, and forgone taxes were allocated to U.S. exchanges. Other appropriated-fund costs and the forgone return on capital were allocated based on sales. (Similar results are obtained when those costs are allocated based on square feet of buildings.) One difficult question is the extent to which U.S. and overseas costs are linked by common buying and distribution systems. Without a U.S. base to provide economies of scale, the costs of a DoD-run overseas system could increase.

wide, yet managers in the United States—unlike those overseas—must frequently lower their prices to remain competitive. In addition, alcohol, tobacco, and gasoline purchased for sale by exchanges overseas, unlike similar goods purchased for sale in the United States, are exempt from federal excise taxes. That difference allows overseas exchanges to earn a higher markup while charging the same price as exchanges in the United States.

In overseas locations, the exchanges' ability to provide U.S. goods without paying import duties or value-added taxes gives them a large price advantage over their local competitors. As a result, overseas exchanges can attract customers even if they do not maintain the same quality of stores or provide the same selection of merchandise as exchanges in the United States.

Appropriated-fund support, together with their greater price advantage, helps explain why overseas exchanges have historically generated higher NAF earnings relative to sales than U.S. exchanges. Between 1980 and 1991, average earnings as a percentage of sales for AAFES exchanges were 7 percent in the Pacific, 5.5 percent in Europe, and 4 percent in the United States. For NEXCOM, the figures were 5.4 percent for overseas exchanges and 4.4 percent for U.S. exchanges. (Since 1991, however, AAFES has been struggling to adjust to reductions in the number of U.S. troops in Europe, and its NAF earnings there as a percentage of sales have fallen below the U.S. level.)

Issues Raised by the Exchange System

Exchanges offer numerous advantages to the U.S. military. Although not as highly valued by their patrons as commissaries, they still have many loyal customers. They provide goods and services at below-market prices and generate revenue that DoD can allocate to recreational programs that would otherwise be unlikely to receive taxpayer support. Overseas, they provide both U.S. goods and employment opportunities to service members and their families. They have also proved to be an effective way to supply basic products—videos, compact disc players, telephone service, and snack foods—to deployed troops.

In the United States, exchanges provide some goods and services (such as convenience stores, pay telephones, barbershops, and fast food) whose value depends on proximity to on-base housing and military workplaces. In addition, they provide large on-base retail stores that attract military personnel and retirees who live off-base. Although the practice of attracting off-base customers may be questioned, it allows exchanges to maintain on-base shopping malls that also benefit the active-duty personnel who live on-base.

Nonetheless, this overview of the exchange system has identified some problems. Many of them arise because of confusion about the nature of exchanges. In DoD's view, exchanges provide benefits to patrons and also operate as revenue-generating businesses. However, CBO's analysis indicates that although exchanges benefit current and former service members, they also generate hidden costs in the form of forgone taxes and forgone return on capital. Those costs are overlooked by the current NAF accounting system, which encourages exchange managers to act like businessmen, trying to increase sales and generate NAF revenue from their operations.

DoD's failure to recognize the total economic costs of exchanges is a problem because some of the activities most likely to generate NAF earnings—sales of tobacco, alcohol, and upscale merchandise—are not necessarily the activities that society would wish to subsidize or that are most closely related to DoD's warfighting mission. Moreover, some of the most profitable customers for the exchanges—officers and retirees—are not those whom taxpayers might wish to target for benefits.²⁸ If DoD was required to subsidize exchange sales from its own budget, exchanges might focus more on enlisted members stationed or deployed overseas, and the role of exchanges in the United States might be much smaller.

Another difficulty is that as long as DoD views the exchange system as a profit-making enterprise, it will have an incentive to expand the system despite the possible costs to taxpayers. Moreover, past declines in exchange earnings have prompted policy and legislative changes to boost earnings. Access to exchanges was expanded for retired reservists in 1990, and unlimited access was given to the Ready Reserve in 1991. The

28. See Cohn, "Military Stores Armed for a Retail Battle."

following year, exchange sales were further bolstered by the expansion of an in-house credit card program that relies in part on implicit federal guarantees. In 1996, DoD shifted control over all on-base tobacco sales to the exchanges, an action that could add over \$60 million a year to their earnings. And this year, DoD improved the exchanges' ability to compete with private retailers by lifting many historical restrictions on the kinds of merchandise they can offer.

In an effort to maintain their sales volume despite a drop in the number of active-duty personnel, the exchanges are working to expand their sales to retirees and reservists.²⁹ If successful, that effort could reduce the cost-effectiveness of exchanges as a form of compensation. Advertising and merchandising campaigns that increase the amount sold to retirees do not increase the quality of the active-duty force. Moreover, the additional retirees (or active-duty personnel) who will be attracted to exchanges by those campaigns are likely to be people who are almost indifferent between exchanges and private stores. As a result, the additional sales will provide little benefit to the new patrons.

Both commissaries and exchanges benefit from their exemption from state and local taxes. But the size of the commissary system is limited by the Congress's need to appropriate funds to pay for labor and most other operating costs, whereas the size of the exchange system is not. Perhaps as a result, the exchange system has grown relative to the commissary system, in terms of sales, over the past 20 years. In 1974, total exchange sales were 1.4 times total commissary sales; by 1980, that figure was 1.5; and in 1995, it was 1.6.

The role that exchanges play in providing low-cost goods poses difficulties, in part because price subsidies encourage patrons to consume goods even if the cost of providing the goods exceeds their value to the patron.

Difficulties also arise because the exchanges' multiple goals—offering below-market prices, providing access to affordable merchandise in overseas areas, and earning revenue—frequently conflict. That makes it difficult to hold exchanges accountable for their performance. If the exchanges' main retail stores in the United States do not earn a return, they can be justified on the grounds that they provide below-market prices. If overseas stores do not offer a good selection of low-priced merchandise, it is because the additional sales that a wider selection might generate would not justify the cost. If exchanges appear to encourage sales of tobacco and alcohol and excessive use of in-house credit cards, that contributes to earnings that support MWR activities.

Despite the best efforts of exchange managers to balance those conflicting goals, an environment without clear performance measures could lead to a corporate culture more intent on perpetuating itself than on serving the needs of service members. For example, although competition among stores benefits consumers in civilian shopping malls, exchange managers have little incentive to invite competition from other general retailers at military bases.

Overseas, exchange managers have no incentive to negotiate with host governments or local retailers in an effort to make local stores more accessible and affordable—for example, by exempting service members' purchases from value-added tax or by providing more convenient hours and access to interpreters. Yet better access to local stores may be the only practical way to ensure a high quality of life for service members in some locations. No matter how carefully exchange officials select the merchandise for their overseas stores, a single on-base store cannot rival the range and selection of goods available in urban European communities. Both the real benefits that the current exchange system provides and the difficulties that it presents need to be considered when evaluating alternative strategies for DoD's retail activities.

29. See Kristina Maze, "Coupons Target Those Set to Retire: Exchange Service Aims Promotion at 'Growing Segment,'" *Military Market* (December 1996), p. 14.

Alternative Strategies for DoD's Retail Activities

The Department of Defense is trying to reduce the costs of its infrastructure, including its commissaries and exchanges, in order to free up the funds needed to buy new weapon systems. In the case of those retail activities, however, DoD is restricting its initiatives to ones that would reduce the budgetary costs of the activities without fundamentally changing either their scope or the benefits they offer to patrons. Many factors explain that focus, including the department's desire to preserve military tradition, protect a unique and cohesive military lifestyle, and keep faith with current military retirees.

But in the post-Cold War era, DoD's retail system faces some fundamental questions that go beyond ways to reduce costs. Those questions deal with the purpose of the system and the nature of the benefits it provides. Should DoD's stores target retirees and reservists, or should they focus more on providing goods to service members stationed overseas? Should the Congress help maintain commissary and exchange sales in the United States by extending shopping privileges to new groups of patrons or authorizing the stores to sell a wider range of goods and services? Should the military's ability to support morale, welfare, and recreation programs depend on profits made by selling alcohol and tobacco? This might be an appropriate time for DoD to reassess its role and consider options that would focus its retail activities on needs that are not met by private businesses.

Yet the department has little incentive to seek fundamental changes in its retail role. One of the most important factors underlying the growth and persistence of DoD's commissary and exchange systems is the fact

that most of their costs fall outside the defense budget. By operating an extensive array of retail activities, the department is able to use its federal immunity from state and local taxation and its access to interest-free capital to capture resources that do not appear in its budget.

This chapter examines four alternatives for the future of DoD's retail activities (see Table 8). The first two, which focus on reducing budgetary costs, would encourage the department to maintain a large retail role. Alternative 1, the department's current plan, would reduce costs to DoD by consolidating the three separate exchange systems and by giving managers of the Defense Commissary Agency more freedom under the performance-based organization concept. Some observers view that plan as a step toward Alternative 2: the creation of a single organization (what DoD refers to as a resale authority) that would provide groceries, general merchandise, and consumer services at all military bases with minimum use of appropriated funds.

Alternatives 3 and 4, in contrast, would make DoD recognize the social costs of its retail activities, thus encouraging the department to limit their size and focus. Alternative 3 would do that by requiring DoD to rely on private contractors rather than in-house activities. Because private contractors pay sales tax and earn a market return on their capital, that alternative would shift much of the social cost of on-base retail activities into DoD's budget. The fourth alternative would make the social costs of those activities visible by requiring commissaries and exchanges to make tax payments and to borrow capital at the private, pretax rate of return.

Table 8.
Alternative Strategies for DoD's Retail Activities

	Scope of On-Base Activities	Pricing Strategy	Annual Costs or Savings (-) (Millions of 1995 dollars)		Standard of Living for Military Personnel
			In the Federal Budget	Outside the Federal Budget	
Current System of Retail Activities					
Baseline	Supermarkets, department stores, and liquor stores dependent on off-base patrons	Below-market	1,100 ^a	1,600	Current Level
Effects of Alternative Strategies for Retail Activities					
Alternative 1: Consolidate Exchanges and Reduce Constraints on DeCA	No change	Some increases in commissary prices	-200 to -300 ^b	Little change	Little change
Alternative 2: Create a Single DoD Resale Authority Within the Federal Budget	Grocery sales to off-base patrons decline	Commissary prices rise to exchange levels	-800 to -1,000 ^c	Some savings if scope of on-base activities declines	Declines for retirees; cash allowances offset effects on active-duty personnel
Alternative 3: Contract Out Operations and Subsidize Prices	No change	No change	800 to 1,200 ^d	-1,600	No change
Alternative 4: End Subsidies and Give Cash Allowances to Active-Duty Personnel	Much smaller role for on-base stores; remaining activities focus on people living or working on-base	Prices rise to market levels	-200	-1,600	Declines for retirees; cash allowances offset effects on active-duty personnel

SOURCE: Congressional Budget Office.

NOTE: DoD = Department of Defense; DeCA = Defense Commissary Agency.

- a. Commissary appropriations plus appropriated-fund support for exchanges minus reported exchange earnings. Although not included in the federal budget, exchange earnings can substitute for appropriated funds.
- b. Includes \$50 million to \$100 million in savings from consolidating the three exchange systems and \$150 million to \$200 million in potential savings from changing the civil service status of commissary employees and other initiatives granting more flexibility to commissary managers.
- c. Includes savings from raising commissary prices (\$390 million after compensating active-duty personnel), requiring the resale authority to reimburse DoD for appropriated fund support (\$370 million), changing the civil service status of commissary employees (\$150 million to \$200 million), and consolidating exchanges with commissaries (over \$100 million) minus the costs of appropriated funds to support Category A and B morale, welfare, and recreation programs.
- d. DoD's budget would rise to reflect the cost of taxes and the return on capital, although those costs would be offset in part by savings from competition.

