TABLE 11. BREAKDOWN OF PROJECTED AIRPORT AND AIRWAY TRUST FUND REVENUES, 1983-1987 (In millions of dollars)

Receipts by Tax Source	1983	1984	1985	1986	1987	Annual Average Growth (In percents)
Passenger Tickets	2,010	2,318	2,606	2,908	3,254	12.8
Freight Waybills	100	117	132	150	170	14.2
International Departures	74	84	88	92	97	7.0
General Aviation Fuel a/	129	138	149	161	166	6.5
Tires and Tubes	1	b/	0	0	0	0.0
Total	2,314	2,657	2,975	3,311	3,687	12.4

SOURCE: Congressional Budget Office from Office of the Secretary of the Treasury, Office of Tax Analysis (FAA estimates).

a. Combines taxes on jet fuel and gasoline.

b. Less than $1 million.

Some evidence of an end to the current price wars appears to be emerging. American Airlines recently proposed a simplified fare structure based on mileage--not unlike fare structures prior to deregulation. The response has been uneven, with three other major airlines (Trans World, Continental, and United) appearing to follow suit and at least one (Pan Am) refusing. Without such self-imposed discipline, the airline industry would be relying solely on increased demand to absorb excess capacity and lessen the

TABLE 12. ANALYSIS OF AIRPORT AND AIRWAY TRUST FUND UNDER FAA ASSUMPTIONS, 1983-1987
(In billions of dollars)

	1983	1984	1985	1986	1987
Authorization a/	3.12	3.92	3.93	3.91	3.74
Outlays	2.03 b/	2.83 c/	3.38 c/	3.78 c/	3.95 c/
Receipts d/	2.78	3.16	3.48	3.79	4.15
Cash Balance					
Start of year	3.88	4.63	4.96	5.06	5.07
End of year	4.63	4.96	5.06	5.07	5.27
Change	+0.75	+0.33	+0.10	+0.01	+0.20
Uncommitted Surplus					
Start of year	2.16	1.81	1.05	0.60	0.48
End of year	1.81	1.05	0.60	0.48	0.90
Change	-0.35	-0.76	-0.45	-0.12	+0.42

SOURCE: Congressional Budget Office.

a. Figures shown are the amounts authorized under the Airport and Airway Improvement Act of 1982, and the Surface Transportation Assistance Act of 1982.

b. Outlay projections for 1983 assume appropriations action taken to date.

c. Outlay projections for 1984 through 1987 assume the full appropriation of amounts authorized in the 1982 legislation cited in footnote b.

d. Includes accrued interest on the cash balance.

downward pressure on yields. However, if the 20 biggest U. S. carriers were to fly their planes as often as they did in 1979, they would need a traffic increase of 22 percent to fill as high a fraction of seats. 5/

5. Calculations by Banker's Trust, reported in The Economist (June 3, 1983).

Such a large increase seems highly unlikely, and FAA's projected rate of recovery in passenger yields thus appears unlikely as well. Indeed, preliminary indications are that yields continued their decline in April 1983, although a slight increase (about 0.1 percent) was apparent in May. Against these recent trends, a scenario of more gradual recovery in passenger yields (see Figure 5) could result in 8 percent lower trust fund revenues in 1983 than the FAA forecasts, 6 percent lower revenue in 1984, and 4 percent lower revenue in 1985.

Even assuming this more gradual increase in yields, outlays and receipts would remain in overall balance. Unpaid authorizations would exceed cash on hand by some $160 million by the end of 1986 but a small uncommitted surplus would reappear in 1987, indicating a sound financial picture for the FAA plan (see Table 13).

Financial problems could arise, however, if in addition to lower yields, passenger mileage grew more slowly than expected under the FAA projections--say, along the path predicted by the "maturity scenario" presented in Chapter III. Although the risk of lower traffic is diminished by the likelihood of lower yields themselves encouraging further growth in air travel, the combined impact of gradual recovery in yields and a maturity path in passenger miles would reduce trust fund revenues below the FAA forecast by 10 percent in 1983 and 1984, and by nearly 12 percent in 1985.

