clines throughout the period with the decline in the unexpended balance, and is not sufficient in any year to compensate for the negative net interest before income. The unexpended balance, therefore, decreases continuously through 1994 when it reaches $6.8 billion. In this case, the uncommitted balance drops continuously through 1994, turning negative in 1993. Thus, with no reduction in tax rates and with full user funding of FAA spending, the unexpended balance declines roughly by half and the uncommitted balance is consumed by 1993 so that the trust fund has unfunded commitments of $2.0 billion by 1994.

CONCLUSIONS

Under the baseline projection for the 1989-1994 period, the accumulated surplus and the large unexpended balance in the trust fund would persist through 1994 despite a 50 percent reduction in tax rates for aviation system users. Table 9 shows projected total revenue and outlays from the trust fund under the baseline and presents alternative projections of total FAA spending based on capital-only and user-pay allocations of spending in this period.

Total FAA spending from 1989 through 1994 is projected to be $41 billion. Under current policy, the trust fund portion of these outlays would be $20.7 billion and the general fund share would be $20.3 billion. Tax revenue supplied by private-sector users of the aviation system would be $15.7 billion, or $5 billion less than trust fund spending in this period. Interest income would more than compensate for this funding gap, so that the unexpended balance would actually increase from $11.1 billion to $12.5 billion by the end of 1994. The accumulated surplus would decline, as discussed earlier, to $3.6 billion because of increasing commitments against the unexpended balance.

Since the purpose of the trust fund is to track the receipt and spending of earmarked tax revenues, there are two ways of viewing these projected trust fund balances and the alternative projections discussed below. One can compare the share of FAA funding for which private users would be responsible under the alternative views of the trust fund with projections of trust fund spending under current policy. This comparison would show the degree to which the current

method of accounting for aviation spending deviates from these alternative user shares. However, the current projection of trust fund financing of FAA spending relies on interest earned on an existing unexpended balance to meet part of its funding share. Since each of the alternative concepts of user funding (if they had been in place from the start of the trust fund) would have yielded different trust fund balances at the end of 1988, comparing the projected user cost shares with projected trust fund support produces a misleading picture of user financing of FAA spending. A second approach to analyzing future support for FAA spending that avoids this problem is to compare only pro-

TABLE 9. SUMMARY OF PROJECTED TAX REVENUE, FAA EXPENDITURES, AND TRUST FUND BALANCES
(Totals for fiscal years 1989-1994, in billions of dollars)

	Total 1989-1994
Excise Tax Revenue	
With tax rate reduction	15.7
Without tax rate reduction	25.8
Total FAA Outlays	41.0
Trust fund portion[a]	20.7
General fund portion	20.3
Total FAA Outlays	41.0
Capital share	17.5
Noncapital share	23.5
Total FAA Outlays	41.0
Private-sector share	34.6
Public-sector share	6.4
Status of Trust Fund at End of 1994 Under Baseline Projection	
Unexpended Balance	12.5
Uncommitted Balance	3.6

SOURCE: Congressional Budget Office.

a. Excludes $191 million for the aviation weather services program that would be financed by the trust fund.

jected user tax revenue with projected user shares of spending in the alternative funding scenarios. Both of these approaches are illustrated below.

Capital-Only Perspective

The capital and noncapital shares of projected FAA spending are shown in Table 9. Projected capital spending totals $17.5 billion in the 1989-1994 period, while the remaining $23.5 billion of FAA spending consists of noncapital expenditures. Compared with the projections of trust fund spending under current policy, users would be financing $3.2 billion ($20.7 minus $17.5 billion) more than their capital share of expenditures on the aviation system. In this sense, then, the trust fund could be considered to be subsidizing general fund expenditures for noncapital programs. On the basis of tax revenue alone, however, user support for aviation spending--$15.7 billion--would be $1.8 billion less than the $17.5 billion capital share of FAA spending. From this standpoint, the general fund would be subsidizing users for this part of capital expenditures not financed by current tax revenue. If the tax rates were not reduced in 1990, however, users would pay a projected $25.8 billion, while the capital share of FAA spending is only $17.5 billion. In this case, users would be subsidizing the general fund by $8.3 billion over the 1989-1994 period.