Alternative 1: Follow DoD's Current Plan

As part of its plan to maintain the benefits but reduce the costs of its retail activities, the Department of Defense is examining ways to merge the three exchange systems (the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corps exchanges). It is also seeking waivers and legislation that would give DeCA's managers greater freedom to manage resources.

Reducing Costs in the Exchange System

Although some type of exchange consolidation appears to be part of DoD's current strategy, its extent and form have not been determined. Options for consolidation range from integrating the three systems' overhead functions (such as distribution systems and purchasing offices) to completely merging the three into a single organization. However, concern among the individual services about what effect consolidation would have on exchange operations and the distribution of exchange earnings could forestall any action. Although the Assistant Secretary of Defense for Force Management Policy initially announced that consolidation was to be complete by December 1998, the question of consolidation is still being studied and debated within DoD today.¹ For the purposes of this analysis, Alternative 1 assumes that the department's final plan will call for consolidating the three exchange systems into a single organization.

Such an initiative would almost certainly generate savings for DoD as a whole. But the savings would be relatively modest compared with the total cost of the exchange system. Because NEXCOM, AAFES, and Marine Corps exchanges do not operate on the same military installations, even completely integrating the three systems could have little impact on operating costs at the store level.

The exact amount that consolidation would save is uncertain. In 1990, a DoD study group (Jones II) concluded that savings from a single exchange system would total approximately \$50 million a year.² The savings would come primarily from reducing headquarters overhead and eliminating duplicative systems for personnel, buying, warehousing, transportation, and automated information. That estimate could still be realistic today. It equals about 7 percent of the 1995 operating costs of Navy and Marine Corps exchanges, or about 40 percent of their headquarters, regional, and distribution costs. Because AAFES already accounts for 70 percent of total exchange sales, its headquarters and support activities might, with modest increases in resources, be able to support the stores now operated by NEXCOM and the Marine Corps.

Other estimates of savings, however, vary widely. A December 1996 study for the Office of the Secretary of Defense suggested that exchange integration could save \$130 million a year.³ By contrast, recent internal estimates by NEXCOM indicated that annual savings could be as low as \$13 million. In today's environment of reduced exchange sales and earnings, however, even modest savings may look attractive.

One argument against a combined exchange is that it might not be as responsive to the diverse needs of service members as the individual exchange systems are. Another concern is that exchange operations might be disrupted during the transition. A more fundamental criticism, however, is that DoD's plan would do nothing to shift the focus of the exchange systems away from generating illusory nonappropriated-fund earnings in competition with U.S. retailers and toward meeting needs (such as those of service members overseas) that U.S. retailers cannot meet.

1. Memorandum from the Assistant Secretary of Defense for Force Management Policy to the Secretaries of the military departments and the Chairman of the Joint Chiefs of Staff, January 8, 1997.

2. The study group was chaired by Lieutenant General Donald W. Jones, Deputy Assistant Secretary of Defense for Military Manpower and Personnel Policy. See Department of Defense, *Study of Military Exchanges* (September 7, 1990), p. 1-5. The annual savings of \$50 million reflects the group's estimate adjusted for inflation.

3. Office of the Secretary of Defense, *Exchange Integration Study: Summary of Gains and Costs* (prepared by SRA/Gimbal, December 10, 1996). The \$130 million excludes estimated savings from changes in business practices (rather than consolidation), but it does include \$30 million in assumed savings from increased purchasing leverage due to consolidation.

Reducing Costs in the Commissary System

DoD plans to cut the overall cost of its commissary system (while maintaining the benefits) by using policy waivers and legislation that will give the system's officials the freedom to manage resources more effectively. The Administration signaled its support of that effort by designating DeCA a performance-based organization in October 1996. Managers of PBOs are meant to have greater authority and accountability than managers of other federal agencies. DeCA's designation as a PBO is largely symbolic, however. The effectiveness of the initiative will depend on the specific waivers and legislation that the agency ultimately obtains.

Policy and Legal Constraints on DeCA Management. DeCA currently operates under constraints that limit its ability to control labor costs, acquire goods and services at the lowest cost, and allocate its funds efficiently. Although some of those constraints are legal ones that arise because DeCA is a government agency, others are policy constraints imposed by DoD or other executive branch agencies.

As members of the federal civil service, DeCA's employees are subject to civil service rules on hiring, pay, promotion, and retirement. Salary and benefits for DeCA employees, many of whom are cashiers, average \$31,000 a year. That amount is roughly 1.5 times the average \$22,000 in salary and benefits received by employees of commercial supermarkets.⁴ According to DoD estimates, it is also 1.5 times the average cost of similarly skilled exchange workers (who, as NAF employees, are not part of the civil service). If DeCA could lower its personnel costs to private-sector levels, it would save more than \$150 million a year.⁵

DeCA tries to avoid paying civil service salaries for its store-level labor by relying heavily on contractors.

4. The \$22,000 figure is based on average hourly earnings of \$10.55 (including fringe benefits) and an assumed 40-hour work week. The average hourly earnings reflect the level of hourly earnings (\$8.18 before fringe benefits) reported for food store employees by the Bureau of Labor Statistics and the ratio of benefits to salary costs (29 percent) reported by the Food Marketing Institute.

5. DeCA's total labor costs in 1995 were approximately \$600 million. CBO's estimate of the potential savings from lower wages excludes supervisors' salaries and the wages paid to foreign workers at overseas commissaries. It does not account for transition costs.

Its use of contract workers to stock shelves, for example, has led to reported savings of 40 percent.⁶ Nonetheless, contractors working for DeCA are subject to the Services Contract Act, which requires them to pay higher wages than they might otherwise. Moreover, in selecting contractors, DeCA is subject to the provisions of the Small Business Act and the Javits-Wagner-O'Day Act (which give preference, respectively, to small businesses and to contractors who hire blind or severely disabled workers). The high cost of civil service personnel and those restrictions on direct contracting have encouraged DeCA to rely on its vendors for some labor services that civilian grocers find it more cost-effective to perform in-house.

Although DeCA does not have to follow standard federal acquisition rules when it buys brand-name goods for resale, it is legally bound to do so when it buys non-brand-name goods or equipment and supplies to be used in commissaries. Other constraints that the agency faces in purchasing goods and services result from DoD policy. They include requirements to use the Defense Finance and Accounting Service for bill paying and bookkeeping, the Defense Logistics Agency for personnel services, and DoD's telecommunications services.

DeCA's managers are also limited in their ability to generate and spend revenue to support commissary operations. Although the agency's appropriation is not large enough to keep commissaries open for all of the hours that customers want service, DoD policies restrict DeCA's efforts to raise additional revenue by selling advertising and other services to its vendors. Moreover, funds from the 5 percent surcharge that DeCA levies on sales are kept in a separate account from appropriated funds and can be used only to build stores or buy supplies and equipment. As a result, the agency sometimes builds a large store that will operate for a limited number of hours rather than a smaller store that might operate for more hours.

The Ideal Performance-Based Organization. An ideal PBO initiative might revoke those constraints and give DeCA the same freedom to manage resources that private companies have. Supporters of the PBO concept within DoD argue that a performance-based sys-

6. President's Commission on Privatization, *Privatization: Toward More Effective Government* (March 1988), p. 145.

tem would also provide incentives for managers and employees to use that freedom to reduce costs. In their view, DoD's in-house stores could reap the same savings that would be offered by outsourcing (contracting with private firms to provide commissaries) but without the costs of negotiating and monitoring contracts and the risks imposed by contractual relationships. Although DeCA, even as a PBO, would lack the in-house regional distribution networks that support most large chains of grocery stores, it could rely on the commercial networks that independent grocery stores use.

If DeCA carried out the PBO concept aggressively, its potential savings could be significant. Because the agency spends \$1.4 billion a year on operating costs, a 10 percent to 20 percent reduction in such costs would yield savings of \$140 million to \$280 million a year. Based on the more than 30 percent difference between the average hourly wages of civil service and non-civil service retail labor, \$200 million could be a conservative estimate of the potential savings.

Actual Savings from a PBO. For a number of reasons, the PBO approach is unlikely to achieve all of those potential savings. One reason is that DeCA might not get all of the waivers and legislation that it requests. Another is that DoD has chosen not to pursue some of the more ambitious PBO proposals because of the overwhelming obstacles it would face in trying to get the necessary waivers and legislation. For instance, it does not plan to request exemption from the Services Contract Act or the Davis-Bacon Act, both of which affect the wages that contractors working for DeCA must pay. Rather than convert its entire labor force to NAF status, DeCA may focus only on newly hired store personnel who do not have supervisory jobs. (Because of the importance of labor costs, however, even that more modest change could have a significant impact on DeCA's costs.)

Perhaps the most important weakness in the PBO approach is that although it attempts to give DeCA managers the same freedom enjoyed by managers in the private sector, it does not subject them to the incentives and constraints that competition imposes on the private sector. As long as DeCA remains a subsidized monopoly, its managers will not have the same performance incentives as managers of private stores. DeCA's survival depends not on profitability but on the ability of its senior officials to maintain political support within

DoD, the Congress, and private industry. That may mean continuing to operate small stores in locations where there are few active-duty personnel, continuing to stock only brand-name rather than less costly private-label products, or continuing to purchase soda overseas from the military exchanges rather than private suppliers. Without the pressures of competition, the ability to pay higher salaries to senior DeCA officials may not change the quality of management.

Another risk of the PBO initiative is that because of the incentives facing DeCA officials, some of their requests for waivers and legislation may be aimed less at improving the management of commissaries than at reducing the visibility of taxpayers' support. For example, DeCA might request that the Congress authorize DoD to provide utilities without charge in overseas locations (as DoD does for exchanges) or that the Congress require the Treasury to pay DeCA interest on its surcharge balances. Although both proposals would lower the agency's need for appropriations, neither would result in any federal budgetary savings. (In fact, freeing DeCA from the cost of overseas utilities might result in less careful use of resources and thus increase federal budgetary costs.)

Similarly, proposals that would exempt DeCA from the requirement to rely on DoD personnel, finance, and telecommunications systems might simply shift costs to other DoD customers.⁷ Other proposals, such as allowing DeCA to enter into long-term leases for buildings provided by private contractors, might reduce the need for appropriations in the short run but increase it over the long run. Still other proposals, such as extending commissary benefits to DeCA employees, could shift part of the cost of commissary operations to state and local governments, which would lose sales tax revenue as those employees spent less money in commercial supermarkets.

Even if DeCA managers used their freedom to operate in a businesslike manner, the result might not be desirable in an enterprise that depends on direct and indirect taxpayer support. For example, increasing sales to retirees and reservists is a businesslike response to the recent decline in the number of active-

7. To avoid that, DoD would need to set the prices that it charges DeCA for those services so as to accurately reflect the additional costs of providing the services.

duty personnel. Yet those additional sales would impose costs on taxpayers (including taxpayers at the state and local levels) even though the new patrons might have virtually no preference between commissaries and civilian supermarkets located near their homes. Rewarding managers for increased sales might also encourage black-market sales overseas and unauthorized use of commissaries in this country. Giving DeCA the ability to reward managers who increase sales, or the ability to generate revenue that would allow it to operate more stores for longer hours, are aspects of the PBO initiative that appear businesslike but could have unintended consequences for taxpayers.

