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BOARD OF ECONOMIC ADVISORS

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To: South Carolina Budget and Control Board

Subject: First Official Estimate for FY 1992-93

In accordance with Section 11-9-880 of the 1976 S.C. Code of Laws, as amended, the Board of Economic Advisors submits the first official estimate for Fiscal Year 1992-93. A review of actual revenues in FY 1990-91 compared with the Appropriation Act estimates for FY 1990-91, and an update of revenue estimates for FY 1991-92 as compared with the Appropriation Act estimates for FY 1991-92 will follow at the conclusion of this Report.

The estimate is being made in an environment of unusual uncertainty and skepticism on the part of the general public as to the path of the recession and the strength and timing of recovery. The general consensus of most mainstream economists is that the recession has run its course and, with the exception of areas such as the Northeast, it was a relatively mild one lasting three quarters, with the turnaround occurring in the third quarter of this year. Growth in real GNP for this fiscal year and in FY 1992-93 is expected to be at less than three percent with inflation as measured by the Consumer Price Index in the 3.5% range. This puts the pace of the recovery at half the rate

of the last eight recoveries. Personal Income is forecast to rise at sluggish rates with consumer spending only keeping pace with income growth this fiscal year and in FY 1992-93.

The forecasts of the members of the BEA National Advisory Council presented to the BEA at the October 4th meeting held in Columbia were basically in agreement. While the recovery seemed solid, Council members agreed it was an appraisal that should be tempered with caution. The forces which had spurred growth for the past thirty years were no longer operating domestically or internationally. Problem areas include the growing federal deficit, the overhanging personal debt situation, a lack of fiscal stimulus, credit restraints, and growth slowdowns in major industrial nations. Caution was advised not just for the period of cyclical recovery in the short term, but for the longer term outlook of the United States as well.

Given this outlook, the economy of South Carolina should expand at national rates with recovery following the national pattern. The increase in nominal personal income should be in the 4% range this fiscal year and the 6% range in FY 1992-93. Unlike previous periods of recovery, no single sector of the South Carolina economy seems to be providing a significant thrust for greater growth. With the timing and path of recovery in South Carolina uncertain and current indications of a recovery at half the normal rate in South Carolina as well as in the nation, caution was stressed in looking some 20 months into the future. This was particularly essential in translating future economic increments into revenue projections following a period in which

long-term income and revenue relationships had been so thoroughly disrupted.

On this basis, the Board of Economic Advisors estimates no change in the forecast of revenues for FY 1991-92 from the July 26, 1991 estimate of \$3,440 million, or \$148.3 million below the FY 1991-92 Appropriation Act of \$3,588.3 million. Revenues of \$3625.0 million are estimated for FY 1992-93. This is an increase of \$185.0 million, or 5.4% from the \$3,440 million 1991-92 BEA revenue estimate and an increase of \$36.7 million or 1.0% over the FY 1991-92 Appropriation Act of \$3,588.3 million.

Board of Economic Advisors

W.R.P.

October 10, 1991

TABLE I  
 GENERAL FUND REVENUES  
 FISCAL YEARS 1991-92 AND 1992-93  
 (In Millions of Dollars)

	ACTUAL FY 1990-91	BEA 10/9/91 REVISED ESTIMATE FY 1991-92	BEA 10/9/91 ESTIMATE FY 1992-93
TOTAL GENERAL FUND (1)	3305.4	3440.0	3625.0
Total Regular Sources (1)	3258.1	3377.5	3580.0
Sales Tax (1)	1155.4	1201.0	1271.0
Individual Income Tax	1386.6	1461.0	1581.0
Corporation Income Tax	142.7	153.0	165.0
All Other	573.4	562.5	563.0
Miscellaneous Sources	47.2	62.5	45.0
Education Improvement Fund	290.519	300.250*	317.750*
Interest on Education Improvement Fund	1.988	1.800	1.800
TOTAL	292.507	302.050	319.550
		<u>RATES OF CHANGE**</u>	
TOTAL GENERAL FUND		4.1%	5.4%
Total Regular Sources		3.7	6.0
Sales Tax		3.9	5.8
Individual Income Tax		5.4	8.2
Corporation Income Tax		7.2	7.8
All Other		-1.9	0.1
Miscellaneous Sources		32.3	-28.0
Education Improvement Fund		3.3	5.8
Interest on Education Improvement Fund		-9.5	0.0
TOTAL		3.3	5.8

- (1) Net of Education Improvement Fund.  
 \* One-fifth of total sales tax.  
 \*\* Percent change based on unrounded figures.