User-Pay Perspective

The full private-sector share of the $41 billion in total FAA spending during 1989-1994 is $34.6 billion, and the public-sector share is $6.4 billion. Compared with projected trust fund financing of $20.7 billion, the difference of $13.9 billion could be considered a general fund subsidy of private-sector users of the aviation system. Comparing tax revenue alone with the full user share, the difference between projected tax revenue of $15.7 billion and the full user share of $34.6 billion is $18.9 billion. If one believes that users, through the trust fund, should finance their full share of system costs, then the unexpended balance in the trust fund exists only because of the long-term general fund subsidy for aviation services and would be negative if a full user-pay system had been in place from the beginning of the trust fund. As a result, the only resources in this case that would be available to fi-

nance the future private-sector share of FAA spending would be future tax revenue. Therefore, $18.9 billion is a more accurate estimate of the general fund subsidy for private-sector users of the aviation system from this perspective.

If the rates for aviation excise taxes were not reduced in 1990, tax revenue for the period would total $25.8 billion. Even absent the tax rate reduction in 1990, therefore, private-sector users would receive a general fund subsidy of $8.8 billion over the next six years. This amount represents the difference between tax revenue of $25.8 billion and the private-sector share of projected FAA spending of $34.6 billion. The tax rate reduction in 1990 more than doubles the general fund subsidy of private-sector users.

This subsidy has general budgetary implications as well. The tax provisions that are to take effect in 1990 were designed to reduce the accumulated trust fund surplus that arose because of previous subsidies either through an increase in FAA spending from the trust fund or through the tax rate reduction. The result would be a projected $10.1 billion reduction in taxes for a group that is currently not paying its share of aviation system costs. If private-sector users of the aviation system were not subsidized by general taxpayers over the next six years, but were required to pay excise taxes equal to their share of aviation system expenses, then the tax rate reduction would have to be eliminated and tax rates would, in fact, have to be increased from their current levels to finance the $8.8 billion difference between projected tax revenue and the private-sector share of costs. The impact on federal budget deficits over the 1989-1994 period of requiring private-sector users to fund their full share of aviation system spending would be a cumulative reduction of $14.2 billion compared with the CBO baseline.[3]

Taken in isolation, trust fund balances are misleading as indicators of whether too much or too little tax revenue is being collected from private-sector users of the aviation system, or whether too little is being spent from the trust fund. The answers to those questions depend on which aviation programs users are being asked to fund. Whether the current balances in the trust fund should be viewed as

3. Because of offsetting reductions in tax revenue elsewhere, the tax rate increase would only result in a deficit reduction equal to 75 percent of the higher tax revenue.

evidence of funds hoarded by the government for nonaviation purposes and that rightfully belong to users depends on whether one believes that the trust fund should finance all the private costs imposed on the system, or limit itself to capital costs only.

CHAPTER IV

OPTIONS FOR AVIATION SPENDING AND FINANCING

Four options are presented below for the future financing of aviation programs. These options consider only Federal Aviation Administration programs for aviation and do not address other federal spending that benefits the aviation sector, such as National Air and Space Administration outlays for aeronautical research and development. The options are:

- Continue current policy, leaving the current trust fund and aviation programs unchanged;
- Eliminate the tax rate reduction while leaving spending programs and trust fund accounting unchanged;
- Restructure the trust fund clearly as a capital-only account and set aviation excise taxes at a level sufficient to finance only FAA capital spending; or
- Transform the trust fund into a true user-pay system in which all private-sector costs of the FAA are accounted for by the trust fund and financed through aviation excise taxes.