Excusing DeCA managers from the rules that safeguard the behavior of most public agencies also introduces risks. For example, the legislation that permits DeCA to treat its baggers as independent contractors has helped control the agency's need for appropriations. But it has also left 10,000 workers who are in effect federal employees (people who work in commissaries, using commissary equipment, under the supervision of store managers) unprotected by minimum-wage or workers' compensation laws. Would a PBO abuse its right to grant bonuses to executives? Would it continue to rely on open and fair competition in procurement? Would it continue to support the social goals embodied in the Small Business Act or the Javits-Wagner-O'Day Act?

Because the PBO umbrella is wide enough to encompass changes that would increase costs as well as those that would decrease costs, each waiver or change in legislation proposed as part of DeCA's PBO initiative needs to be evaluated on its own merits. Moreover, the very need to create a unique, untested performance-based organization—operating under different rules than other DoD agencies or private firms—raises questions. If commissaries need more freedom to operate like private businesses, why not allow private firms to run them under government contract? Most government corporations have had some rationale for their federal status (at least historically) based on special market conditions that did not permit private firms to compete effectively. But the provision of groceries is clearly an area in which private firms and competition have proved successful. Finally, if an in-house retail system is desirable despite those concerns, why must there be both a NAF model for exchanges and a PBO model for commissaries? Might not the same organiza-

tional structure—or the same organization—suffice for both types of retail activities?

Alternative 2: Create a DoD Resale Authority

Another way the Congress could reduce the budgetary costs of DoD's retail activities would be to consolidate commissaries and exchanges into a single NAF-like organization, commonly referred to as a resale authority. That approach offers the greatest budgetary savings for the department. If the resale authority charged exchange prices for all goods (including food), this alternative could eliminate the need for appropriations to support DoD retail activities at bases in the United States.

To some extent, Alternative 2 is a logical extension of initiatives that are already under way. For instance, provisions in the 1996 defense authorization act encourage greater integration of exchange and commissary operations by allowing DeCA and the NAF activities to buy support services from each other if that will reduce costs.⁸ Moreover, DoD's PBO initiative and its moves to consolidate the three exchange systems could be seen as steps toward eventually integrating a NAF-like PBO with a single NAF exchange system.

The Benefits of a Resale Authority

By consolidating exchanges with commissaries, DoD would achieve many of the same types of savings that it would by merging the exchange systems—including savings from shared distribution, warehouse, transportation, personnel, and information systems. In particular, consolidating the separate warehouse and distribution systems used by DeCA and the exchanges overseas could offer significant savings.

Consolidation also might offer large savings at the store level. Military installations typically house both a

8. Those provisions are a modification of the so-called "mattress decision," which prohibits an appropriated-fund agency from avoiding competitive procurement rules by using a nonappropriated-fund instrumentality as its purchasing agent.

commissary and an exchange, frequently in adjoining buildings. Combining those stores would be a particular advantage for DoD in locations that cannot support separate stores efficiently. In fact, a number of small combined stores are already operating overseas under the auspices of NEXCOM, AAFES, or DeCA.

Even in locations served by larger stores, combining commissaries and exchanges could offer patrons the convenience of a wider range of goods and services under one roof. In the private sector, "hypermarts" are increasingly popular. They are large stores that sell both groceries and general merchandise and also offer a wide range of services such as prescription drugs, banking, and video rental. Combining exchanges and commissaries would allow DoD stores to look more like those in the private sector. (The transition to large, physically combined stores would be very gradual, of course, because it would depend on the construction of new facilities.)

In addition, converting all DeCA employees to NAF status might provide more flexibility and generate greater savings in labor costs than a PBO approach that maintained civil service status for supervisors and managers.

Pricing Strategies Under a Resale Authority

Conceptually, a DoD resale authority could offer patrons equal or greater savings than the current system of commissaries and exchanges does. Nonetheless, one reason the Department of Defense might be unwilling to pursue this alternative is that forming a single resale authority could lead to higher prices on commissary items and reduced benefits for patrons.

Although commissaries apply a uniform 5 percent markup to all goods, exchanges (like commercial retailers) apply different markups to different goods. Integrating the two systems into a single businesslike resale agency might eventually lead to variable markups for food as well. Of course, the Congress could provide the same level of appropriations to a resale authority that used variable markups as it now does to commissaries. Yet once the principle of selling goods at the wholesale cost plus a 5 percent markup was lost, there might be no logical basis for determining what the appropriation

—if any—should be. Any number of pricing strategies exist that would reduce the need for appropriations and still permit DoD to provide access to on-base shopping.

The Carswell Pricing Model. Today, DoD is experimenting with combined exchange and commissary operations at two U.S. bases (Carswell and Homestead) that were recently closed. At those bases, commissary food items are sold at the usual 5 percent markup, but nonfood items (such as paper goods, toiletries, and cleaning supplies) are sold at the higher (and variable) exchange markups. The Carswell pricing model would be an obvious alternative for a DoD resale authority operating combined commissary/exchange stores.

Nonfood items account for 28 percent of commissary sales: 9 percent are tobacco products, and 19 percent are other nonfood items. As of last year, tobacco is already sold in commissaries at exchange prices. Raising the price on other nonfood items to exchange levels—an average increase of 20 percent—would generate approximately \$200 million a year in additional revenue.⁹ About \$20 million of that, however, might be used to raise cost-of-living allowances for overseas personnel by enough to offset the price increases. If so, net budgetary savings would total about \$180 million a year.

Raise Average Food Prices by 10 Percent. Another way a DoD resale authority might reduce its need for appropriations would be to make its pricing policies for food items more consistent with those for nonfood items. For example, it might introduce variable markups for food and raise the average price by 10 percent. The revenue generated by that price increase would permit DoD to reduce annual commissary (or resale authority) appropriations by \$330 million while also providing \$60 million in additional COLAs to offset the price increases for overseas personnel.

If commissaries currently offer savings of 20 percent relative to commercial prices (as CBO estimates),

9. That estimate is relatively insensitive to different assumptions about the relationship between DoD prices and sales. If sales of nonfood products fell by 10 percent (a 0.5 percent decline in sales for each 1 percent increase in price), savings would still be \$200 million because reduced sales of goods priced at a 5 percent markup actually lead to savings. The estimate is based on a CBO analysis of the relationship between store sales in 1995 and store costs. That analysis indicates that a 10 percent decline in sales is associated with an 8 percent decline in operating costs (see Appendix C).

a 10 percent price rise would result in commissary prices that were 12 percent below commercial levels on average, taking into account both surcharges and sales taxes. That figure may be comparable with, or slightly more than, the average savings that DoD exchanges offer today.

If, instead, commissaries currently offer savings of 29 percent (DeCA's most recent estimate), a 10 percent price rise would leave commissary prices on food items 20 percent below commercial levels. That is equal to the goal set by exchanges for their items and is only 3 percentage points below the savings of 23 percent that DeCA reported in 1991. In addition, in the late 1940s, when the current commissary system was being established, 20 percent was the average markup in civilian grocery stores and thus the level of savings that a commissary selling at wholesale cost might have been expected to provide.

A 10 percent price increase would also make sales of food items a more cost-effective benefit. The only people who would stop shopping for groceries on-base or reduce their purchases because of the price increase would be those for whom the benefit from the forgone purchases (including the benefit from shopping in an exclusively military environment) did not justify the additional 10 percent payment. CBO estimates that a \$1 decrease in commissary sales would reduce operating costs by 13 cents and forgone taxes by 5 cents (see Appendix C).¹⁰ Thus, any sales that are lost because of a 10 percent price rise are sales for which the costs outweigh the benefits that patrons receive. If the opponents of price increases are correct when they argue that even modest increases would dramatically reduce commissary sales, that is evidence that the benefits from many sales—in the view of DoD customers—are less than the costs of the subsidy.

Charging exchange prices for nonfood items and raising the prices of food items by 10 percent would save DoD about \$510 million a year in appropriations for the combined resale authority (see Table 9). Because the prices of both food and nonfood items would remain below commercial levels, active-duty service members and retirees who now shop at commissaries

Table 9.
Savings from Various Pricing Strategies for a DoD Resale Authority (In millions of 1995 dollars)

Pricing Strategy	Annual Long-Run Savings to DoD
Raise Prices on Nonfood Items Other Than Tobacco to Exchange Levels	
Revenue gain	200
Offsetting increase in overseas COLAs	-20
Net Savings	180
Raise Prices on Food Items by 10 Percent	
Revenue gain	390
Offsetting increase in overseas COLAs	-60
Net Savings	330
Total Savings	510
Possible Offsetting Increase in BAS for Active-Duty Personnel in the United States	-120
Total Savings with BAS Increase	390

SOURCE: Congressional Budget Office.

NOTES: These estimates do not vary significantly with different assumptions about the impact of a price increase on sales. The reason is that although a reduction in sales lowers the additional revenue that would be generated, it also reduces the total costs that the stores incur in selling goods.

DoD = Department of Defense; COLAs = cost-of-living allowances; BAS = basic allowance for subsistence.

and exchanges might still receive a significant benefit. And although this pricing strategy would reduce sales, those lost sales would be ones that were clearly not cost-effective to make in the first place. The more valuable commissaries were to patrons, the smaller would be the impact on sales. Commissary and exchange benefits could continue to be regarded as an integral feature of military life.

The pricing options described above could actually improve the welfare of U.S. military families overseas. The increase in overseas COLAs would fully compensate them for the price rise. Thus, if they chose to, service members could continue to buy the same quantity

10. These figures do not include the cost of capital.

of goods from their commissaries. But because the large price differential that now exists between commissaries and local stores overseas would be lessened, overseas families might have a wider array of affordable options than they do today.

One major disadvantage of those pricing proposals is that they would reduce the benefits provided to current and former military personnel in the United States, many of whom feel that they have earned the right to buy commissary products at the 5 percent markup. In the United States, DoD could compensate active-duty service members as a whole for the higher food prices they would face by adding \$120 million annually to the basic allowance for subsistence, or BAS.¹¹ (That would equal about \$125 more a year for each active-duty member who receives the allowance). An increase of \$180 million annually would compensate active-duty personnel for the increases in both food and nonfood prices. However, there would be no practical way to compensate retirees for the price increases or to fully compensate those active-duty personnel who rely most heavily on DoD commissaries.

Creating a single DoD resale authority would not necessarily require changing commissary prices or shifting commissary workers to NAF status. Likewise, the Congress could authorize a commissary PBO to adopt the pricing options outlined in Table 9 without creating a unified resale authority. Nonetheless, the creation of such an authority and the integration of exchange and commissary stores would make changes like those more likely. As a result, people who wish to preserve the commissaries' 5 percent markup and civil service labor force might not find a DoD resale authority an attractive option.

Maintaining the Accountability of In-House Retail Activities

The Congressional Budget Office's review of NAF exchange operations suggests some steps that might keep a unified resale authority accountable to DoD and the

Congress. Although those steps apply to an authority that would include commissaries and exchanges, they could also be used to establish better accountability for the three separate exchange systems, a consolidated exchange system, or other NAF morale, welfare, and recreation activities.