Assuming this much lower growth in receipts, unpaid authorizations would exceed cash on hand by some $400 million at the end of 1985, and by more than $1 billion by the end of 1987 (see Table 14). To maintain the past trust fund management practice of no unfunded authorizations, an increase in aviation user fees--equivalent to about one percentage point on the 8 percent ticket tax--would be called for. Alternatively, the fund could be operated along the lines of the federal Highway Trust Fund, which does permit a certain level of unfunded authorizations as long as adequate receipts (including interest) are available over the life of the trust fund. 6/ This would require extending the Airport and Airway Trust Fund beyond the last year of the aviation program. Since this would place the trust fund on a less sound financial footing, however, the Congress could

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6. The most important of these restrictions is called the Byrd Amendment and has been part of the Highway Trust Fund since it was founded in 1956. Basically, this requires the Department of the Treasury to ensure that there is adequate cash available over the remaining life of the fund to cover the projected outlays.

TABLE 13. ANALYSIS OF AIRPORT AND AIRWAY TRUST FUND, ASSUMING GRADUAL RECOVERY IN PASSENGER YIELDS, 1983-1987 a/ (In billions of dollars)

	1983	1984	1985	1986	1987
Authorization b/	3.12	3.92	3.93	3.91	3.74
Outlays	2.03 c/	2.83 d/	3.38 d/	3.78 d/	3.95 d/
Receipts e/	2.60	2.99	3.32	3.66	4.05
Cash Balance					
Start of year	3.88	4.45	4.61	4.55	4.43
End of year	4.45	4.61	4.55	4.43	4.53
Change	+0.57	+0.16	-0.06	-0.12	+0.10
Uncommitted Surplus					
Start of year	2.16	1.63	0.71	0.10	-0.16
End of year	1.63	0.71	0.10	-0.16	0.16
Change	-0.53	-0.92	-0.61	-0.26	+0.32

SOURCE: Congressional Budget Office.

a. Assumes 8 percent lower yield than the FAA projection in 1983, 6 percent lower in 1984, 4 percent lower in 1985, 3 percent lower in 1986, and 1 percent lower in 1987.

b. Figures shown are the amounts authorized under the Airport and Airway Improvement Act of 1982 and the Surface Transportation Assistance Act of 1982.

c. Outlay projections for 1983 assume appropriation action taken to date.

d. Outlay projections for 1984 through 1987 assume the full appropriation of amounts authorized in the 1982 legislation cited in footnote b.

e. Includes accrued interest on the cash balance.

TABLE 14. ANALYSIS OF AIRPORT AND AIRWAY TRUST FUND, ASSUMING GRADUAL RECOVERY IN PASSENGER YIELDS a/ AND MATURITY SCENARIO FOR PASSENGER MILES b/ (In billions of dollars)

	1983	1984	1985	1986	1987
Authorization c/	3.12	3.92	3.93	3.91	3.74
Outlays	2.03 d/	2.83 e/	3.38 e/	3.78 e/	3.95 e/
Receipts f/	2.50	2.83	3.08	3.33	3.61
Cash Balance					
Start of year	3.88	4.35	4.36	4.06	3.62
End of year	4.35	4.36	4.06	3.62	3.27
Change	+0.47	+0.01	-0.30	-0.44	-0.35
Uncommitted Surplus					
Start of year	2.16	1.53	0.45	-0.40	-0.97
End of year	1.53	0.45	-0.40	-0.97	-1.10
Change	-0.63	-1.08	-0.85	-0.57	-0.13

SOURCE: Congressional Budget Office.

a. Assumes 8 percent lower yield than the FAA projections in 1983, 6 percent lower in 1984, 4 percent lower in 1985, 3 percent lower in 1986, and 1 percent lower in 1987.