Board of Economic Advisors  
 October 10, 1991

TABLE II

STATE OF SOUTH CAROLINA  
 TOTAL BUDGETARY GENERAL FUND  
 QUARTERLY ESTIMATES  
 Fiscal Years 1991-92 and 1992-93  
 (In Millions of Dollars)

	FY 1991-92 -----	FY 1992-93 -----
FIRST QUARTER	790.2 *	841.0
SECOND QUARTER	1659.7	1753.0
THIRD QUARTER	2459.0	2601.3
FOURTH QUARTER	3440.0	3625.0

PERCENT OF TOTAL REVENUES  
 COLLECTION BY QUARTER

	FY 1991-92 -----	FY 1992-93 -----
FIRST QUARTER	23.0 **	23.2
SECOND QUARTER	25.3	25.2
THIRD QUARTER	23.2	23.4
FOURTH QUARTER	28.5	28.2

\*: Actual.

\*\* : Actual quarterly data as percent of total estimate.

Note: Tax collections for June sales accrue in the month of June.

Board of Economic Advisors  
 October 10, 1991

REVENUE FORECASTING PROCEDURES  
BOARD OF ECONOMIC ADVISORS  
FISCAL YEAR 1992-93

The procedures and methodology of the Board of Economic Advisors in the preparation of the first official revenue forecast for Fiscal Year 1992-93 involved three major stages: 1) providing the economic background and setting at the national and State levels for the revenue forecasts; 2) interpreting recent and historical revenue relationships; and 3) interacting with officials of other states with responsibility for revenue forecasting.

The Board members consulted as in the past with business and financial experts and professional economists for economic intelligence gathering. This included a meeting held on October 4, 1991 in Columbia with the National Advisory Council to the Board of Economic Advisors. Present at the meeting were: J. Alfred Broaddus, Jr., Ph.D., Senior Vice President and Director of Research, Federal Reserve Bank of Richmond; Ben E. Laden, Ph.D., Director of Financial Institutions Regulations Staff, Department of Housing and Urban Development; James A. Morris, Ph.D., Distinguished Professor of Economics Emeritus, University of South Carolina; Ronald P. Wilder, Ph.D., Chairman, Department of Economics, University of South Carolina; David A. Wyss, Ph.D., Senior Vice President and Research Director, Data Resources, Inc.; and Bruce Yandle, Jr., Ph.D., Alumni Professor of Economics and Acting Director of the Strom Thurmond Institute, Clemson University.

The resources of the national forecasting groups by which the SCOPE model and other forecasts are driven, Data Resources, Inc., Evans Economics, Inc., and WEFA, Inc., were available weekly and monthly to Board members and staff. Materials from a variety of sources--international, national and State publications--were also made available to Board members and staff.

## BRIEF OVERVIEW OF THE SCOPE MODEL

The SCOPE (South Carolina Operations Planning and Evaluation) Model was initiated in 1972 in the Office of Chief Economist (originally in the Governor's office). It was designed and operated as a policy and forecasting tool for top level executive, legislative and management decision making. SCOPE is an econometric model designed to reflect the South Carolina economy and to forecast the performance of major economic variables in the State, particularly tax revenues, employment and income. The model is based on a framework of economic activity in the State relative to national economic activity with approximately 85 exogenous national variables provided by leading national forecasting services such as Data Resources, Inc., the WEFA Group, and Evans Economics, Inc.

The SCOPE core econometric model consists of 51 equations, of which 37 are stochastic\* and 14 are identities. SCOPE attempts to reflect the diversity of the South Carolina economy by including 19 industrial sectors of manufacturing and nonmanufacturing employment, and a series of equations for wages, personal income and unemployment.