One step would be for the Congress to enact enabling legislation that would acknowledge the federal status of the DoD resale authority, spell out its powers and responsibilities, and incorporate it into the federal budget. The resale authority could be organized either as a DoD revolving fund with the status of a PBO or as a separate government corporation. In either case, it could be granted the same freedom that exchanges enjoy as NAF activities. In the enabling legislation, the Congress would authorize the fund or corporation to spend receipts from its sales to cover its operating costs on a revolving basis. To ensure Congressional control over discretionary spending, however, the fund would require specific Congressional authorization before it could spend its earnings to support DoD's MWR or quality-of-life programs.¹²

Putting DoD's NAF retail activities into the budget would make their treatment consistent with the principles established by the President's Commission on Budget Concepts in 1967 and provide a better picture of the total level of federal resources. Such a change would have no effect on total federal outlays or the deficit in those years when, under the current system, NAF receipts matched NAF expenditures. In years when spending exceeded receipts, federal outlays would rise by the difference; in years when spending was less than receipts, federal outlays would fall.

Alternative 2 would create savings by giving managers better visibility of and control over their use of resources. A single revolving-fund or corporation budget would account for all of the operating costs of the resale authority, both those now paid with appropriated funds and those paid with nonappropriated funds. Under the current setup, the exchange systems' statements of NAF income and expenses do not show appropriated funds used to support exchanges (including funds for overseas transportation and utilities, and the cost of

11. The new BAS might be designed to cover the total cost of food consumed by the service member and, for members with dependents, to provide a subsidy equal to some fixed percentage of the food costs incurred by the typical family. That approach, however, would tend to overcompensate married personnel with small families and undercompensate those with large families.

12. This requirement might prove unnecessary. A resale authority that sold commissary items at subsidized prices would be likely to require appropriations rather than generate earnings.

base support services such as police and fire protection and exterior building maintenance). As a result, the managers who operate AAFES's overseas bakery, ice cream production line, and meat-processing line do not take into account their utility costs or the cost of transporting raw materials from the United States. The separation of appropriated funds from nonappropriated funds may have encouraged the exchanges to spend over \$40 million in 1995 transporting beer and soda overseas rather than seek local suppliers.¹³

This budgetary treatment would also eliminate the process by which appropriated-fund support provided to exchanges generates illusory NAF earnings that are spent outside the budget process. The resale authority would rely on receipts from patrons to reimburse DoD for the cost of any services the department provided. In 1995, those costs for military exchanges were slightly greater than the exchanges' total NAF earnings.

The Budgetary Impact of a Resale Authority

The total budgetary savings provided by Alternative 2 depend on many factors. Those factors include savings from converting commissary employees to NAF-like status, savings from consolidating stores and headquarters, increased revenue from higher prices on commissary items, and the reimbursement of appropriated-fund support provided by DoD to the exchanges. Those gains would be partially offset by increased requirements for overseas COLAs and appropriated-fund support for MWR activities. Although the overall impact of those factors is uncertain, this alternative could save DoD as much as \$800 million to \$1 billion a year in appropriated funds. That estimate takes into account the cost of raising appropriations to offset the loss in NAF dividends for Category A and B morale, welfare, and recreation activities. Of the four alternatives that CBO examines in this study, the resale authority would offer DoD the greatest budgetary savings.

13. Of course, the exchanges could continue to spend \$40 million a year to ship beverages overseas if they felt the benefits to service members justified it.

The Risks and Limitations of a Resale Authority

Despite the potential for large budgetary savings, this alternative would entail some risks. One is that MWR programs would suffer from the decline in exchange earnings. Rather than relying on NAF earnings, the Congress would have to appropriate funds to support those programs. Although doing so would permit the Congress to limit the level of resources used to subsidize Category C activities such as hotels and clubs, it would also introduce a risk that the Congress might not provide support for the Category A and B activities that DoD considers essential. (CBO estimates that the Congress might have to appropriate as much as an additional \$200 million a year to Category A and B activities to offset lost exchange earnings.) Another risk is that a resale authority forced to pay the cost of overseas transportation and utilities might not continue to provide the same level of support to service members overseas.¹⁴

An additional problem is that a DoD resale authority with immunity from state and local taxes and access to interest-free capital would not compete with off-base merchants on a level playing field. As a result, it might not be driven to control operating costs in the same way as private retailers. Without effective competition, an in-house enterprise may fail to minimize its operating costs even if it is given all of the freedom that private firms have to set prices and manage resources.

Moreover, a resale authority of this type leaves unresolved some important questions about the nature and extent of DoD's role in retail activities. Even though the resale authority might not receive large appropriations, total taxpayer support in terms of forgone taxes and forgone return on capital would be substantial. (In 1995, forgone taxes and return on capital for commissaries and exchanges in the United States totaled more

14. That risk might be overcome by an overseas subsidy based on the equation:

$$\text{overseas subsidy} = B (\text{overseas sales} - 1995 \text{ overseas sales})$$

where B is the subsidy provided for each additional dollar of overseas sales and 1995 is used as a base year. B might be set so that it just covered the expected cost of transporting an additional dollar of goods overseas. That formula would ensure that increases in overseas sales were rewarded and declines penalized without requiring a large level of appropriated support for the exchanges and without distorting managers' use of resources. The expected value of the subsidy payments would be close to zero.

than \$1.4 billion, or about 12 percent of sales.) Because discount retailers and supermarkets operate on narrow margins, that subsidy might encourage DoD to continue running a large in-house retail system that would attract shoppers from off-base. In order to limit the need for appropriations, a DoD resale authority might continue to sell tobacco and alcohol at low prices and to target retirees by offering upscale merchandise. And in the absence of large annual appropriations, there would be little opportunity to debate the costs and benefits of that system.

Alternative strategies that would change the focus and scope of DoD's retail role are those, such as Alternatives 3 and 4 below, that emphasize the social rather than the budgetary costs of DoD's activities.

Alternative 3: Rely on Private Contractors

This alternative would require DoD to contract out for retail activities at military bases. Some proponents of this approach argue that it would reduce DoD's budgetary costs without reducing the benefits provided by on-base stores. According to a 1996 report by the Defense Science Board, commissaries operated by private grocery chains under DoD contracts could provide the same benefits as today's commissaries at an annual savings of \$100 million to \$200 million.¹⁵ In its analysis, CBO reached a different conclusion: although contracting offers many advantages that could reduce social costs, it would shift more of those costs into the defense budget and thus might not be an appealing option from DoD's budgetary perspective.

Some Advantages of Contracting for Retail Activities

Contracting avoids many of the problems associated with the current NAF system for exchanges, the PBO initiative for commissaries, or a DoD resale authority. Contractors would collect the \$14 billion that patrons

now spend at DoD-operated exchanges and commissaries and would pay the expenses of those operations. Only a small portion of that money—in the form of concession fees paid to DoD—would come directly under the control of federal employees. Those fees might enter the budget as offsetting receipts.

If DoD relied on contractors, there would be no need for unique personnel or accounting systems designed to provide in-house enterprises with enough freedom to minimize costs while still ensuring adequate control of federal resources. Contracting would automatically achieve the savings possible by freeing DeCA from civil service constraints, federal acquisition rules, and the requirement that it use DoD services for transportation, printing, and accounting. Regional contracts with large general-retail merchandisers would eliminate the cost to DoD of maintaining a warehouse and distribution system to serve stores scattered throughout much of the world.

Most important, the use of contractors would introduce competition. Past studies of commercial activities performed by public and private enterprises suggest that competition can have a dramatic effect on costs. In addition, using a formal competitive process to award contracts might safeguard the contractor from the political pressure that vendors, or potential vendors, might bring to bear. In-house DoD activities, which depend directly on Congressional appropriations, can be in a vulnerable position when powerful industry groups seek to have them provide particular goods (such as U.S.-bottled soda in overseas locations) or exclude particular goods (such as private-label merchandise in commissaries).

Because DoD exchanges have experience using concessionaires to provide some goods and services at military bases, Alternative 3 is less risky than it might appear. Such contractors already account for 8 percent of total exchange sales and 36 percent of exchange earnings. Some of the contracts—including those for pay-telephone services, McDonald's franchises at Navy bases, and optical services for AAFES—are negotiated at exchange headquarters on a worldwide basis. Others, such as for florists, barbershops, and espresso stands, are negotiated with contractors that may serve only a single base or region. In both cases, contractors are required to meet specific performance standards and make payments—usually on the order of 20 percent of

15. Defense Science Board, *Achieving an Innovative Support Structure for 21st Century Military Superiority* (November 1996), p. II-104.

gross sales—to the exchange system. Unlike the managers of DoD's in-house operations, concessionaires face periodic competition when their contracts expire.

This option would greatly expand the scope of activities that were contracted out, however. Although concessionaires already provide many consumer services, DoD does not use them to operate main retail stores, liquor stores, or commissaries. Another difference between this option and DoD's current use of concessionaires is that if price increases were not permitted, the contracts for operating commissaries and many retail stores would require payments from DoD to the contractor rather than concession fees paid by the contractor to DoD.

Some Potential Limitations of Contracting

A policy of relying on contractors would not entirely eliminate DoD's involvement in retail activities. The department would be active in setting policies, writing contracts, selecting contractors, and monitoring performance. In addition, DoD might still have to plan and pay for constructing on-base facilities. Although in the past some concessionaires with 10-year contracts have risked constructing small buildings on military bases, the level of guarantees that would be necessary to make large construction projects on government land attractive to private firms might result in what was, in effect, government construction. Moreover, a contract period that was long enough to allow private firms to recoup a major investment such as construction would reduce the effectiveness of competition.

Contract Costs. Because of the costs of negotiating and monitoring contracts, it is sometimes more cost-effective to keep activities in-house even when a contractor can carry them out more cheaply. Predicting what such negotiating and monitoring costs would be for DoD retail operations is difficult. But if the cost of monitoring base-support contracts is a guide, they might well equal 10 percent of the contractors' operating costs, or perhaps 2 percent to 3 percent of total sales.¹⁶ In the context of \$14 billion in annual commis-

sary and exchange sales, those costs would be significant.

The need to monitor contractors would be greatest for activities, such as commissaries, that received subsidies from DoD in order to sell goods at prices well below the market level. Those contractors might try to generate profits by reducing the quality of their service. Contractors that operated on-base retail stores in the United States in competition with discount stores would require limited monitoring, since they could not reduce the quality or selection of their merchandise without losing sales.

The exchanges' favorable experience with concessionaires is one indication that contracting costs may not be prohibitive for retail activities. As a percentage of sales, it could cost less to contract for large retail stores than for the services that concessionaires now provide. DoD could use regional contracts to limit the number and cost of contract negotiations. That approach would allow DoD to take advantage of the regional warehousing and distribution capabilities of private grocers and general retailers. At the same time, it could encourage competition as grocers or retailers with one regional contract tried to outperform other contractors.

DeCA already relies on contracts for many store-level services, including shelf stocking, custodial services, and in-store delis and bakeries. Contracts for each service must be negotiated separately, and commissary managers must monitor the performance of each contractor. Having a single regional contract with a private grocer that used its own employees to provide most of those store-level services might actually reduce DeCA's total cost of negotiating and monitoring contracts.

Places Where Contracting Might Prove Difficult.

Some analysts argue that private firms would "cherry pick" and be unwilling to operate DoD's smaller, more isolated stores. That concern may not be realistic, however. DoD has already been very successful in getting contractor support for its small stores. For example, it relies on vendors (and distributors paid by vendors) to provide daily deliveries of goods to small stores, just as the exchanges rely on their worldwide phone contracts to provide pay-telephone service for deployed personnel in Bosnia as well as at large U.S. bases. If contracting

16. See Alan J. Marcus, *Analysis of the Navy's Commercial Activities Program*, CRM 92-226.10 (Alexandria, Va.: Center for Naval Analyses, July 1993), p. 26.

was expanded, regional contracts that bundled profitable and unprofitable stores together would be one way to forestall "cherry picking." Alternatively, contracts to operate smaller, more costly stores could require smaller concession fees (or provide larger DoD subsidies). To encourage responsiveness to the department's needs, the contracts might permit DoD to make discretionary awards to the contractor as well as payments based on a percentage of sales.

