Based on FAA estimates of the potential size of the SST market, the program breaks even as far as the government is concerned at a discount rate of 6.85 percent. If the opportunity cost of the program's funds is estimated at greater than 6.85 percent, the program will not break even. Using IDA estimates of market size (which assume that sonic boom restrictions will limit sales), the break-even rate is 1.33 percent. If a higher discount rate is used the program will not break even.

The following table shows results from the same calculations but allowing interest charges to accumulate through 1990, rather than discounting program costs back to the present.

SST PROGRAM COSTS TO 1990 INCLUDING INTEREST CHARGES

[In millions of dollars]

	Interest charges at—		
	5 percent	10 percent	15 percent
IDA estimates of market size	−1,057	−4,370	−14,401
FAA estimates of market size	670	−2,143	−10,477

Thus, if the opportunity cost of funds is estimated at 5%, the program will lose a billion dollars by 1990 using IDA estimates of market size but will earn a return for the government of $670 million using FAA market estimates. At 10%, the program will cost the government $4.4 billion by IDA market estimates, $2.1 billion by FAA market estimates.[11]

The choice of a discount rate will significantly influence estimates of the program's profitability as a financial investment. Moreover, this example also shows the explicit analysis of uncertain future benefits. Two different estimates of potential market size are used in caculating profitability. Hence, judgment can be focused on how the uncertainties about the market should affect the investment decision.

Chairman PROXMIRE. Mr. Mackey?

STATEMENT OF M. CECIL MACKEY, ASSISTANT SECRETARY FOR POLICY DEVELOPMENT, DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY DR. JAMES NELSON, DIRECTOR, OFFICE OF ECONOMICS

Mr. MACKEY. I might begin by saying that somehow, the SST portion of our statement was omitted in the gathering process.

Chairman PROXMIRE. I can understand. [Laughter.]

Mr. MACKEY. Mr. Chairman, with me this morning is Dr. James R. Nelson, who is Director of our Office of Economics in the Department of Transportation. He has been on loan to us for approximately 11 months now, from Amherst College, and has been directly involved in much of the economic analysis which the Department has been trying to undertake in its formative stages. Unfortunately, this will be his last opportunity. He is going back to the academic world at the end of this month.

I am glad to have a chance to be here this morning and to join in the discussion of discounting and the use of quantitative analyses in Government programs. In light of the testimony which you have heard in the past 2 days, I would touch only very briefly on the standard framework of analysis which is normally employed to establish a case for discounting future costs and benefits and to determine

[11] If pre-1968 costs are included in these calculations, the government's cost is $6.5–$9.0 billion.