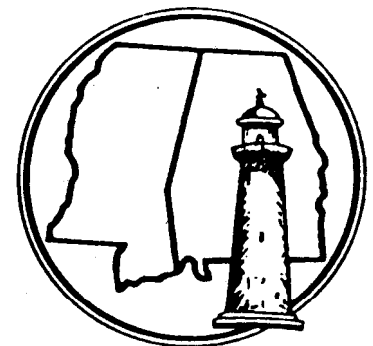


EFFECTS OF HURRICANE CAMILLE ON THE
ECONOMY OF HARRISON COUNTY

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EFFECTS OF HURRICANE CAMILLE ON THE ECONOMY
OF HARRISON COUNTY

Introduction

I consider it an honor to have been invited and a pleasure to be on your program. Economic activity affects the environment. Also, the environment affects economic activity. The focus of this paper is on the effects of Hurricane Camille on the economy of Harrison County, Mississippi. Hurricane Camille which struck in August 1969 is considered to be one of the most devastating to ever hit the Gulf Coast. The physical damage in the Mississippi Gulf Coast area was estimated to be about \$1 billion.* An analysis of its effect on the economy could focus on various sectors or parts. I will focus on the overall economic activity in Harrison County as reflected by sales data reported by the State Tax Commission. Some attention will be given to the location of the activity within the county and to selected variables.

Total and Retail Sales

With \$1 billion damage, off-hand, one could suspect a sharp drop in economic activity. However, this was not the case, with the possible exception of for a rather short period

* Mississippi Employment Security Commission, "Disaster Unemployment Assistance in Mississippi, December 15, 1969-August 31, 1970," December 1970.

of time. As shown in Figure 1, total sales showed a sharp increase after the Hurricane--in fiscal 1970--and then dropped back to about the trend line in 1971 in Gulfport: Biloxi and Harrison County as a whole.

Total sales in the county during the year prior to Hurricane Camille (Calendar 1968) was \$378.9 million. They increased just over \$100 million to \$488.3 million in FY 1970 and then dropped to \$462.6 million in 1971, and then increased to \$503.5 million in 1972. The increase from calendar year 1968 to FY 1970 was 29 percent compared to 21 percent for the previous year (from 1967 to 1968). Retail sales, Figure 2, show the same general picture.