A more serious problem might be the need to negotiate agreements with foreign countries that would permit DoD contractors to provide goods to service members overseas without paying import duties or value-added taxes. In addition, existing agreements between the United States and foreign governments that require overseas commissaries and exchanges to use local citizens in some jobs might need to be modified to cover DoD contractors. How difficult those negotiations would be is unclear. The exchange systems have already arranged with several European nations to permit some private, off-base gas stations to provide tax-free gasoline to service members. The extent to which exchange and commissary activities are concentrated in a few countries—Germany, Great Britain, Japan, South Korea, and Italy—could aid in negotiations. Where necessary, arrangements might be made for the U.S. government to hold title to the goods that the contractor would sell.

If DoD opted for greater reliance on contractors, a reasonable approach would be to apply it first in the United States, perhaps on a regional basis. Yet as DoD reduced the scope of its U.S. retail operations, the potential savings from contracting out overseas stores might increase. A recent analysis by Standard & Poor's noted that the goods sold by retailers are increasingly global in source and that, in the future, retail chains may also be global in scope.¹⁷ The expertise needed to operate U.S.-style stores could be provided overseas either by U.S. grocery and retail firms or by international firms. Several of the largest grocery chains in the United States, including A&P and Giant, are primarily owned by European companies. In addition, many as-

pects of overseas commissary operations—such as running in-store delis and bakeries—are already contracted out. Because contractors frequently handle shipping, warehousing, overseas distribution, and shelf stocking of commissary goods, DeCA employees may not touch the goods sold in overseas stores until they go over the scanner at the cash register. Although many overseas stores are small, that may not be an obstacle to contracting them out. The difference between DoD and private-sector costs may be greatest at such stores, where flexibility in the use of employees is important.

Secondary Goals. Another potential problem is that contractors might fail to pursue all of the goals that exchanges do. Compared with government enterprises, contractors might provide less support to small businesses, hire fewer workers with disabilities, and not provide workers with the same level of health care and retirement benefits. If DoD chose to, however, it could write those goals into its contracts. In addition, DoD could require contractors to give priority to military family members seeking jobs, or it might set specific goals for the percentage of family members employed.

The Budgetary Cost of Contracting

Although contracting out exchange and commissary operations appears feasible, the transition to a contractor-run system would disrupt ongoing retail activities and impose costs on DoD—including the cost of terminating DeCA's civil service labor force and the exchanges' NAF labor force. Paying those costs would be worthwhile to DoD only if it could count on significant long-term savings from using contractors. One major impediment to contracting is that although it would be likely to produce significant savings, much of the savings would not appear in the DoD or even the federal budget.

Under current law, contractors that provide retail services on military bases must pay sales taxes, excise taxes, and income taxes (see Box 7). Over the long run, they must also earn a market rate of return on their capital. If contractors operated on-base commissaries and exchanges in the United States and sold the same mix of goods that DoD sells now, those costs would be

17. Standard & Poor's, *Retailing Current Analysis*, Standard & Poor's Industry Surveys, vol. 163, no. 41, section 1 (October 12, 1995), p. R64.

Box 7.**The Tax Treatment of In-House and Contractor-Run Activities at Military Bases**

Commissaries and exchanges enjoy some important tax advantages relative to the private contractors, or concessionaires, who operate on military bases (see table at right). Commissaries and exchanges do not pay federal taxes on their corporate income, and they share in the general immunity that entities of the federal government have from state and local sales and income taxes. Moreover, they are generally able to avoid the cost of state and local excise taxes (even though their immunity from direct state and local taxation does not apply in that case because excise taxes are levied on the manufacturer rather than directly on the retailer). The reason is that many states exempt manufacturers from paying excise taxes on goods sold to the federal government. And where they do not, the federal government can purchase goods out of state in places where that exemption applies and then rely on its immunity from direct state and local taxes to import the goods tax-free.

Concessionaires operating on military bases, by contrast, pay the same federal, state, and local taxes as private businesses operating off-base. In addition, manufacturers often pass along the cost of state and local excise taxes in the wholesale prices that they charge to concessionaires.

The tax status of stores run by the Department of Defense may explain why DoD does not rely on concessionaires to operate its main retail stores at military bases. Sales taxes are an important factor for retail stores, where the value added may be a small percentage of the sales price. In discount stores, for example, the wholesale cost of goods typically accounts for 70 cents of each dollar spent by customers. Sales taxes account for 7 cents, and operating costs (including the return on

capital) account for 23 cents. Thus, a DoD-run store, which does not collect sales taxes, can charge the same price as a private retailer even if its operating costs are almost 30 percent greater ($7/23 = 0.3$). DoD stores that sell tobacco or alcohol—goods that in the private sector are frequently subject to state and local excise taxes as well as sales taxes—have an even greater advantage. In addition, the large amount of inventory that retail stores must carry further enhances DoD's advantage. DoD-run stores do not need to account for the cost of holding inventory, although a concessionaire operating a retail store would need to earn a market return on that investment.

DoD does rely on concessionaires to provide many consumer services. One explanation is that sales taxes are a less important consideration for service activities, where the value added accounts for a large percentage of the sales price. Another factor may be that capital costs are less important for consumer service activities, which do not have to hold large quantities of inventory. Despite the success of contractors in providing consumer services, DoD may find that it is not cost-effective to expand the use of concessionaires to operate retail stores unless the tax treatment (and possibly the treatment of capital costs) for contractors and in-house activities is equalized.

One way to equalize the effects of sales and income taxes on DoD-run stores and concessionaires would be to repeal the Buck Act of 1940, which made contractors operating at military bases responsible for state and local taxes. In the case of commissaries, extending tax-free status to contractors might not seriously threaten local tax revenue or merchants. All commissaries are

around \$1.4 billion a year.¹⁸ By comparison, annual operating costs for U.S. commissaries and exchanges appear to be about \$2.6 billion, based on DoD and

NAF budgets. Even if competition among contractors could reduce operating costs for on-base activities by 20 percent to 30 percent, contracting is unlikely to be an attractive alternative for DoD as long as its budget reflects the full cost of contractor-run operations but not the full cost of its own retail activities. For many activities, the amount of appropriated-fund support that DoD's stores receive is much less than the subsidies that DoD would have to pay to induce contractors (given their current tax treatment) to provide the same services at the same prices.

18. That amount includes about \$500 million in forgone taxes and return on capital for U.S. commissaries (shown in Table 3) and about \$900 million for U.S. exchanges (shown in Table 7). Capital costs for contractors would be less than those figures indicate to the extent that DoD provide buildings without charge. Contractors would have to provide inventory and equipment, however. In addition, DeCA benefits from legislation permitting it to treat baggers as independent contractors. Unless that right was extended to contractor-run commissaries, the need to pay baggers' salaries could add another \$100 million a year to contractors' costs.

already operated on a tax-free basis by the government, and the size of the commissary system is held in check by the size of the appropriated subsidy. In the case of exchanges, however, providing tax-free status to contractors would pose many problems. It would reduce local revenue because some exchange sales (those made by contractors) are currently subject to sales taxes. An increase in concessionaires operating at military bases could threaten established off-base merchants. In addition, exempting on-base contractors from taxes might give DoD an incentive to provide a tax haven for private businesses, collecting concession fees that were just under the cost of the forgone taxes.

Repealing the Buck Act would not resolve the advantage that DoD-run stores enjoy because of their exemption from state and local excise taxes on alcohol and tobacco. An alternative approach that would address

excise taxes would be to make DoD's in-house stores recognize the cost of all forgone taxes. The Congress might require DoD to make payments to the Treasury's general fund in lieu of those taxes, or it might waive commissaries' and exchanges' immunity from state and local taxation. The Hayden-Cartwright Act of 1936 already waives exchanges' immunity with respect to state taxes on gasoline and other motor fuels.

That approach would be welcomed by state and local governments as well as by private merchants. From the perspective of the federal budget, however, it would increase the cost of using below-market prices as a form of military compensation. Even if DoD stores made payments to the Treasury in lieu of taxes, the higher prices they might have to charge could cause their customers to do more shopping off-base, thus shifting revenue to state and local governments.

Taxes Paid by Stores Operating on Military Bases in the United States

	DoD-Run Stores	Concessionaries
Corporate Income Taxes		
Federal	No	Yes
State and local	No	Yes
Sales Taxes (State and local)	No ^a	Yes
Excise Taxes		
Federal	Yes	Yes
State and local	No ^a	Yes

SOURCE: Congressional Budget Office based on data from the Department of Defense.

a. Except for state taxes on motor fuels.

Effects on the Scope of On-Base Retail Activities

Using contractors to provide commissary and exchange operations would not necessarily change the scope of DoD's retail activities. If it chose to, the department could offer subsidies to contractors that would enable large retail and liquor stores on military bases to continue providing low prices and attracting patrons from off-base. Contractors could sell the same goods and services at the same prices as DoD's current in-house

activities. The estimates for Alternative 3 shown in Table 8 assume that would be the case.

Nonetheless, once the full cost of the subsidies provided to on-base retail activities became visible in DoD's budget, the department might no longer view subsidized prices as a cost-effective form of compensation. Although the changes shown for Alternative 3 in Table 8 do not reflect it, contracting out would almost certainly result in higher prices for many goods at DoD's U.S. stores and a corresponding reduction in the

scale and scope of DoD's retail activities in the United States. The impact might be greatest on those activities—main retail stores, liquor and tobacco sales—that benefit the most from DoD's immunity from state and local taxation. The contractors' need to earn a market rate of return on capital would also reduce DoD's involvement in financial investments that now benefit from access to "free" capital.

Activities that depend on their proximity to people living and working on-base (convenience stores and services such as stand-alone fast food, pay telephones, and barbershops) would be less affected, although their sales might decline as the main retail stores attracted fewer patrons. Many of those convenience-oriented service activities are already handled under concession contracts. DoD's current practice of using contractors primarily to provide services rather than to operate retail stores may be explained in part by the fact that sales taxes and the cost of capital are more important factors for retail stores. In service activities, the value added is a high percentage of the sales price, and there is no need to carry expensive inventories.

Contracting out commissary and exchange activities rather than operating them in-house would shift costs that are now outside the defense budget into that budget, reducing social costs while increasing DoD's budgetary costs. Thus, even though competition can lower total social costs, the likely outcome under a strategy that relied on contracting would be higher prices and a reduced scope for on-base retail activities in the United States. In order to retain a high-quality force in that environment, DoD might need to offer additional cash compensation, as Alternative 4 envisions.

Alternative 4: Revise Incentives for DoD's Retail Activities

Under this alternative, DoD would pay the full cost of its in-house retail activities—including forgone taxes and the forgone return on capital. However, the department would remain free to choose between in-house and contractor operations. It would also be free to determine which activities it would subsidize and to what extent. Facing the full costs of providing subsidized,

on-base retail activities would give DoD an incentive to objectively evaluate the benefits of its retail program (including intangible factors such as the impact on military cohesion and spirit). The department would have an incentive to limit the size and scope of that program to the point where the benefits provided by additional activities were balanced by the costs.

One way of implementing this alternative would be by requiring DoD to make payments to the Treasury in lieu of forgone taxes and requiring it to borrow capital from a federal credit account at the pretax, private rate of return. In addition, requiring exchanges to reimburse DoD for any in-kind support they receive would make the costs paid by DoD more visible. The department could use cash allowances to compensate active-duty personnel if those steps, as expected, led to higher prices in DoD stores.