b. Assumes 5 percent fewer passenger miles than the FAA projection in 1983, 6.5 percent fewer in 1984, 8 percent fewer in 1985, 9.1 percent fewer in 1986, and 11 percent fewerin 1987.

c. Figures shown are the amounts authorized under the Airport and Airway Improvement Act of 1982, and the Surface Transportation Assistance Act of 1982.

d. Outlay projections for 1983 assume appropriation action taken to date.

e. Outlay projections for 1984 through 1987 assume the full appropriation of amounts authorized in the 1982 legislation cited in footnote b.

f. Includes accrued interest on the cash balance.

consider placing restrictions on the cash balance similar to those applying to the Highway fund. 7/

IMPACT OF RECENT APPROPRIATION LEGISLATION

The preceding analysis assumes the full appropriation of amounts authorized under the Airport and Airway Improvement Act of 1982. Although this generous assumption would severely test the trust fund's capacity to fund the FAA plan, it does not take into account recent appropriation action that sharply curtails trust fund expenditures in 1984. 8/ Against authorizations of $1.39 billion for the National Airspace System Plan in 1984, the appropriation act allows only $750 million. FAA operating expenditures from the trust fund are eliminated entirely, representing a reduction of $1.2 billion, (sums for FAA operating costs would be drawn from general revenues instead). 9/ In addition, spending from the trust fund for airport development and research and development is reduced by $194 million and $23 million, respectively. In sum, appropriation decisions for 1984 reduce expenditures from the trust fund by $2 billion, 49 percent below the authorized level.

This large reduction has important implications for the trust fund. By the end of 1984, the fund's uncommitted surplus would exceed $2 billion, and would climb to nearly $3 billion by 1987, (see Table 15). Revenues from user fees would exceed outlays by more than 26 percent over the 1984 to 1987 period, a condition that could justify a reduction in aviation user fees.

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7. See Congressional Budget Office, Financial Options For the Highway Trust Fund (December 1982).

8. Department of Transportation and Related Agencies Appropriations Act of 1984 (P. L. 98-78).

9. To encourage the timely appropriation of all funds authorized for the FAA plan, the Airport and Airway Improvement Act of 1982 stipulates that any reduction in the authorized amounts for the National Airspace System Plan be matched with a reduction in trust fund expenditures for operations and maintenance on a two-to-one basis. Thus the reduction of $640 million under the Department of Transportation Appropriations Act of 1984 translates into a $1.3 billion reduction in trust fund operating billion reduction in trust fund operating expenditures.

TABLE 15. ANALYSIS OF AIRPORT AND AIRWAY TRUST FUND, UNDER FAA APPROPRIATIONS FOR 1984 (In billions of dollars)

	1983	1984	1985	1986	1987
Authorization	3.12	2.68 a/	3.93	3.91	3.74
Outlays	2.03 b/	1.56 b/	3.03 c/	3.57	3.94 d/
Receipts e/	2.78	3.23	3.65	3.99	4.36
Cash Balance					
Start of year	3.88	4.63	6.30	6.91	7.33
End of year	4.63	6.30	6.91	7.33	7.75
Change	+0.75	+1.67	+0.61	+0.42	+0.42
Uncommitted Surplus					
Start of year	2.16	1.82	2.37	2.09	2.17
End of year	1.82	2.37	2.09	2.17	2.79
Change	-0.34	+0.55	-0.28	+0.08	+0.62

SOURCE: Congressional Budget Office.

a. Excludes $1.2 billion in unappropriated funds for operating expenses.

b. Includes appropriation action taken to date.

c. Assumes that $250 million in unappropriated 1984 authorizations for the FAA plan are brought forward to 1985.

d. Assumes that $393 million in unappropriated 1984 authorizations for the FAA plan are brought forward to 1987.

e. Assumes FAA forecasts of trust fund revenues. Also includes accrued interest on the cash balance.