Each option is accompanied by a projection of trust fund revenue, outlays, and balances in the 1990-1994 period.

Whatever the Congress decides to do about these and other financial issues, there will be continuing questions as to how much each user group within the private sector should pay for the aviation system, how much expansion of aviation infrastructure is required, and how the use of the aviation system can be made more efficient through a different way of pricing the system's services to users.[1]

1. These questions are addressed in two other Congressional Budget Office studies: *Policies for the Deregulated Airline Industry* (July 1988); and *New Directions for the Nation's Public Works* (September 1988).

OPTION I: CONTINUE CURRENT POLICY

The Congress could decide to continue current policy. This is the option reflected in the baseline projection presented in Chapter III. The main advantage of Option I is that the current program is in place and would require no legislative action until 1990, when authorizations for trust fund taxes and some of the trust fund spending programs expire. In addition, under the CBO baseline, this option would produce a 38 percent decrease in the uncommitted balance in the trust fund by the end of 1994. The projected year-by-year effects of following this option on trust fund tax revenue, outlays, and unexpended and uncommitted balances are shown in Table 10.

This option has significant disadvantages. First, it would continue the confusion concerning both annual and accumulated surpluses in the trust fund, since the trust fund would be neither a dedicated capital fund nor a full user-pay system, but a hybrid of the two. Second, though the accumulated surplus would decline significantly, it would still persist. Third, from the perspective of the fund seen as a dedicated capital source, the fund would be receiving less in tax revenue after 1990 than the projected capital spending for aviation. Fourth, from the perspective of the fund seen as a full user-pay system, private-sector users would be receiving a $17.8 billion subsidy from general taxpayers over the 1990-1994 period. Fifth, also from a user-pay perspective, the trust fund would lose $10.1 billion in

TABLE 10. PROJECTION OF TRUST FUND REVENUE, OUTLAYS, AND BALANCES UNDER OPTION I
(By fiscal year, in millions of dollars)

	1990	1991	1992	1993	1994
Trust Fund Tax Revenue	2,692	2,116	2,285	2,411	2,652
Trust Fund Outlays	3,152	3,409	3,644	3,866	3,943
Unexpended Balance, End of Year	13,494	13,368	13,126	12,726	12,462
Uncommitted Balance, End of Year	6,760	6,006	5,277	4,440	3,636

SOURCE: Congressional Budget Office.

revenue over the five years because of the tax rate reduction for private-sector users of the aviation system, a group that even before the halving of tax rates is not paying its full share of the system's costs.

OPTION II: ELIMINATE THE TAX RATE REDUCTION

Option II proposes to eliminate the tax reduction that would occur in January 1990 under CBO baseline projections. It would not change current FAA spending or trust fund accounting for aviation spending. It differs from Option I only in the projection of tax revenue and the resulting effects on the trust fund balances for the 1990-1994 period. Under this option, tax revenue for the 1990-1994 period would be $10.1 billion higher than under the CBO baseline. The year-by-year effects on trust fund tax revenue, outlays, and the unexpended and uncommitted balances in the trust fund are shown in Table 11.

The principal advantage of Option II is that, by maintaining current aviation excise tax rates, it would decrease the federal budget deficits projected in the baseline. The cumulative effect would be a $7.6 billion decrease in the deficits over the 1990-1994 period relative to baseline projections. In addition, from a user-pay perspective, this option would increase the degree to which private-sector users fund their share of FAA spending and would avoid reducing the taxes of a

TABLE 11. PROJECTION OF TRUST FUND REVENUE, OUTLAYS, AND BALANCES UNDER OPTION II
(By fiscal year, in millions of dollars)

	1990	1991	1992	1993	1994
Trust Fund Tax Revenue	3,833	4,122	4,455	4,700	5,176
Trust Fund Outlays	3,152	3,409	3,644	3,866	3,943
Unexpended Balance, End of Year	14,687	16,766	19,089	21,582	24,703
Uncommitted Balance, End of Year	7,953	9,404	11,240	13,296	15,877

SOURCE: Congressional Budget Office.

group that is not even currently financing its share of aviation system costs. Finally, from a capital-only perspective, trust fund tax revenue would be more than sufficient to finance the projected capital outlays in each year.