How DoD Might Respond to Revised Incentives

In theory, the Congress could increase the defense budget to offset the expected tax and interest payments that DoD would make. That would allow the department to protect the morale and welfare of its personnel by providing goods and services at the same prices using the same mix of contract and in-house stores as it does today. Doing so would cost DoD an additional \$1.6 billion a year—the value of the forgone taxes and return on capital. Faced with the full cost, however, DoD would most likely reassess the cost-effectiveness of using on-base stores with subsidized prices as a form of compensation.

The department would have a particularly great incentive to raise prices on merchandise sold in the United States, where the cost of forgone taxes and return on capital equals about 12 percent of sales receipts, or \$1.4 billion a year (see Table 10). One of the disadvantages of subsidized prices as a form of compensation is that assessing the benefits is more difficult than assessing the costs. Nonetheless, under reasonable assumptions about the relationship between financial savings and patrons' benefits, DoD might find that the full cost of providing subsidized stores in the United States exceeded the benefits to both active-duty and retired personnel by about \$700 million annually.

Moreover, under the budgetary incentives provided by Alternative 4, DoD might find that it could save \$1.5 billion a year by giving up subsidized prices and relying instead on \$500 million in annual cash allowances for active-duty personnel to attract and retain a high-quality force. (In Table 10, that \$1.5 billion is the total cost of subsidies minus the benefits to active-duty personnel.) To the extent that promises of future benefits influence the retention decisions of active-duty service members, cash allowances would need to be greater than \$500 million. But to the extent that some of the benefits of the current system go to active-duty personnel in skills and grades that do not experience retention problems, the necessary cash allowances would be smaller.

If DoD responded to this change in incentives by eliminating subsidies in its U.S. stores (so receipts from patrons covered all of the costs of its retail activities, including taxes and the cost of capital), its retail role would change substantially. The focus of on-base activities would shift toward convenience stores and services such as fast food, dry cleaning, and barbershops, which target the needs of members living and working on-base and do not need subsidies to attract customers. On-base supermarkets and retail stores would no longer draw many off-base patrons. Sales of liquor and tobacco would decline sharply as prices rose to commercial levels.

Table 10.
Annual Costs and Benefits of Maintaining DoD's Retail Activities in the United States Under Alternative 4 (In millions of 1995 dollars)

	Commissaries	Exchanges	Total
Subsidy Costs			
Current DoD costs	680	-60 ^a	620
Additional DoD costs under Alternative 4 ^b	<u>490</u>	<u>910</u>	<u>1,400</u>
Total	1,170	850	2,020
Possible Benefits to Patrons^c			
Active-duty patrons	300	200	500
Retired and reserve patrons	<u>600</u>	<u>200</u>	<u>800</u>
All Patrons	900	400	1,300
Total Subsidy Costs Minus Possible Benefits to Active-Duty Patrons	900	600	1,500
Total Subsidy Costs Minus Possible Benefits to All Patrons	300	400	700

SOURCE: Congressional Budget Office based on 1995 data from the Department of Defense (DoD).

NOTE: Possible benefits to patrons and subsidy costs minus benefits are rounded to the nearest \$100 million.

- This is the current net cost to DoD (CBO's estimate of the cost of the appropriated-fund support received by U.S. exchanges minus their nonappropriated-fund earnings).
- Payments to the Treasury in lieu of forgone taxes and return on capital.
- These estimates assume that the value of benefits to patrons is 80 percent of patrons' apparent financial savings. CBO calculated apparent financial savings based on a 20 percent price difference between commissaries and commercial supermarkets and an average 7.5 percent price difference (the midpoint of the 5 percent to 10 percent range) between exchanges and commercial retailers.

Eliminating subsidies would ensure that the remaining activities operated as efficiently as possible. Forced to compete against private, off-base merchants on a level playing field, DoD's in-house facilities would be able to attract customers only if they could control their costs. In addition, contractors would no longer be at a disadvantage because of their tax treatment, and DoD might find that many of the activities remaining on-base could be provided more economically by contractors selected on a competitive basis than by DoD-run stores.

The Effects on Social and Budgetary Costs

Standard economic theory indicates that if DoD eliminated subsidies in its U.S. stores, society as a whole would save. Those savings are illustrated in Table 10 by the \$700 million difference between total subsidy costs and the benefits for all patrons of DoD's retail activities. The potential for savings to society arises because of differences in the efficiency of DoD and commercial retailers and the fact that subsidies encourage patrons to consume goods whose value to the patron is less than the cost of providing them.

Despite its social benefits, this change in budgetary incentives would not reduce costs to the federal or DoD budget much below current levels. As sales in DoD stores declined, so too would DoD's payments of interest and taxes to the Treasury. Much of the benefit from Alternative 4 would accrue to state and local governments and private investors.

In the extreme case that all sales from DoD's retail activities in the United States shifted to the private sector, DoD and the federal government might save \$200 million a year compared with the current system. That estimate takes into account the appropriated-fund costs and the NAF earnings of those activities, as well as the cost of providing \$500 million in annual cash allowances to active-duty personnel.¹⁹

19. Based on 1995 data, the annual cost of the current retail system to DoD is about \$700 million. That is equal to DoD's appropriated-fund support for U.S. commissaries (\$670 million), plus its appropriated-fund support for U.S. exchanges (\$160 million), minus the NAF earnings of U.S. exchanges (\$220 million) that DoD could use for costs that might otherwise be paid with appropriated funds, plus the NAF earnings of concession activities that would continue to operate (\$90

The Effects on DoD's Activities Overseas

Paying a private-sector rate of return on the capital used by overseas commissaries and exchanges would cost DoD about \$210 million a year. DoD could choose to protect overseas personnel by not raising prices in its stores and instead using other funds to pay those costs.

Yet service members living overseas might benefit more if DoD eliminated all subsidies (including the current appropriated-fund subsidy) and set prices in commissaries and exchanges to cover the full cost of their operation. Under the current system, the price difference between DoD stores and local stores in many overseas locations is so great that service members may feel they have no choice but to shop on-base. That can be true even at bases in urban areas where local stores offer an attractive selection of goods. The overseas cost-of-living allowance reflects the prices in DoD and local stores and the extent to which members shop in each. If on-base stores charged higher, unsubsidized prices, service members would receive higher allowances and would be freer to use local stores.

Higher prices for goods in DoD stores overseas would also help to discourage black-market activities. In some locations, the potential gains from selling DoD goods on the black market pose a significant temptation for military personnel and their families. According to the commander of U.S. forces in Korea, "The persistence and pervasive nature of black-market activities here undermines the character of our community and our ability to teach the values we hold dear."²⁰

Substituting higher COLAs for subsidized prices overseas, however, would not necessarily reduce costs to U.S. society or the federal budget. Part of the benefit from cash allowances that were spent in local stores would accrue to the host nation. Nonetheless, a compensation system that is cost-effective in the broadest

million). That estimate does not take into account the impact of reduced capital requirements on Treasury borrowing costs. Savings would be larger if some in-house stores were replaced with fee-paying concessions.

20. Colonel John D. Kennedy, quoted in Eric Schmitt, "Army Cuts Its Beer Ration, and Brewers Are Furious," *New York Times*, July 5, 1997, p. 1. Sales of beer by exchanges in South Korea fell by half when the Army cut the number of cases that a soldier could buy each month from 30 to eight.

sense may be one that protects service members from the risk of facing poor living conditions on overseas tours. If so, the money used for higher overseas COLAs would be well spent.

One disadvantage of relying on subsidized commissaries and exchanges overseas is that it encourages DoD officials to focus on the welfare of the retail system rather than the welfare of military personnel. A DoD retail office that managed unsubsidized contractors instead of in-house enterprises might develop innovative approaches that would allow more overseas personnel to take advantage of the shopping opportunities offered by the local economy. Such approaches could include arranging for access to interpreters, special shopping hours, or vouchers (like those now provided for gasoline overseas) that would exempt local purchases from value-added and other business taxes. Such initiatives might become more valuable in the future as the integration of European markets and the growth of retail chains overseas enhanced the availability in local stores of familiar U.S. and international brand-name products.

Other Costs and Benefits of Subsidized Prices

Economic analysis suggests that in the long run, subsidized retail activities are not a cost-effective alternative to cash compensation for service members in the United States. That does not necessarily mean that DoD would eliminate all subsidies and rely entirely on cash compensation if it was faced with the full costs of those activities. Because some costs and benefits fall outside the conventional economic framework, DoD might conclude that paying some subsidies was worthwhile. In addition, cost-benefit analyses that focus on the long run overlook important one-time transition costs.

The Gift Effect. One benefit of subsidies that falls outside conventional economics might be called the "gift effect." It explains why private firms sometimes give their employees gifts (such as vacations or holiday hams) in addition to cash compensation. Even though the employee might be willing to trade the gift for a very small cash payment, the fact that the company chose to give him or her a gift conveys a message. In the military—where symbols of belonging are particularly important—subsidized in-kind goods and services

that are available only to military personnel (health care, housing, child care, groceries, and retail goods) may be important not just for what they provide but for the message they send. Moreover, those benefits may send a message to all active-duty personnel, even those who do not choose to use them.

The extent to which service members view commissaries and exchanges as a symbol of belonging rather than simply as a low-cost and attractive shopping option is unclear. At least some members—particularly those at the beginning of their military careers—question the need for such stores at U.S. bases and express a preference for a system of cash allowances. In the words of one junior Army officer, "Personally, I would much rather have additional money added to my salary to cover purchasing groceries and food items on the local economy."²¹

Transition Effects. Analyses that focus on the long-term costs and benefits of cash and in-kind compensation fail to account for the disruption and one-time costs associated with moving from one system to another. Even though active-duty personnel as whole might be compensated for the change, a shift to cash allowances would produce individual winners and losers. In addition, it would be virtually impossible to compensate retirees, who are the prime beneficiaries of the current system.²² Among those retirees are people who made decisions about jobs and housing based in part on access to commissaries and exchanges. Other losers would include employees of the current system (many of whom are family members of military personnel) and the private industry (vendors and military brokers and distributors) that supports DoD's retail system.

Concern within the Defense Department and the Congress about windfall losses might encourage DoD to continue providing some price subsidies even if it faced the full cost of doing so. One possible outcome

21. Letter from Kimberly Phelan, 1st Lt., U.S. Army, quoted in Cathy Riddle, "Patrons Value Their Shopping Benefit," *Military Market* (January 1994), pp. 10, 18, 21.

22. Retirees vary greatly in the distance they must travel to reach DoD stores and in their use of those stores. A system of cash allowances that adequately compensated retirees who use the stores would greatly overcompensate those who do not and thus prove prohibitively expensive.

would be incremental policies that gradually reduced but did not entirely eliminate price subsidies.²³

On-Base Shopping, Subsidized Prices, and the Nature of the U.S. Military. DoD leaders may also feel that on-base stores with subsidized prices shape the nature of the U.S. military in ways that economic cost-benefit analyses do not capture. That feeling could make DoD either more or less anxious to reduce its retail role. Subsidized on-base shopping (as well as child care, housing, and medical care) may be very valuable if military leaders want to preserve a unique military way of life distinct from that found in civilian communities. By the same token, subsidized on-base shopping may be undesirable if they want to encourage greater integration of the active-duty force with the U.S. population as a whole.