In addition to the above budgetary implications for the trust fund, reduced appropriations from the trust fund raise important economic and equity questions. By slowing the pace of investment in the FAA plan, appropriation action delays an investment that already appears overdue by economic standards (see Chapter III).

In addition, shifting the entire burden of the cost of operating the national airspace system to the general taxpayer represents a significant shift from the user-pays principle embodied in the trust fund concept. If the Congress were to continue these expenditures from general revenues, aviation user fees could be reduced. This would increase the overall federal deficit, however.

CONCLUSION

Under the FAA's projections of travel demand and passenger yields, trust fund receipts appear adequate to ensure a sound financial base for implementation of the National Airspace System Plan while also meeting other federal aviation commitments. Considerable uncertainty surrounds the projections, however, and passenger yields in particular show signs of less brisk recovery than the FAA projects. If trust fund receipts fell below expectations, or if costs ran higher than expected, a user fee increase--or a shift in trust fund management--might prove necessary at some point in order fully to implement the plan. On the other hand, by sharply curtailing the level of trust fund expenditures, particularly for FAA operations and maintenance, recent appropriation decisions would allow the fund's uncommitted surplus to increase sharply.

APPENDIXES

APPENDIX A. ESTIMATED TIME PATH OF CAPITAL COSTS UNDER FAA ASSUMPTIONS AND FORECASTS

On the basis of Federal Aviation Administration data, the Congressional Budget Office has projected the time path for the three major cost streams associated with the National Airspace System Plan (see Table A-1). These projections support the analysis in Chapter II. The cost streams are:

- Federal investment costs;
- User costs for avionics associated with updated transponders and the new traffic alert and collision avoidance system (TCAS); and
- User costs for avionics associated with the microwave landing system (MLS).

Federal Investment Costs

The FAA estimates that implementation of the plan would cost about $7.6 billion in 1982 dollars, or $5.7 billion in Net Present Value (NPV), discounting at 10 percent. 1/ To estimate the schedule of these expenditures, CBO used data from the FAA's eight-year Facilities and Equipment Plan, covering the period 1983 through 1990 (see Table A-1).

Transponder Costs

The FAA projects that users would begin installing new transponder equipment in 1986. This would result in $158 million in annual user investment expense over the period 1986-1995 and $84 million thereafter for replacement and growth. Over the period 1982-2005, total transponder user cost would total $2.4 billion (in 1982 dollars).

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1. Federal Aviation Administration, Preliminary Estimates of the Benefits and Costs to Implement the National Airspace System Plan.

TABLE A-1. PROJECTED FEDERAL INVESTMENT AND USER COSTS FOR AVIONICS EQUIPMENT (In millions of dollars)

Fiscal Year	Federal Investment Costs	User Avionics Costs	
		Transponders/ TCAS	MLS a/
1982	690.5	0	57.2
1983	1,261.8	0	59.1
1984	1,218.2	0	61.0
1985	1,198.6	0	62.8
1986	979.0	158	64.7
1987	896.4	158	13.8
1988	776.0	158	-16.1
1989	625.8	158	-46.1
1990	b/	158	60.6
1991	b/	158	74.0
1992	b/	158	-7.8
1993	b/	158	-7.7
1994	b/	158	-7.6
1995	b/	158	-7.4
1996	b/	84	-7.4
1997	b/	84	40.4
1998	b/	84	40.5
1999	b/	84	40.7
2000	b/	84	40.8
2001	b/	84	40.9
2002	b/	84	8.6
2003	b/	84	9.0
2004	b/	84	9.1
2005	b/	84	9.3
Totals in 1982 dollars			
1982-2000	7,646.3	2,000	515.5
1982-2005	7,646.3	2,420	592.4
Total Present Value (At 10 percent discount rate)			
1982-2000	5,729.3	821.6	309.8
1982-2005	5,729.3	878.9	321.2

SOURCE: CBO from FAA data.

a. Continued use of the existing precision landing system would necessitate a costly frequency adjustment between the late 1980s and the mid-1990s and the costs associated with MLS in those years would actually be lower than the costs associated with such an adjustment. This explains the "negative" cost figures in this column.

b. Costs beyond 1989 are projected to remain within the approximate range of $100 million a year.