### Durable Manufacturing Employment

The durable manufacturing employment block consists of ten stochastic equations for the major industries in the State as reported by the South Carolina Employment Security Commission. The employment equations for each separate industry are expressed as a function of a national consumption expenditure index appropriate for that particular industry, a national industrial production index corresponding to that industry and the national level of employment in that industry. The durable employment forecasts include the following industries: Lumber and Wood Products, Stone, Clay and Glass, Primary and Fabricated Metal Products, Electrical and Nonelectrical Machinery and Other Durables which includes Furniture and Fixtures, Transportation, Instruments and Related Products.

### Nondurable Manufacturing Employment

The nondurable manufacturing employment block consists of seven stochastic equations for the major nondurable industries in the State. Like the durable block, the employment equation for each industry is expressed as a function of a national consumption index appropriate for that particular industry, a national industrial production index for that particular industry and the national level of employment in that industry. Employment forecasts are available for each of the following nondurable industries: Food and Kindred Products, Textile Mill Products, Apparel, Paper, Printing and Publishing, Chemicals and Other Nondurables, such as Rubber and Miscellaneous Plastics Products.

\* Stochastic is defined as a type of modeling for time series analysis explaining future probability from historical experience.

## Nonmanufacturing Employment

The nonmanufacturing employment block is disaggregated into eight stochastic equations: Mining, Construction, Transportation and Public Utilities, Services, Trade, Finance-Insurance-Real Estate, State and Local Government and Federal Government. Employment growth in these industries is specified as functions of State population, national employment in these industries and national consumption indices.

## Personal Income

The personal income block is composed of 12 equations, one equation for the unemployment rate, one equation to adjust for nonresidents, and ten additional equations for each of the ten major components of personal income as published by the Bureau of Economic Analysis, U.S. Department of Commerce. These equations are specified as functions of their respective national and State income and employment variables. In addition, equations are estimated for wage and salary disbursements for all major industries and are specified as functions of national wage trends and State employment levels.