In fact, without the tax rate reduction in 1990, nearly $7.6 billion in additional capital spending would be available over the next five years under this option without increasing the deficit from baseline levels. Increases in capital spending might speed the building of new airport and airway capacity. On the other hand, it is difficult to know the optimal level of investment required in the aviation system when prices are not being charged for FAA services. Further, the current program of airport investment might not produce the optimal levels and types of airport investments, and congestion might not be quickly or efficiently reduced, if airport grants are not targeted to the correct airport categories.[2] Further, investment in modernizing and enlarging the airway system would probably face technological constraints on the rate of development and production of the new generation of airway equipment.

This option also has several disadvantages. First, as in Option I, it would continue the confusion concerning both annual and accumulated surpluses in the trust fund, since the trust fund would still be neither a dedicated capital fund nor a full user-pay system. Second, the accumulated surplus would increase relative to the baseline. Third, from the perspective of the trust fund as a dedicated capital account, system users would be paying more in tax revenue than the projected capital spending in the baseline. Fourth, from the perspective of the trust fund as a user-pay account, there would still be a $7.6 billion subsidy of private-sector users during the 1990-1994 period.

2. See Congressional Budget Office, *Policies for the Deregulated Airline Industry*, chap. 3; and *New Directions for the Nation's Public Works*, chap. 3.

OPTION III: RESTRUCTURE THE TRUST FUND AS A DEDICATED CAPITAL FUND

Option III would clearly define the trust fund as a dedicated capital account. As such, it would serve as the repository for aviation excise taxes paid by private-sector users of the aviation system and would finance the full capital costs of the aviation system from this revenue. FAA capital expenditures include spending for airport grants-in-aid, airway system facilities and equipment, and research, engineering, and development. This option would set tax rates at levels just sufficient to cover the annual capital program of the aviation system.[3] It would eliminate the accumulated trust fund surplus by canceling it at the end of 1989, and eliminate interest payments on the remaining cash balance. (The Administration proposed eliminating the investment of the unexpended balance in the trust fund by the Treasury in its proposal for reauthorization of the trust fund in 1985.) Table 12 presents a summary of the effects of these changes.

The tax revenues shown each year in Table 12 are just equal to projected budget authority for capital spending in those years. Since outlays lag budget authority, the outlays from the trust fund would not equal budget authority but would yield either a positive or a negative cash balance in the fund. Since all of these balances are committed, however, the uncommitted balance in the trust fund would be zero throughout the period. If interest was paid on the unexpended (but committed) balance, the interest income would produce a surplus in the account. In this option, interest would not be paid, but if it were, adjustments to future tax rate levels could be made based on the interest earnings of the trust fund to prevent the growth of an uncommitted balance.

This option would essentially terminate the current trust fund and replace it with a dedicated capital fund. In the process, the cur-

3. Setting user taxes equal to capital spending in each year would not necessarily equal actual capital consumption in that year. Since capital assets are long lived, the actual consumption of investment expenditures occurs over a number of years. Charging users the full cost of capital goods in the year they are purchased is equivalent to expensing rather than depreciating these expenditures. While current capital spending may serve as a proxy for capital consumption, there is the possibility that current users may be over- or undercharged for capital use if bulges in capital spending occur. For a treatment of these issues as regards the proper allocation of capital costs to users, see Federal Aviation Administration, *Allocation of Future Federal Airport and Airway Costs*, FAA-APO-87-12 (December 1986).

rent accumulated surplus would be eliminated. Besides this uncommitted balance, the current trust fund includes unexpended balances that are committed to future capital outlays. The unexpended balance, equal to commitments, would remain in the trust fund since the commitments are for capital programs. At some point, therefore, tax rates might have to rise to produce revenue in excess of current budget authority, if outlays to meet these past commitments exceeded budget authority.