Avionics Costs for the Microwave Landing System

Over the period 1982-2000, the FAA projects MLS equipment to cost users some $515.5 million (in 1982 dollars), with a present value of $309.8 million (see Table A-1). This assumes an implementation period of 20 years. The FAA's MLS cost projections compare the installation of an MLS unit with the cost of continued use of the current system, called the instrument landing system (ILS). In other words, the estimates represent the incremental cost of implementing the MLS systemwide.

The FAA expects that, if the ILS system is to continue to operate over the next 20 years, a major investment in radio frequency conversion would be required. In recent studies, the FAA has assumed that the entire investment to achieve this conversion would be made in 1989. 2/ The year 1989 was apparently designated by the FAA as the date in which users would have to make frequency conversion investments to be permitted to use major terminal areas and facilities. Communication with the FAA indicates, however, that it would not be unreasonable to assume a somewhat earlier implementation of the frequency conversion costs by some users, and the MLS data shown in Table A-1 provide for a greater spread of these avionics costs. This results in a slightly higher cost value of $515.5 million than the FAA's $511.4 million.

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2. See Federal Aviation Administration, An Analysis of the Requirements for and the Benefits and Costs of the National Microwave Landing System (June 1980), vol. 1, pp. 1-78, Table 1.3-19.

APPENDIX B. ESTIMATED TIME PATH OF BENEFITS UNDER FAA ASSUMPTIONS AND FORECASTS

Using FAA data, CBO has projected the time path for the three major benefit streams associated with the National Airspace System Plan (see Table B-1). These projections support the analysis in Chapter II. The benefit streams are:

- Savings in FAA operating costs;
- Fuel cost savings; and
- Savings attributable to the microwave landing system.

Savings in FAA Operating Costs

Savings in FAA operating costs account for the major benefits resulting from implementation of the FAA Plan--about two-thirds of the total. The savings reflect staff reductions associated with anticipated increases in labor productivity, facilities closures, and lower maintenance and operating costs. Over the period 1982-2000, the FAA estimates a total saving of $24.3 billion (in 1982 dollars). Extending these savings to the year 2005 increases the total to $37.1 billion. The present value of these savings for the period 1982-2005 amounts to $10.6 billion.

The FAA's analysis of operating costs indicates that, with no growth in air traffic, net savings would fall to $11.1 billion. 1/ In other words, about half of the operating cost savings would result from the anticipated productivity increases and facility closures.

Fuel Cost Savings

The fuel cost savings shown in Table B-1 result from more direct routing of flights, the elimination of altitude restrictions, and the elimination of arrival delays caused by the inefficient use of available airport capacity. More efficient route planning, en route metering, terminal flight

1. From FAA unpublished working notes supplied to CBO.

TABLE B-1. PROJECTED FEDERAL AND DIRECT USER BENEFITS
(In millions of dollars)

Fiscal Year	FAA Net Operating Cost Savings	Fuel Cost Savings		
		Air Carriers	General Aviation	Total
1982	90	0	0	0
1983	280	0	0	0
1984	470	0	0	0
1985	660	0	0	0
1986	780	150	50	200
1987	910	150	50	200
1988	1,000	150	60	210
1989	1,125	160	60	220
1990	1,220	160	60	220
1991	1,310	170	60	230
1992	1,410	170	70	240
1993	1,530	530	220	750
1994	1,630	540	240	780
1995	1,720	680	300	980
1996	1,840	760	330	1,090
1997	1,940	780	350	1,130
1998	2,030	800	360	1,160
1999	2,130	820	370	1,190
2000	2,220	830	390	1,220
2001	2,380	850	400	1,250
2002	2,470	870	410	1,280
2003	2,550	890	420	1,310
2004	2,640	910	430	1,340
2005	2,750	920	440	1,360
Total in 1982 dollars				
1982-2000	24,295	6,850	2,970	9,820
1982-2005	37,085	11,290	5,070	16,360
Total Present Value (At 10 percent discount rate)				
1982-2000	8,902.0	2,001.9	843.1	2,845.0
1982-2005	10,638.6	2,622.0	1,127.2	3,749.2