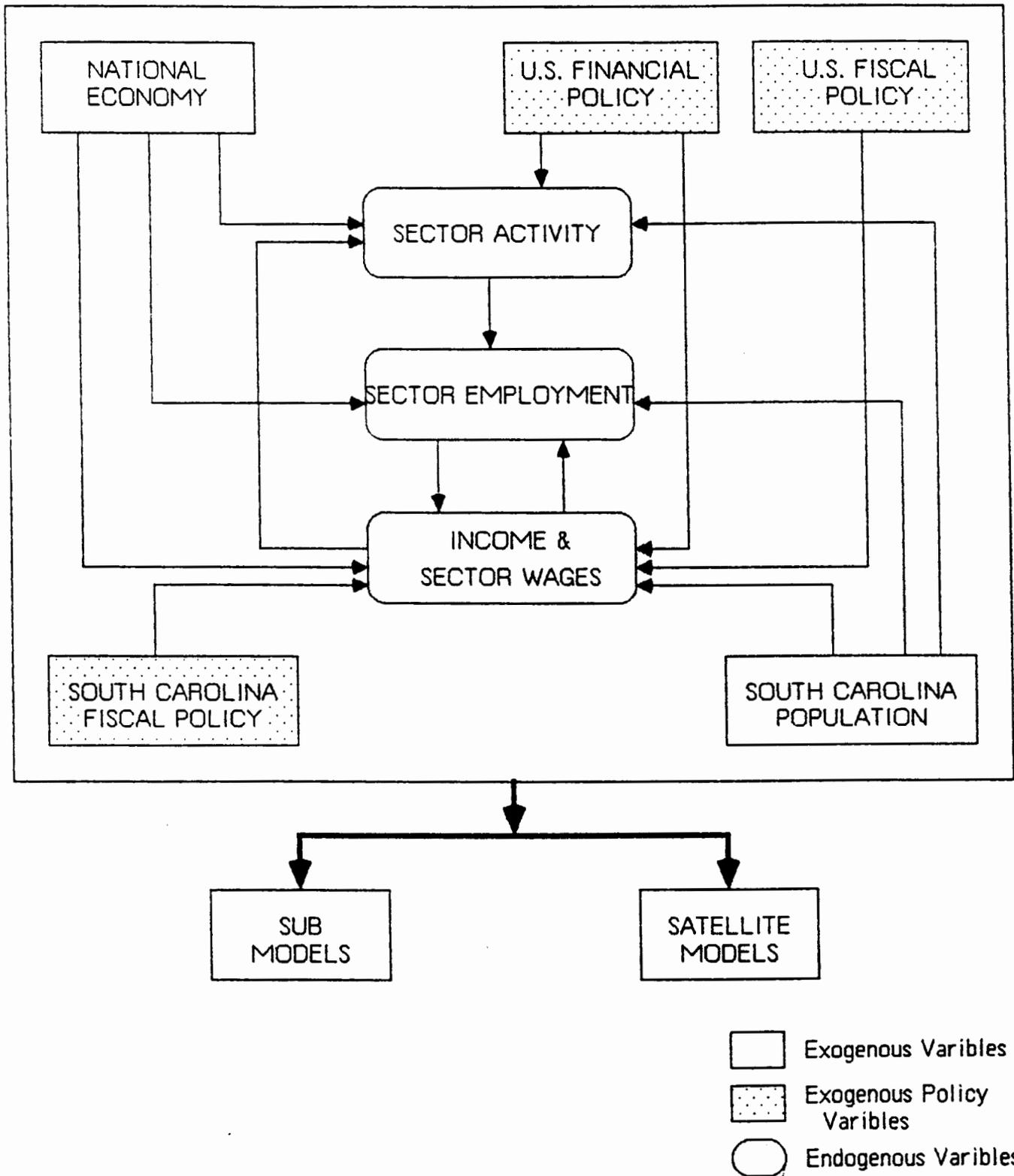
## Revenues

The revenue section of the model is being structured to emphasize four major stochastic Regular Revenue Sources equations: 1) South Carolina corporate income tax, 2) South Carolina individual income taxes, 3) South Carolina retail sales tax, and 4) all other taxes. These equations are individually specified as functions of aggregate employment and income with their respective coefficients and constants. In addition, there are two stochastic equations for taxable sales and refunds.

Equations of the model are continuously respecified to account for revisions in historical data. Reformulation and respecification of the model continues as an ongoing process. Forecasts from the SCOPE core and revenue models were made available for deliberations in the first official estimate of FY 1992-93 by the Board of Economic Advisors.

# SCOPE MODEL

SOUTH CAROLINA OPERATIONS, PLANNING & EVALUATION MODEL



A REVIEW OF ACTUAL REVENUES IN FY 1990-91 AS COMPARED TO  
APPROPRIATION ACT ESTIMATE FOR FY 1990-91

Total General Fund Revenue collections of \$3,305.4 million in FY 1990-91 were \$287.2 million short of the FY 1990-91 Appropriation Act of \$3,592.6 million. Table A-1 shows the chronology of BEA General Fund revenue estimates during FY 1990-91 and actual collections in FY 1990-91 versus the resulting shortfall from the FY 1990-91 Appropriation Act. The shortfall of actual revenue collections from the FY 1990-91 Appropriation Act occurred for the following reasons:

1. Underestimation of the impact of Hurricane Hugo on the FY 1989-90 base for FY 1990-91;
2. Iraqi invasion of Kuwait on August 2, 1990, and on January 16, 1991, the beginning of the Persian Gulf War;
3. Deterioration of economic conditions at the national and state level during FY 1990-91;
4. Failure of revenues to grow normally during a period of moderate personal income growth.

At the time the Appropriation Act was passed in June 1990, national forecasters were predicting an economic slowdown but no recession during the fiscal year. After Desert Shield, national forecasters predicted an even further slowing of the U.S. economy, citing the international political and military events and various trade policies. These uncertainties warranted reductions in forecasts of the rate of real GNP growth during FY 1990-91, but still no recession was anticipated during the Summer months of 1990. It was not until the Fall of 1990 that recession became part of the consensus forecast.