DoD's large retail role may have other drawbacks for the military as well. Operating a \$14 billion a year retail business with 96,000 employees could distract DoD leaders from their core mission; sales of low-cost tobacco and alcohol—two of the most profitable retail activities for DoD—could impair the health and readiness of service members; and access to goods at below-market prices could lead to fraud and scandal among store officials (as it has in the past) or undermine the character of military personnel by tempting them to engage in black-market activities.

23. Reductions in the largest price subsidies—including those on commissary items—have the potential to significantly reduce social costs because the inefficiency caused by a subsidy is proportional to the subsidy squared.

The Future of DoD's Retail Role

Debate is growing within the Department of Defense about how to reduce the appropriated costs of commissaries and how to protect and increase the NAF earnings of exchanges. Options under discussion within DoD include pursuing the PBO initiative for commissaries, consolidating the exchange system, creating a single resale authority, and contracting out for commissary operations.

CBO's review of retail activities, however, suggests that the budgetary cost of operating on-base stores may not be the most important issue facing DoD's retail system. A more fruitful debate might focus on the nature and purpose of a system that increasingly serves retirees and reservists rather than active-duty personnel in overseas or isolated U.S. locations. That debate might start from the recognition that subsidized prices are not a cost-effective form of compensation once costs outside the DoD and federal budgets are considered. It might examine how DoD's immunity from state and local taxation makes the department reluctant to consider any reduction in its role. Taking into account the broad economic costs that the DoD retail system imposes on U.S. taxpayers, that debate might focus on whether DoD's current role in operating subsidized retail activities at military bases in the United States is justified based on their contribution to the military way of life and based on the disruption and costs that a change would entail.

Appendixes

The Deadweight Loss from Price Subsidies

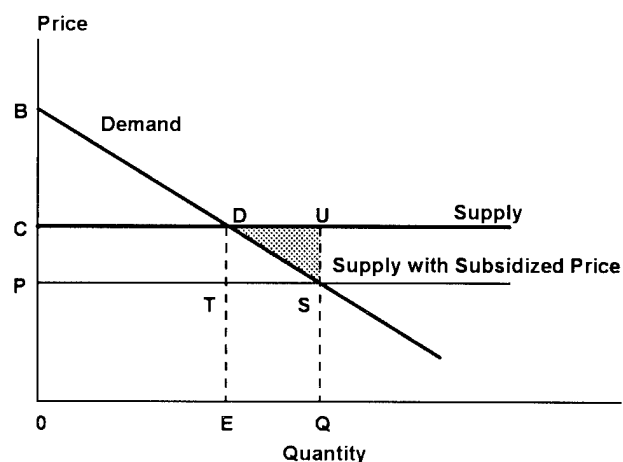
According to standard economic theory, price subsidies are inefficient because they distort people's decisions about consumption, leading them to consume goods that are worth less to them than the goods cost to provide. Subsidized prices at commissaries and exchanges would result in that type of inefficiency regardless of whether the stores were run by the government or by contractors.

The economic loss that results from subsidized prices is illustrated in Figure A-1. The line labeled "demand" shows the (hypothetical) quantity of commissary or exchange goods that patrons might choose to buy at different prices. (The demand line is drawn so that it shows only the effects that changes in relative prices have on purchases, not the indirect effects that higher prices have on real income and hence on purchases.) The line labeled "supply" shows the cost of providing additional commissary or exchange goods. For ease in exposition, that cost is assumed to be constant. In the absence of subsidies, patrons would purchase the quantity E at the price C (indicated by the intersection of the supply and demand lines). The value of those goods to patrons is represented by the area under the demand line between 0 and E, and the cost of those goods is the rectangle OCDE. The net benefit that unsubsidized commissaries or exchanges provide to patrons is the difference between the value of the goods and what patrons pay for them, or the area of the triangle BCD.

If a subsidy lowered the price that patrons pay from C to P, the quantity of goods purchased would rise from E to Q. The amount that patrons pay for the quantity Q would equal the area of the rectangle OPSQ, and their

net benefit would increase from the area of the triangle BCD to that of the triangle BPS. That increase—which is equal to the area of CPSD—measures how much patrons would gain from the subsidy. The cost of the subsidy to taxpayers, however, would equal the area of the rectangle CPSU. Thus, the subsidy's cost to taxpayers would exceed its benefit to patrons by an amount equal to the area of the shaded triangle DUS. That difference is known as the deadweight loss due to the subsidy. It reflects costs that would be incurred by taxpayers but not offset by any benefit to patrons, and it results from the distortion in consumption decisions caused by the price subsidy.

Figure A-1.
The Deadweight Loss from a Price Subsidy



SOURCE: Congressional Budget Office.

Estimating the Nonbudgetary Costs of DoD's Retail Activities

Many of the costs of the Department of Defense's retail activities do not appear in either the DoD or the federal budget. Those non-budgetary costs include the forgone return on capital invested in exchanges and commissaries as well as forgone state and local tax revenue.

The Forgone Return on Capital

For this analysis, the Congressional Budget Office (CBO) used a 15 percent annual rate to estimate the return that taxpayers forgo by having assets invested in commissaries and exchanges rather than in equally risky retail businesses. That rate is based on the before-tax rate of return on capital in the U.S. economy. The average yearly return on common stocks (the arithmetic mean) was 12 percent between 1926 and 1987, and the geometric mean was 9.9 percent.¹ The 15 percent rate is based on that 9.9 percent figure adjusted to account for an estimated combined federal and state corporate tax rate of 37 percent. Industry reports for supermarkets and general retailers typically show average before-tax earnings that are greater than 15 percent

1. Roger G. Ibbotson, *Stocks, Bonds, Bills, and Inflation: Historical Returns, 1926-1987* (Homewood, Ill.: Research Foundation of the Institute of Chartered Financial Analysts, 1989), p. 14. The arithmetic mean is the sum of the returns in each year divided by the number of years. The geometric mean is the rate that—if it prevailed steadily throughout the entire period—would yield the same total return on an initial investment as the actual pattern of year-to-year returns.

of equity, but it is unclear how those data are affected by the treatment of bankruptcies and the mix of equity and debt capital.

Although using a private-sector rate of return is appropriate for cost-benefit analysis, not all of the benefits that taxpayers would receive from reducing their investment in commissaries and exchanges would be reflected in the federal budget. The average rate of return on Treasury borrowing—which was approximately 5.5 percent in 1996—might be appropriate for estimating budgetary effects, assuming that the federal assets invested in DoD's retail activities would otherwise be used to reduce the deficit.

Commissaries

CBO estimates that commissary assets in 1995 equaled almost \$1.5 billion (excluding the surcharge balances held by the Treasury).² That amount comprises \$1,740 million in buildings and equipment, \$450 million in inventory, and \$110 million in miscellaneous items, minus an \$840 million difference between accounts receivable and accounts payable. CBO did not attempt to estimate the value of land used by commissaries, although DoD has alternative uses for land at many bases. The figure of \$1,740 million for the depreciated value of buildings and equipment is a CBO estimate based on the Defense Commissary Agency's (DeCA's)

2. Because CBO did not include the interest that the Treasury saves by holding surcharge balances as commissary income, it would be inappropriate to count the forgone return on those balances as a cost.

assessment of its required annual capital spending and of the service lives of those investments. DeCA does not hold title to the buildings that it constructs and does not track their value.

To verify that \$1.5 billion is a reasonable estimate of commissary assets, CBO used the average ratio of assets to sales in the civilian supermarket industry (0.30). Multiplying that ratio by 1995 commissary sales (\$5.7 billion, including surcharges) produces a figure for commissary assets (\$1.7 billion) that is close to the \$1.5 billion estimate.

Applying the 15 percent rate of return to assets of \$1.5 billion yields an estimated forgone return on capital of approximately \$220 million a year. CBO allocated that cost between U.S. and overseas commissaries based on their share of the total square feet of commissary buildings.

Exchanges

To estimate the forgone return on capital for DoD exchanges, CBO likewise applied the 15 percent before-tax, private-sector rate of return to the total value of exchange assets. The three exchange systems reported assets of \$3.3 billion in 1995—\$2.3 billion for the Army and Air Force Exchange Service (AAFES), \$800 million for the Navy Exchange Command (NEXCOM), and \$200 million for Marine Corps exchanges. The estimated forgone return on those assets is about \$500 million a year. (See Table B-1 for separate estimates for each exchange system.)

That estimate will be too low if actual assets are greater than the \$3.3 billion that the exchanges report in their balance sheets. One reason actual assets may be greater is that two-thirds of the buildings that exchanges use were not constructed with nonappropriated funds and thus do not appear in the systems' balance sheets. The \$3.3 billion also excludes the value of land. Estimating total asset value another way—by using the average ratio of assets to sales for general-merchandise chains in the private sector (approximately 0.45)—yields a figure of \$3.8 billion for exchange assets.

A more serious omission in CBO's estimate of the forgone return on exchange assets may be the failure to account fully for the value of the monopoly rights that

DoD grants to the exchanges. This analysis uses the annual fees paid by concessionaires (\$120 million, after subtracting overhead costs) as an estimate of that value. For example, the fees that telephone concessionaires pay to the exchange system represent the return forgone because DoD assigns control over telephone service to the exchanges rather than auctioning off that right itself. Concession fees provide only a minimum estimate of the total value of monopoly rights: they do not account for the value of rights that the exchanges exercise themselves rather than granting to concessionaires. However, no practical way exists to assign a value to those rights.

Forgone State and Local Sales Taxes

Taxes, like the return on capital, are an important element in the cost of goods and services in the U.S. economy. Because the federal government is immune from state and local taxation, DoD's commissaries and exchanges do not collect sales taxes. The tax revenue that state and local governments forgo as a result is another nonbudgetary cost of DoD's retail system. (Taxes forgone by foreign governments are not a cost to U.S. society and thus are not included in this analysis.)

Commissaries

CBO estimates that state and local governments forgo roughly \$230 million a year in sales tax revenue because of commissaries. That figure is based on U.S. commissary sales of \$4.6 billion in 1995 and a tax rate of 5 percent. A 1996 DeCA survey comparing commissary prices and commercial prices with and without sales taxes found that the average sales tax for a typical supermarket basket (containing both food and nonfood items) was 5 percent.³ In using that tax rate, CBO implicitly assumed that the dollars patrons did not spend in commissaries would be spent buying the same mix of

3. The data were gathered as part of a survey comparing commissary prices at 30 randomly selected bases with local prices; the survey reported savings before and after taxes. See Defense Commissary Agency, *1996 Market Basket Comparison Study* (prepared by Wirthlin Corporation, March 1996).

Table B-1.
Annual Economic Subsidy of DoD's Three Exchange Systems (In millions of 1995 dollars)

	AAFES	NEXCOM	Marine Corps Exchanges	Total
Business Income				
Sales Receipts Minus the Wholesale Cost of Goods Sold ^a	1,500	440	120	2,060
Other Business Income ^b	<u>280</u>	<u>80</u>	<u>30</u>	<u>390</u>
Total	1,780	520	150	2,450
Operating Costs				
Costs Paid by DoD				
Paid from appropriations ^c	260	100	10	370
Paid from nonappropriated funds	<u>1,560</u>	<u>450</u>	<u>120</u>	<u>2,130</u>
Subtotal	1,820	550	130	2,500
Costs Not Paid by DoD				
Forgone return on capital	350	120	30	500
Forgone monopoly rents	80	20	20	120
Forgone sales taxes	270	70	30	370
Forgone excise taxes	<u>60</u>	<u>30</u>	<u>10</u>	<u>100</u>
Subtotal	760	240	90	1,090
Total	2,580	790	220	3,590
Economic Subsidy				
Total Subsidy (Total operating costs minus business income)	800	270	70	1,140
Memorandum:				
Sales Receipts ^a	6,140	1,790	510	8,440
Subsidy as a Percentage of Sales Receipts	13	15	14	13
NAF Earnings (Business income minus costs paid from nonappropriated funds)	230	60	30	320
Subsidy Provided by DoD (Operating costs paid by DoD minus business income)	40	30	-20 ^d	50

SOURCE: Congressional Budget Office based on 1995 data from the Department of Defense.