SOURCE: CBO from FAA data.

planning and traffic management, strategic clearance planning, and tactical clearance generation all provide the basis for the FAA's estimates of benefits attributable to improved fuel use efficiency.

Estimated fuel savings are based on an estimated potential of 6 percent savings in fuel consumption, not expected to be realized fully before 1996. 2/ A lower savings rate is applied for the interim period. Specifically, a fuel savings rate of 1.5 percent is applied for the period 1986-1992, 4.5 percent for 1993-1995, and 6 percent for 1996-2005.

Over the period 1982-2005, fuel savings represent $16.4 billion (in 1982 dollars)--$11.3 billion saved by the commercial air carriers and $5.1 billion by general aviation. The present values are $2.6 billion and $1.1 billion, respectively.

Savings from the Microwave Landing System

Estimated savings from the MLS are derived from five specific sources (see Table B-2):

- Safety benefits associated with reduced property damage and fatalities;
- Reduced system disruptions;
- Reduced system outages;
- Savings from reduced restrictions on the ground and/or in the air; and
- Savings associated with reduced path length in the approach to runways.

With the exception of the safety benefits, the major savings associated with the MLS relate to two factors: savings in time that are translated into direct reductions in operating costs (such as crew costs); and savings in time that are converted to direct savings in passenger time (based on an estimate of the value of that time).

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2. See Federal Aviation Administration, Preliminary Analysis of the Benefits and Costs to Implement the National Airspace System Plan (June 1982).

TABLE B-2. PROJECTED MICROWAVE LANDING SYSTEM BENEFITS
(In millions of dollars)

Year	Safety Benefits	Reduced Disruptions	Reduced Outages	Ground/Air Savings	Path Length Reductions	Total
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	4.8	34.8	8.5	26.0	19.5	93.6
1987	6.4	44.3	8.9	33.9	24.6	118.1
1988	8.1	58.2	9.3	42.7	30.1	148.4
1989	10.1	74.8	9.7	52.5	36.0	183.1
1990	12.3	93.7	10.2	63.5	42.2	221.9
1991	13.9	109.1	10.3	75.6	49.1	258.0
1992	14.2	115.5	10.4	80.8	51.3	272.2
1993	14.5	120.1	10.4	86.2	53.4	284.6
1994	14.8	125.1	10.5	91.7	55.5	297.6
1995	15.1	130.3	10.6	97.9	57.5	311.4
1996	15.3	135.2	11.2	104.0	59.7	325.4
1997	15.7	141.8	11.8	110.5	61.8	341.6
1998	15.8	146.5	12.5	117.4	63.7	355.9
1999	16.1	151.8	13.2	124.6	66.0	371.7
2000	16.3	157.4	13.9	132.0	68.3	387.9
2001	16.6	163.5	14.5	137.9	70.7	403.2
2002	16.9	169.7	15.1	144.1	73.2	419.0
2003	17.1	176.3	15.8	150.6	75.7	435.5
2004	17.4	183.1	16.5	157.4	78.4	452.8
2005	17.7	190.1	17.2	164.5	81.1	470.6
Total in 1982 dollars						
1982-2000	193.4	1,638.6	161.4	1,239.3	738.7	3,971.4
1982-2005	279.1	2,521.3	240.5	1,993.8	1,117.8	6,152.5
Total Present Value (At 10 percent discount rate)						
1982-2000	63.1	536.5	58.4	398.2	247.1	1,303.3
1982-2005	76.7	655.4	69.1	500.3	298.3	1,599.8

SOURCE: CBO from FAA data.