On November 9, 1990, the BEA cut \$82.3 million from the FY 1990-91 Appropriation Act in response to reduced year-to-date collections in FY 1990-91 and lower economic forecasts at the national level affecting the State's economy. Table A-2 shows the revenue categories most affected and the corresponding reductions made.

The failure of corporation profits to respond as national forecasters anticipated resulted in a reduction of 56.3% of the gross reduction in the BEA November 9 estimate. The All Other revenue category accounted for 20.3% of the gross reduction due to an anticipated decrease in the Insurance Tax, and Miscellaneous revenues for 2.2%. The Individual Income tax accounted for 21.2% of the gross reduction in the BEA's FY 1990-91 estimate for the following three reasons: 1) the failure of revenue collections in FY 1989-90 to reach the economic base on which the FY 1990-91 estimate was made (13.4%); 2) the uncertainties surrounding the Middle East situation on the economy (4.2%); 3) net legislative adjustments (3.6%). These are shown in Table A-2A

On January 16, 1991, with the onset of the Desert Storm offensive, forecasts by leading economists of major economic indicators were revised downward. As consumer confidence dipped, revenue collections in South Carolina, which had been relatively strong through December 1990, turned sharply downward. The data on January collections were made available to the BEA on February 7, 1991. The weakness in January FY 1990-91 Corporate and Individual Income tax collections combined with weak Christmas 1990 sales, flat real GNP growth and reduced personal income forecasts resulted in the reduction of the FY 1990-91 revenue estimate by an additional \$50.3 million on February 15, 1991. Table A-3 compares the net dollar differences between the November 9, 1991 BEA estimate and the revised BEA estimate in February 1991.

In the Spring of 1991, the economic slowdown, now being recognized as a recession, further caused revenues to lag expectations. According to the consensus of national forecasters, the economy would not have slipped into recession had the Persian Gulf War not occurred. Although economic forecasters were predicting a second quarter turnaround, no evidence of such a turnaround in the economy was apparent in May 1991 or in May revenue receipts issued in June.

This softness in May receipts was anticipated by the BEA at the end of May when the BEA received advance May 1991 tax collection information prior to official data, subsequently released by the Comptroller General on June 7, 1991. On the basis of the advanced data, the BEA reduced the FY 1990-91 revenue estimate on June 4, 1991 to \$3,370 million in response to the poor May FY 1990-91 revenue collections, shown in Table A-4 below, and continuing uncertain economic conditions. Forecasts for FY 1990-91 showed minimal growth in real GNP and weaker personal income growth as wage and salaries flattened and total hours worked were lessened. The \$90.0 million reduction on June 4, 1991 brought the FY 1990-91 revenue estimate to \$3,370 million from \$3,460 million and was \$222.6 million below the FY 1990-91 Appropriation Act of \$3,592.6 million.

Actual FY 1990-91 revenue collections totaled \$3,305.4, or \$64.6 million below the June 4, 1991 BEA estimate, and \$287.2 million below the FY 1990-91 Appropriation Act.

In summary: FY 1990-91 General Fund revenues resulted in a \$287.2 million shortfall from the FY 1990-91 Appropriation Act, because the impact of Hurricane Hugo was underestimated causing the FY 1989-90 economic base to be overstated, State revenues did not grow in pace with a climate of moderate personal income growth, economic conditions deteriorated at both the national and state levels, and the Persian Gulf War turned what was to have been a moderate slowdown on the basis of forecasts of mainstream economists into a depression of three quarters duration. These three negative quarters coincided with three of the four quarters of the fiscal year. The result was an increase of three-tenths of one percent in actual collections in FY 1990-91 over FY 1989-90, the smallest increase in at least three decades.