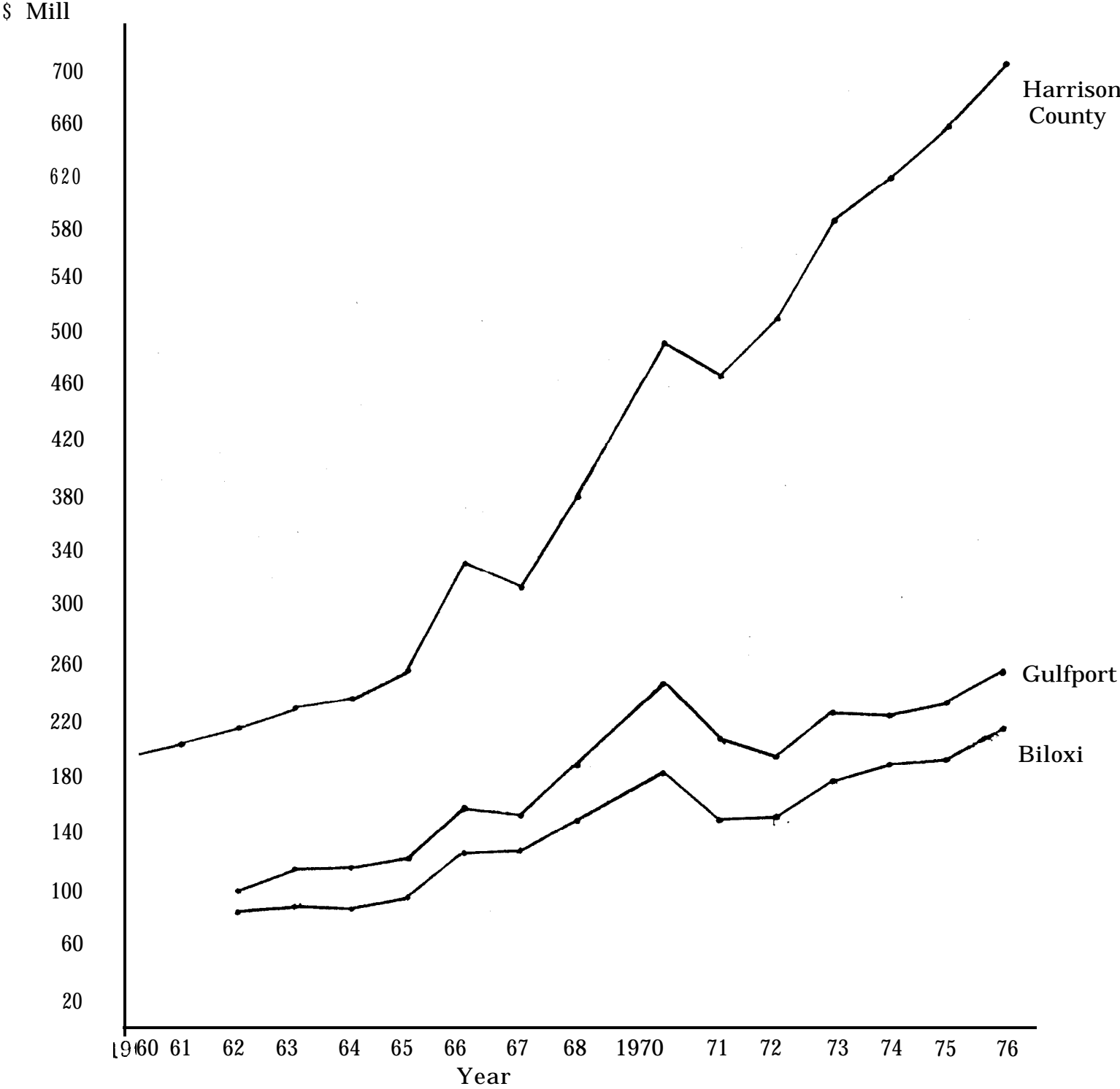
It may be noted that the trend in sales increased after the hurricane compared to before. With approximately \$1 billion damage in the coast area, what accounts for the increase in economic activity rather than a decrease? Most of the homes and businesses destroyed and damaged were built back and repaired. Part of it was financed through insurance, government grants and loans and no doubt the people had to use savings and make conventional loans.

Sales by Category

As shown in Figures 3 through 10, all of the major sales categories showed an increase in sales after the Hurricane, FY 1970, with the exception of food and beverage and miscellaneous retail sales, also most of the sales

* It should be noted that the data were reported on a calendar year basis through 1968. The data were then reported on a July-June fiscal year basis beginning with fiscal year 1970.