NOTES: Business income and operating costs exclude the wholesale cost of goods sold.

DoD = Department of Defense; AAFES = Army and Air Force Exchange Service; NEXCOM = Navy Exchange Command; NAF = nonappropriated fund.

- a. For direct (nonconcession) operations only.
- b. Includes concession fees (before allocating overhead) and income from financial investments.
- c. Includes the costs of transporting goods overseas and utilities in overseas stores as well as the estimated cost of the base-support services that DoD provides in-kind.
- d. This number is negative because the estimated appropriated-fund support that DoD furnished to Marine Corps exchanges in 1995 was less than their reported NAF earnings.

food and nonfood items at commercial stores. (If shoppers shifted purchases toward nonfood goods, which are typically subject to higher sales tax, the forgone revenue would be higher. If they saved more or bought more items that are not subject to sales tax, the forgone revenue would be lower.)

Exchanges

In the case of exchanges, CBO used the tax rates of individual states to estimate forgone state sales taxes and relied on a more aggregate approach to estimate forgone local sales taxes. First, CBO multiplied exchange sales in each state by that state's general sales tax rate. That approach yielded an average state tax rate, weighted by exchange sales, of 5.4 percent. Next, to estimate the local sales tax rate, CBO multiplied that average state tax rate by the ratio of local to state sales tax receipts in the United States as a whole. That produced an average local sales tax rate of 1.7 percent—for a combined state and local rate of 7.1 percent. Applying the combined rate to the exchanges' 1995 retail sales (excluding gasoline) yields an estimate of about \$370 million in sales tax revenue forgone as a result of exchange operations.⁴ (That figure assumes that if service members did not shop at exchanges, they would spend the same amount of money on retail purchases in private stores subject to sales taxes.)

Forgone Excise Taxes on Alcohol

The alcoholic beverages that the exchange systems buy for resale are not subject to state and local excise taxes (although they are subject to federal excise taxes in the United States).⁵ CBO estimates that state and local governments lost approximately \$50 million in excise

taxes in 1995 from alcohol sales by exchanges. That figure should be regarded as only an approximation, however. Estimating forgone excise taxes is complicated by the fact that state and local governments levy different taxes on beer, wine, and distilled spirits. Moreover, although those taxes are typically based on the volume and alcohol content of the beverage, the exchange systems were able to provide data only on their sales receipts from alcoholic beverages, not on the physical quantity sold.

To calculate forgone state and local excise taxes on alcohol, CBO first estimated average federal excise tax rates (as a percentage of the commercial retail price) for beer, wine, and distilled spirits sold for home consumption. Doing that required information on both the federal excise tax rates for each of those beverages (which, like many state and local rates, are based on volume and alcohol content rather than on sales price) and typical retail prices. The retail prices that CBO used (\$0.83 for 16 ounces of beer, \$4.78 for a liter of table wine, and \$8.86 for an 80-proof liter of vodka) were those collected by the Bureau of Labor Statistics for use in the consumer price index. Based on that information, the average rates for federal excise taxes (as a percentage of the retail price) were 8.7 percent for beer, 7.1 percent for wine, and 32.2 percent for spirits.

Next, CBO used those average federal rates to derive an average state and local tax rate based on the ratio of state and local excise tax revenue to federal excise tax revenue for the nation as a whole. State and local excise revenue from beer equals 54 percent of federal revenue. For wine, the figure is 68 percent, and for spirits, 67 percent. Applying those percentages to the estimated federal tax rates above yields average state and local excise tax rates of 4.7 percent for beer, 4.8 percent for wine, and 21.6 percent for spirits. Those estimated rates are clearly uncertain, but they may still provide a reasonable estimate of the amount of tax revenue forgone by state and local governments.

To determine that amount, CBO first calculated what the beer, wine, and spirits sold by AAFES and NEXCOM in the United States in 1995 would have cost at commercial prices—assuming those are 20 percent above exchange prices, on average. (NEXCOM sales data were available only for wine and spirits combined and for beer and carbonated beverages combined. CBO used AAFES data on the ratio of wine to spirit

4. In this context, retail sales refer to direct (nonconcession) sales of goods, excluding services and food. Services and food are excluded because in many states they are not subject to the same general sales tax rate that applies to other purchases. (Nonetheless, that approach could underestimate forgone sales taxes because many states and localities tax food bought in restaurants at a higher rate than other purchases.) Gasoline is excluded because the exchanges pay state sales taxes on sales of fuel.

5. Commissaries do not sell alcoholic beverages.

sales and the ratio of beer to carbonated beverage sales to develop separate estimates for sales of each beverage by NEXCOM.) Valued at commercial prices, AAFES exchanges in the United States sold \$410 million in alcoholic beverages in 1995, and NEXCOM exchanges sold \$120 million.

Those figures on exchange sales do not equal the amount of forgone commercial sales, however. The reason is that exchange patrons would choose to buy less alcohol if they had to face the higher prices that commercial retailers charge. CBO estimated the actual sales forgone by commercial retailers using a price elasticity of demand of -0.7 for beer and -1 for wine and spirits—implying that a 10 percent increase in price leads to a 7 percent decrease in purchases of beer and a 10 percent decrease in purchases of wine and spirits. (Those elasticities are consistent with empirical analyses of the price elasticity of demand for alcohol found in the economics literature.)⁶ Applying the estimated state and local excise tax rates to those forgone alcohol sales indicates that AAFES sales cost state and local governments about \$38 million in excise tax revenue in 1995, and NEXCOM sales cost another \$12 million.

The Marine Corps provided a total sales figure for all alcoholic beverages of \$29 million in 1995. CBO calculated the forgone revenue on those sales (\$3 million) using the ratio of forgone taxes to alcohol sales for NEXCOM. (That method assumes that the mix of beer, wine, and spirits sold in Marine Corps exchanges is the same as in Navy exchanges.)

Forgone Excise Taxes on Tobacco

Although many state and local governments impose excise taxes on tobacco, the tobacco products purchased for resale in DoD commissaries and exchanges are exempt. To calculate an average tax rate for forgone excise taxes on tobacco, CBO used data on ciga-

rette taxes in each state (as a percentage of the commercial retail price of cigarettes in that state) weighted by NEXCOM and AAFES tobacco sales in that state. Before weighting, CBO added 2.5 percent to each state's tax rate to account for local excise taxes (since, for the United States as a whole, local excise tax revenue from tobacco equals 2.5 percent of state excise tax revenue). The resulting estimates indicate that state and local excise taxes on tobacco equal about 20 percent of its retail sales price.

Exchanges

DoD exchanges sold about \$240 million in tobacco products (primarily cigarettes) in 1995. Assuming that tobacco prices in exchanges are 25 percent lower than in the private sector, that quantity of tobacco would have cost \$320 million at commercial prices. But because paying higher commercial prices would have reduced consumers' demand for tobacco, the actual amount of tobacco sales lost by private retailers because of exchange sales is less—about \$260 million. (CBO derived that estimate using a price elasticity of -0.55. That elasticity, which is consistent with the long-run price elasticities for tobacco used in the economics literature, implies that a 10 percent increase in tobacco prices would cause a 5.5 percent decline in the amount purchased.) With an average state and local excise tax rate of 20 percent, the revenue lost because of those forgone sales is about \$50 million.

Commissaries

For their part, commissaries sold \$455 million in tobacco products in 1995. Since DeCA estimates that commissary prices for tobacco that year were 41 percent lower than in the private sector, that quantity of tobacco would have cost \$770 million at commercial prices. But factoring in the reduced consumer demand for tobacco because of higher commercial prices, the actual level of sales lost by private retailers because of exchange operations would be \$480 million (again assuming a price elasticity of -0.55). If the average state and local excise tax rate is 20 percent, the tax revenue forgone on those tobacco sales is \$96 million.

6. See Congressional Budget Office, *Federal Taxation of Tobacco, Alcoholic Beverages, and Motor Fuels* (August 1990), p. 72.

The Statistical Relationship Between Costs and Sales for U.S. Commissaries

The impact of many policies involving the commissary system depends on the relationship between changes in sales and changes in costs to the Department of Defense and society. Would expanding sales to reservists increase costs? Would raising commissary prices save the federal government money not only because of the higher prices but also because the loss of sales it would produce would decrease costs? What about policies that would reward managers for increasing commissary sales? Because not all costs vary with sales, information about the average cost per dollar of sales does not answer those questions.

The Congressional Budget Office (CBO) analyzed the relationship between unit costs (costs per dollar of goods sold) and sales for 220 commissaries in the United States, using 1995 data provided by the Defense Commissary Agency (DeCA). The cost for each store included all supplies, salaries, and other operating costs that could be tracked directly to individual stores, regardless of whether they were paid for with appropriated funds or with receipts from the 5 percent surcharge. In addition, the per-store figure included an estimate for the costs of the services provided by DeCA headquarters and of the personnel and financial services provided by the Defense Logistics Agency and the Defense Finance and Accounting Service. (DeCA allocated headquarters costs equally among stores under the assumption that larger stores did not require any more headquarters services than smaller ones. The other estimated costs were allocated partly by sales.) The costs of capital were not included.

To capture the relationship between costs and sales, CBO estimated a regression of the form $\text{cost/sales} = a + b(\text{sales}) + c(1/\text{sales}) + d(\text{sales}^2)$. That functional form allows for the kind of nonlinear relationship between unit costs and sales that is seen in Figure 4 in Chapter 2. It allows increases in sales in small stores to be associated with large declines in unit costs even though increases in sales in large stores have little impact on unit costs. That regression yielded the following statistics:

Variable	Estimated Coefficient (Standard error)
a	.313
b	-1.007x10 ⁻⁵ (1.338x10 ⁻⁶)
c	596.952 (14.346)
d	1.170x10 ⁻¹⁰ (2.141x10 ⁻¹¹)

R-square equals 0.93, there are 220 observations, and all of the coefficients are significant at the 1 percent confidence level.

If that regression is used to predict costs based on actual 1995 sales at the 220 commissaries, total estimated costs are \$773 million. If sales in each store are reduced by 10 percent (a total reduction of \$454 mil-

lion), the regression predicts total costs of \$712 million. Thus, a 10 percent decline in sales is associated with an 8 percent decline in operating costs—or a \$1 decrease or increase in sales (distributed among all stores in proportion to their sales) is associated with a 13 cent decrease or increase in operating costs, not including capital costs.

In the case of an increase, not all of the 13 cents in additional costs would have to be paid through appropriations; surcharge receipts would rise by 5 cents. Depending on how much of those receipts would be used

for capital costs, the extra appropriations needed would range from 8 cents to 13 cents. (Those figures would be slightly higher, however, if DeCA's assumption that additional sales do not lead to any additional headquarters' costs is incorrect.)

Besides increasing DeCA's need for appropriations, each additional \$1 in commissary sales raises forgone state and local taxes by about 5 cents. Thus, from a social perspective, an additional \$1 in commissary sales raises subsidy costs by between 13 cents and 18 cents.