Option III has three main advantages. First, the accumulated surplus in the trust fund would be eliminated, thus ending the illusion that additional funds could be made available for capital spending without increasing the deficit. Second, trust fund revenue and spending would be clearly earmarked for specific capital programs only, and the tax revenue received each year would be based on projected budget authority for these programs. Third, since tax revenue during the 1990-1994 period would have to increase by $5.7 billion compared with baseline projections to fund projected capital spending, the cumulative federal budget deficits during the period would decline by $4.3 billion from the CBO baseline projections.

There are two main disadvantages. First, and most important, the general fund would still subsidize private-sector users of the system. Total FAA spending over the 1990-1994 period would be $35.2 billion, the private-sector share would be $29.9 billion, and

TABLE 12. PROJECTION OF TRUST FUND REVENUE, OUTLAYS, AND BALANCES UNDER OPTION III
(By fiscal year, in millions of dollars)

	1990	1991	1992	1993	1994
Trust Fund Tax Revenue	3,313	3,479	3,548	3,694	3,846
Trust Fund Outlays	2,617	2,850	3,060	3,256	3,306
Unexpended Balance, End of Year	6,734	7,363	7,851	8,289	8,829
Uncommitted Balance, End of Year	0	0	0	0	0

SOURCE: Congressional Budget Office.

excise tax revenue would be $17.9 billion, equal to budget authority for capital programs in this period. Therefore, the general fund would provide a subsidy to private-sector users of the aviation system of $12 billion, which is equal to the difference between the private-sector share and projected tax revenue. Second, and related to the first disadvantage, though the trust fund would be clearly a dedicated capital fund, it might give the impression that since capital costs are the only aviation system costs that private-sector users are financing, they are the only costs private-sector users ought to finance. This is not necessarily the case.

OPTION IV: TRANSFORM THE TRUST FUND INTO A FULL USER-PAY SYSTEM

The purpose of Option IV would be to eliminate the subsidy of private-sector users of the aviation system, and to restructure the trust fund to account better for aviation tax revenue and outlays. It would eliminate the accumulated trust fund surplus by canceling it at the end of 1989, and would also eliminate interest payments on the remaining unexpended balance. It would require that the entire private-sector share of system expenses be covered by the trust fund. Finally, it would eliminate the automatic tax rate reduction scheduled for 1990 and, in fact, increase excise taxes so that all trust fund spending would be covered each year by aviation-related tax revenue. Table 13 summarizes the effects of Option IV.

The proposed canceling of the accumulated trust fund surplus and the elimination of interest payments on the remaining unexpended balance are intended to take cognizance of the fact that both the entire unexpended balance and the accumulated surplus are the result of general fund subsidies from the start of the trust fund. Canceling the accumulated surplus would reduce the unexpended balance at the end of 1989 by $6.8 billion to $6.0 billion, an amount that is equal to the commitments against it in the trust fund.

The option would require that the full private-sector share of FAA appropriations for the 1990-1994 period--$29.9 billion under CBO

TABLE 13. PROJECTION OF TRUST FUND REVENUE, OUTLAYS, AND BALANCES UNDER OPTION IV
(By fiscal year, in millions of dollars)

	1990	1991	1992	1993	1994
Trust Fund Tax Revenue	5,750	5,994	6,252	6,524	6,806
Trust Fund Outlays	5,326	5,681	6,019	6,352	6,542
Unexpended Balance, End of Year	6,462	6,775	7,008	7,180	7,444
Uncommitted Balance, End of Year	0	0	0	0	0

SOURCE: Congressional Budget Office.

baseline projections--come from the trust fund. This requirement would assure that private-sector users pay their full share of system costs. In addition, to properly account for aviation expenditures, the option would raise aviation-related tax revenue each year in amounts sufficient to cover all the trust fund spending commitments so that no renewed general fund subsidy of private-sector users would occur.