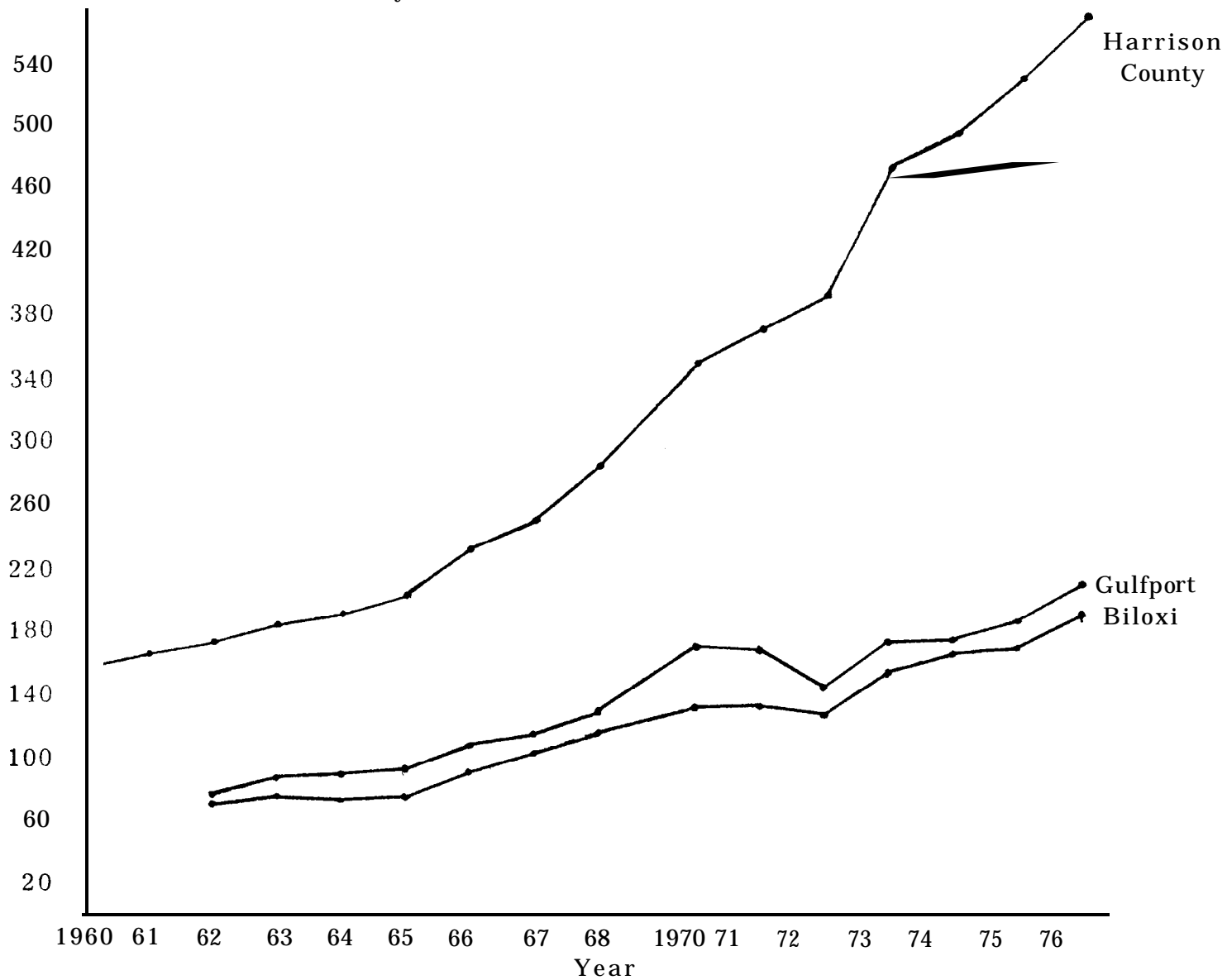
Figure 1. TOTAL SALES- The cities of Biloxi and Gulfport, and Harrison County, 1960- 76



Source : Appendix Table 1

\$ Mill

Figure 2 Total Retail Sales in the cities of Biloxi and Gulfport and Harrison County, 1960-76



Source: Appendix Table 1

categories showed corresponding adjustments after either one or two years. For example auto sales in Harrison County were \$71.6 million in FY 1970 compared to 57.5 million and 64.1 million in the previous and following year, respectively.

As would be expected contracting, lumber and building materials sales were affected significantly and for a longer period of time, Figure 7. Sales in that category totaled 85.2 million in 1970 in Harrison County an increase of 79 percent from the previous year. They increased to \$101 million in 1971, an increase of 19 percent, and then leveled off for the county. In contrast contracting, lumber and building materials sales dropped significantly in 1972, back to the pre-hurricane level in both Gulfport and Biloxi. This implies that most of the new construction in Harrison county after the hurricane took place outside of the city limits of Gulfport and Biloxi. This conclusion is supported by building permits issued for new residential housing shown in Figure 11.

Quarterly Data

An examination of sales data for Harrison County in 1969 on a quarterly basis shows no adverse effects of Camille in any category. On the contrary, contracting, lumber and building materials sales rose 17 percent the third quarter, followed by a 36 percent increase the fourth and a 55 percent increase in the first quarter of 1970. Wholesale and retail sales posted substantial increases the three quarters following Camille as illustrated by figure 12.