**TABLE A**  
**REVIEW OF ACTUAL FY 1990-91 REVENUES VERSUS FY 1990-91 APPROPRIATION ACT**

**A-1. BEA General Fund Revenue Estimates and Final Collections FY 1990-91  
 Versus FY1990-91 Appropriation Act**

Reference: FY1990-91 ACT	Cumulative Shortfall BEA from FY91 ACT	BEA Estimate	BEA Estimate Reduction	Date of BEA Revised Est.
\$3592.6	\$ -82.3 mil.	\$3510.3 mil.	\$ -82.3 mil.	11/9/90
	-132.6	3460.0	-50.3	2/15/91
	-222.6	3370.0	-90.0	6/4/91
	-287.2	3305.4 actual		

**A-2. Share Differences Appropriation Act and 11/9/90 BEA Estimate**

	Net Dollar Differences FY90-91 ACT and BEA 11/9/90	Gross Dollar Reduction FY90-91 ACT and BEA 11/9/90	Percent of Gross Dollar Reduction
Sales	\$18.9 mil.	--	--
Individual	-21.5	\$-21.5 mil.	21.2% *
Corporate	-57.0	-57.0	56.3
All Other	-20.5	-20.5	20.3
Miscellaneous	-2.2	-2.2	2.2
	----	----	----
	\$-82.3	\$-101.2	100.0%

**A-2A. Composition of Net Individual Reduction\* in BEA FY 1990-91 Estimate**

Failure to reach FY90 base	-13.4%
Lower Individual growth rate	-4.2
Net legislative adjustments	-3.6
<b>Total net Individual income decrease</b>	<b>-21.2% *</b>

**A-3. Net Dollar and Percent Change Between BEA 11/9/90 and 2/15/91 Estimates**

Category	BEA 11/9/90 Estimate	BEA 2/15/91 Estimate	Net Dollar Change	Percent of Net Dollar Change
Sales	\$ 1224.2	\$ 1198.0	\$ -26.2	-52.1%
Individual	1491.0	1477.0	-14.0	-27.8
Corporate	150.0	152.0	2.0	4.0
All Other	599.5	590.0	-9.5	-18.9
Miscellaneous	45.6	43.0	-2.6	-5.2
<b>Total</b>	<b>\$ 3510.3</b>	<b>\$ 3460.0</b>	<b>\$ -50.3</b>	<b>100.0%</b>

**A-4. Net Dollar and Percent Change Between BEA 2/15/91 and 6/4/91 Estimates**

Category	BEA 2/15/91 Estimate	BEA 6/4/91 Estimate	Net Dollar Change	Percent of Net Dollar Change
Sales	\$ 1198.0	\$ 1172.5	\$ -25.5	-28.3%
Individual	1477.0	1437.7	-39.3	-43.7
Corporate	152.0	146.5	-5.5	-6.1
All Other	590.0	571.3	-18.7	-20.8
Miscellaneous	43.0	42.0	-1.0	-1.1
<b>Total</b>	<b>\$ 3460.0</b>	<b>\$ 3370.0</b>	<b>\$ -90.0</b>	<b>100.0%</b>

AN UPDATE ON REVENUE ESTIMATES FOR FY 1991-92  
AS COMPARED TO THE APPROPRIATION ACT ESTIMATES FOR FY 1991-92

On June 4, 1991 (26 days before the end of FY 1990-91) without the benefit of final collections for the fiscal year, the BEA was asked to provide an updated General Fund Revenue estimate for FY 1991-92 to facilitate the passage of the Appropriation Act for FY 1991-92. That revised estimate reduced the FY 1990-91 estimate base by \$90 million from \$3,460 million to \$3,370 million. As a result of this lower base and the economic outlook the FY 1991-92 estimate was reduced by \$100 million from \$3,624 million to \$3,524 million. The Appropriation Act estimate of \$3,588.3 million was passed and included legislative additions of \$64.3 million to this \$3,524 million estimate.

Final collections for FY 1990-91 of \$3,305.4 million were not released until August 9, 1991 and they were \$64.6 million less than the June 4, 1991 BEA estimate of \$3,370 million. Weakness in collections continued during June and into July of FY 1991-92. The BEA was again requested to provide a revenue update for FY 1991-92 on July 26, 1991. This revision brought the FY 1991-92 estimate down to \$3,440 million or a \$148.3 million total reduction from the FY 1991-92 Appropriation Act estimate.

The BEA was aware of approximately \$63 million in shortfall from the FY 1990-91 economic base. The final audited figures revealed a shortage of \$64.6 million. The bulk of this shortfall, \$51.1 million, was in Individual Income tax. Sales taxes were down \$17.1 million and Corporate Income taxes were down \$3.8 million. Individual Income taxes were down because of a more pronounced slowdown in business activity than expected when the forecast was originally made, and the Sales tax results were down for the same reason plus the adverse effect of the movement of people from South Carolina during and after "Operation Desert Storm".