Under this option, federal aviation spending would be unchanged from baseline levels, and aviation excise taxes would increase by $19.2 billion, equal to the difference between projected excise tax revenues and the projected private-sector share of FAA appropriations. This combination of no change in spending and increased taxes would decrease the federal budget deficits over the next five years by $14.4 billion and would eliminate the general fund subsidy and the accumulated trust fund surplus.

Option IV has four principal advantages. First, the general fund subsidy of private-sector users would be eliminated. By requiring users to pay the actual costs they impose on the system, it would encourage more efficient use of current capacity.[4] Second, the misleading accumulated surplus in the trust fund would be eliminated.

4. While full cost recovery from system users might produce a more efficient use of the aviation system, some private-sector user groups might be subsidizing other private-sector users if the current tax structure was continued. Specifically, general aviation appears to underpay its share of private-sector costs. Raising all aviation-related excise taxes by the same percentage would continue this subsidy by commercial aviation.

Third, federal deficits would be reduced by $14.4 billion while making the financing of aviation services more equitable. Finally, surpluses would not occur in the future, since the tax rates imposed would depend on the funding levels set by the Congress.

There are several disadvantages to Option IV. First, compared with current tax revenue, aviation-related excise tax revenue would have to increase by about 40 percent. Current users of the aviation system, accustomed to the present general fund subsidies, might resist paying the true costs of their use of the system. This might also affect the future use of the aviation system. Second, the option does not include any additional spending for aviation infrastructure to reduce system congestion, although higher tax rates might help by reducing demand. Third, while private-sector users would fund their share of FAA spending under this option, they would not be funding other, non-FAA, federal programs that benefit aviation.

GLOSSARY

Accumulated Surplus. See Uncommitted Balance.

Airport System. As used in this study, includes the 3,243 airports that are eligible to receive federal grants and are included in the National Plan of Integrated Airport Systems. These consist of 550 commercial service airports, which serve scheduled commercial airline traffic, 244 reliever airports, which relieve nearby commercial service airports of general aviation traffic, and 2,449 general aviation airports, which serve business, corporate, and pleasure fliers.

Airway System. The system that provides flight services to aircraft and monitors the airways to maintain aircraft separation, advise aircraft of traffic conflicts, and warn of adverse weather conditions. It consists of air route traffic control, which monitors commercial and some general aviation aircraft in flight between airports; terminal traffic control, which controls aircraft as they leave, approach, and land at airports; and flight service stations, which provide services primarily to general aviation aircraft. Also referred to as the air traffic control system.

Aviation System. As used in this study, includes both the airway and airport systems.

Baseline Projection. CBO projection that maintains real spending from the current budget year through the end of the projection period, by inflating current appropriations and estimating the spending that would result.

Cash Balance. See Unexpended Balance.

Commercial Aviation. Domestic, international, freight, and commuter air carriers.

General Aviation. Air taxis, rotorcraft, and aircraft flown by business, corporate, and pleasure fliers.

General Fund. Receives government receipts that are not earmarked for specific purposes and is charged with expenditures from those receipts for the general support of the federal government.

Trust Fund. Receives funds earmarked by law for specific purposes and is charged with the expenditures to finance specific programs and accounts.

Trust Fund Balances:

Unexpended Balance. The balance in the trust fund that has not been spent. Often referred to as the cash balance, though nearly all of it is invested, by law, in interest-bearing securities of the federal government.

Committed Balance. That portion of the unexpended balance in the trust fund for which spending authority has been provided. Spending authority may be either from authorizations (for the airport grants-in-aid program) or from appropriations.

Uncommitted Balance. That portion of the unexpended balance in the trust fund for which spending authority has not yet been enacted. Also referred to as the accumulated surplus in this study.