Over the period 1982-2005, estimated MLS benefits total $6.2 billion (in 1982 dollars), with a present value of $1.6 billion. On the basis of FAA data, these estimates value time savings at the average wage rate. An assessment of this assumption is presented in Appendix E.

Safety Benefits. Safety gains from the MLS are expected to generate benefits of $0.3 billion (in 1982 dollars), with a present value of $0.1 billion. Approximately 20 percent of the FAA's safety benefits are attributable to reduced property damage and 80 percent to reduced fatalities. About 35 percent of the safety benefits accrue to air carriers, 10 percent to commuter airlines, and 55 percent to general aviation.

Disruptions, Outages, Ground/Air and Path Length Savings. Over the period 1982-2005, savings associated with reduced disruptions, outages, ground/air restrictions, and path length reductions are estimated by the FAA to be $2.5, $0.2, $2.0, and $1.1 billion, respectively (see Table B-2). The FAA data indicate that benefits commence in 1986.

APPENDIX C. EXPLAINING AND FORECASTING PAST TRENDS IN AIR TRAFFIC

To support the analysis in Chapter III, this appendix presents a historical overview of FAA aviation forecasts, reviews current FAA forecasting methodology and assumptions, and assesses how projections could change under alternative explanations of past trends.

HISTORICAL OVERVIEW

The examination of FAA forecasts of aviation activity over the last 23 years indicates three distinct chronological periods (see Table C-1). The first period, 1959-1965, is characterized by consistent underestimates of air traffic. The worst five-year forecasting error was made in 1963, when FAA's forecast of 1968 take-offs and landings turned out to be 33 percent too low.

The second distinct period, 1966-1973, is marked by a dramatic reversal in forecasting performance--instead of being consistently too low, the FAA projected consistently more traffic than actually materialized (see Tables C-2, C-3, and C-4). Five-year forecast errors averaged 33 percent, the worst year producing a 58 percent overestimate of take-offs and landings.

The third period, from 1974 on, shows two important shifts from the past. First, the FAA adopted more sophisticated methods of analyzing trends in air traffic. Previously, FAA analysts had simply extrapolated past trends. Starting in 1974, however, FAA forecasters made statistical analyses of aviation activity, attempting to explain and quantify the causal relationships between aviation trends and macroeconomic activity, fuel prices, and other possible explanatory factors. Secondly, while past forecasts had been consistently either too high or too low, forecast results since 1974 have been more mixed. Inasmuch as no economic forecast can ever be "correct," it is better for investment planning that errors be randomly distributed rather than uniformly biased, and recent FAA performance can thus be regarded as having substantially improved.

TABLE C-1. SUMMARY OF FAA FORECASTS, BY PERIODS

Periods in which Forecasts Made	Method	Performance Five Years Ahead	Market Environment
1959-1965	Trend forecasting: unspecified links to economy, business cycle, population, fares, competition from other modes	Average error -18.7 percent Worst year -32.5 percent	Expanding, prosperous economy. Rapidly growing population. Declining first-class and coach fares, (declining unit costs because of increasing use of jets)
1966-1973	Trend forecasting: unspecified links to economy, business cycle, population, fares, competition from other modes	Average error +32.5 percent Worst year +58.4 percent	Softening trends in aviation activity. Increasing ticket taxes, rising fares. Forecasts made in 1969 (published January 1970) assumed 4.25 percent growth rate in 1973, to continue at that rate through decade. Inflation 2 percent per year from 1973
From 1974	Linear econometric models	Average error +21.2 percent Worst year +34.7 percent	Airline deregulation, economic recession, fare wars, and depressed airline revenues

SOURCE: CBO from FAA data.