During the deliberations of the FY 1991-92 Act the BEA reduced the effect of the Medicaid multiplier on Sales tax revenue by \$1.2 million and \$4.2 million on Individual Income taxes, for a total \$5.4 million.

Downward revision of agency estimates during FY 1991-92 were as follows:

All Other Revenue:	
Insurance and Workers' Compensation	\$ 7.8
Earnings on Investment	11.0
Taxes on Coin-Operated Devices	8.0
Miscellaneous Sources:	
Indirect Cost Recoveries	1.3
Total	\$ 28.1

Additional weakness in the South Carolina economy affecting FY 1991-92 is expected to result in an \$8.9 million reduction in Sales Tax, \$26.2 million reduction in Individual Income tax, \$0.8 million reduction in Corporate Income tax, \$7.8 million reduction in All Other Revenue and \$0.3 million reduction in the Miscellaneous category.

The BEA met again on October 9, 1991 to provide an updated General Fund Revenue estimate for FY 1991-92 as a revised base for FY 1992-93. Revenue trends through the July-September period of FY 1991-92 were tracking within the \$3,390 million to \$3,470 million range specified upon release of the \$3,440 million estimate on July 26, 1991. The BEA made internal offsetting adjustments totaling \$14 million. Individual Income taxes and Corporate Income taxes were adjusted up \$4.0 million and \$10.0 million, respectively. All Other revenues and Miscellaneous revenues were adjusted down \$11.1 million and \$2.9 million, respectively, to provide a realistic base for FY 1992-93 revenue growth, with no change warranted to the \$3,440 million total estimate. A listing by major category of the FY 1991-92 BEA estimate of \$3,440 million, as revised, is shown in Table I of this Report.

TABLE B

CAUSES UNDERLYING \$148.3 MILLION REDUCTION BY BEA  
OF FY 1991-92 APPROPRIATION ACT ESTIMATE  
OF \$3,588.3 MILLION ON JULY 26, 1991

AMOUNT (MILLIONS)	DESCRIPTION OF CAUSE BY REVENUE SOURCE	PERCENT DISTRIBUTION
\$ -64.6	1) FY 1990-91 BASE REDUCTIONS: \$3305.4 ACTUAL VS. \$3370 BEA 6/4/91 ESTIMATE AS BASE FOR FY 1991-92 APPROP. ACT	43.6
	SALES -17.1	
	INDIV -51.1	
	CORP -3.8	
	ALOTHR 2.1	
	MISC 5.3	
-6.2	2) FY 1990-91 BASE REDUCTION FOR NON-RECURRING REVENUE NOT PREVIOUSLY INCLUDED BY AGENCIES FOR BEA 6/4/91 ESTIMATE	4.2
	ALOTHR -1.2 DHEC Infectious Waste Fee	
	MISC -5.0	
	-4.0 HHSFC (J02) Medicaid fund lapse	
	-1.0 Insurance Services (F30) prior year surplus	
-5.4	3) FY 1991-92 REDUCTION IN ENHANCEMENTS BY BEA 7/26/91 OF LEGISLATIVE ADDITIONS OF \$64.3 MILLION	3.6
	SALES -1.2 Multiplier Effect	
	INDIV -4.2 Multiplier Effect	
-28.1	4) FY 1991-92 AGENCY REVISIONS BY BEA 7/26/91	18.9
	ALOTHR -26.8	
	-7.8 Insurance/Workers Comp.	
	-11.0 Earnings on Investment	
	-8.0 Coin-Operated Devices	
	MISC -1.3 Indirect Cost Recoveries	
-44.0	5) FY 1991-92 REDUCTIONS FROM WEAKER ECONOMIC CONDITIONS BY BEA 7/26/91	29.7
	SALES -8.9	
	INDIV -26.2	
	CORP -0.8	
	ALOTHR -7.8	
	MISC -0.3	
\$ -148.3		100.0