Figure 3 Automobile Sales in the Cities of Biloxi and Gulfport, and Harrison County, 1960-75.

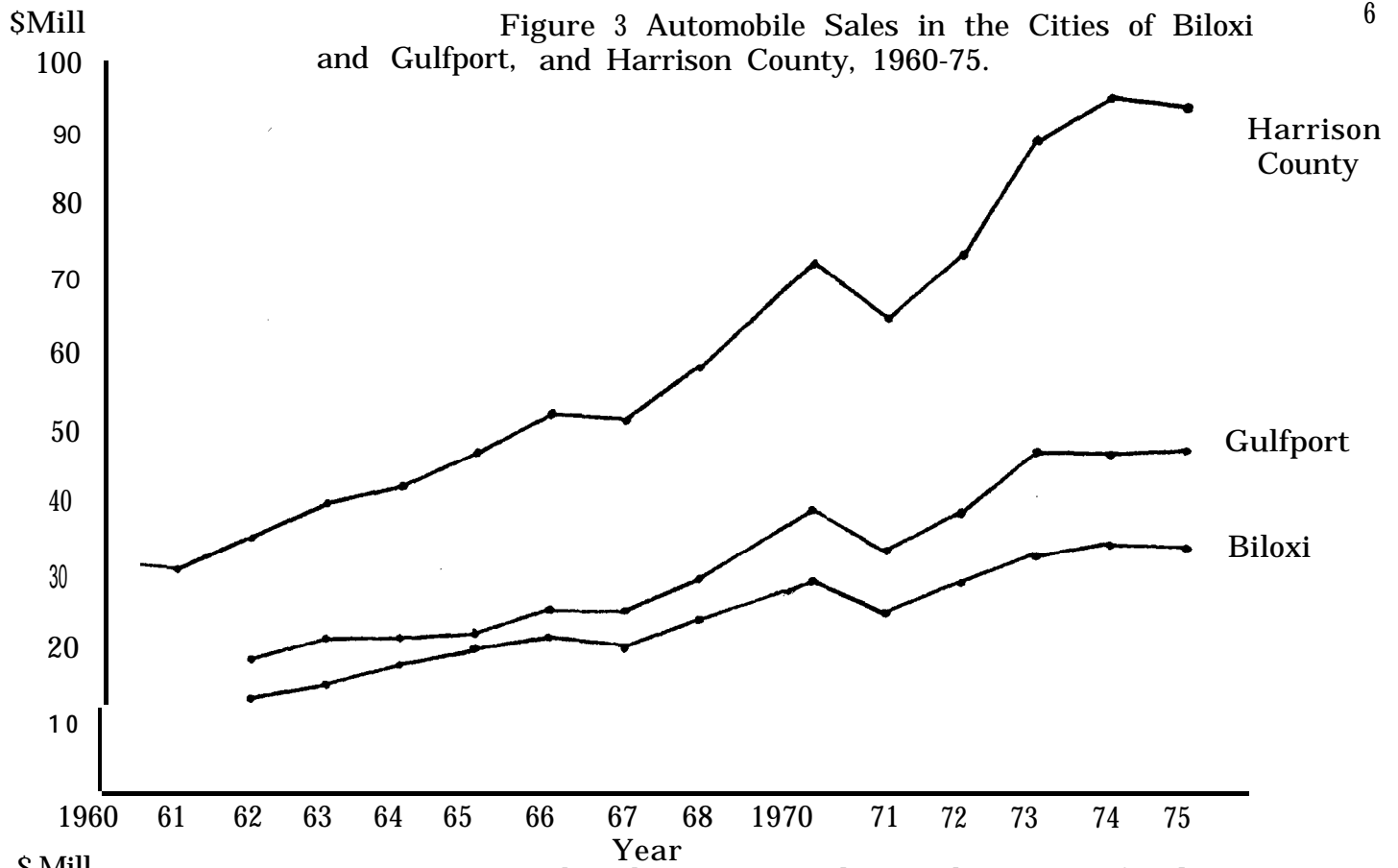
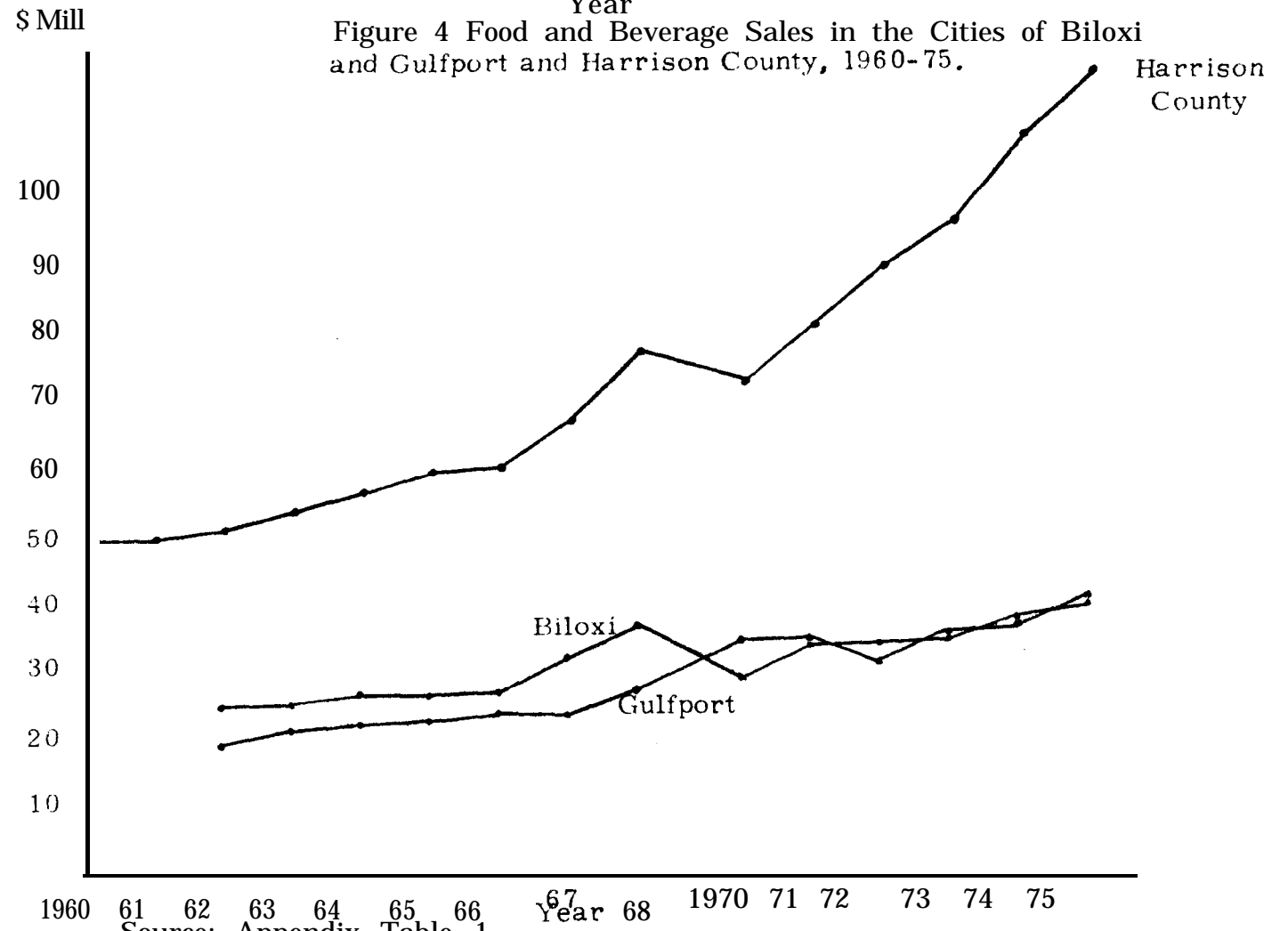
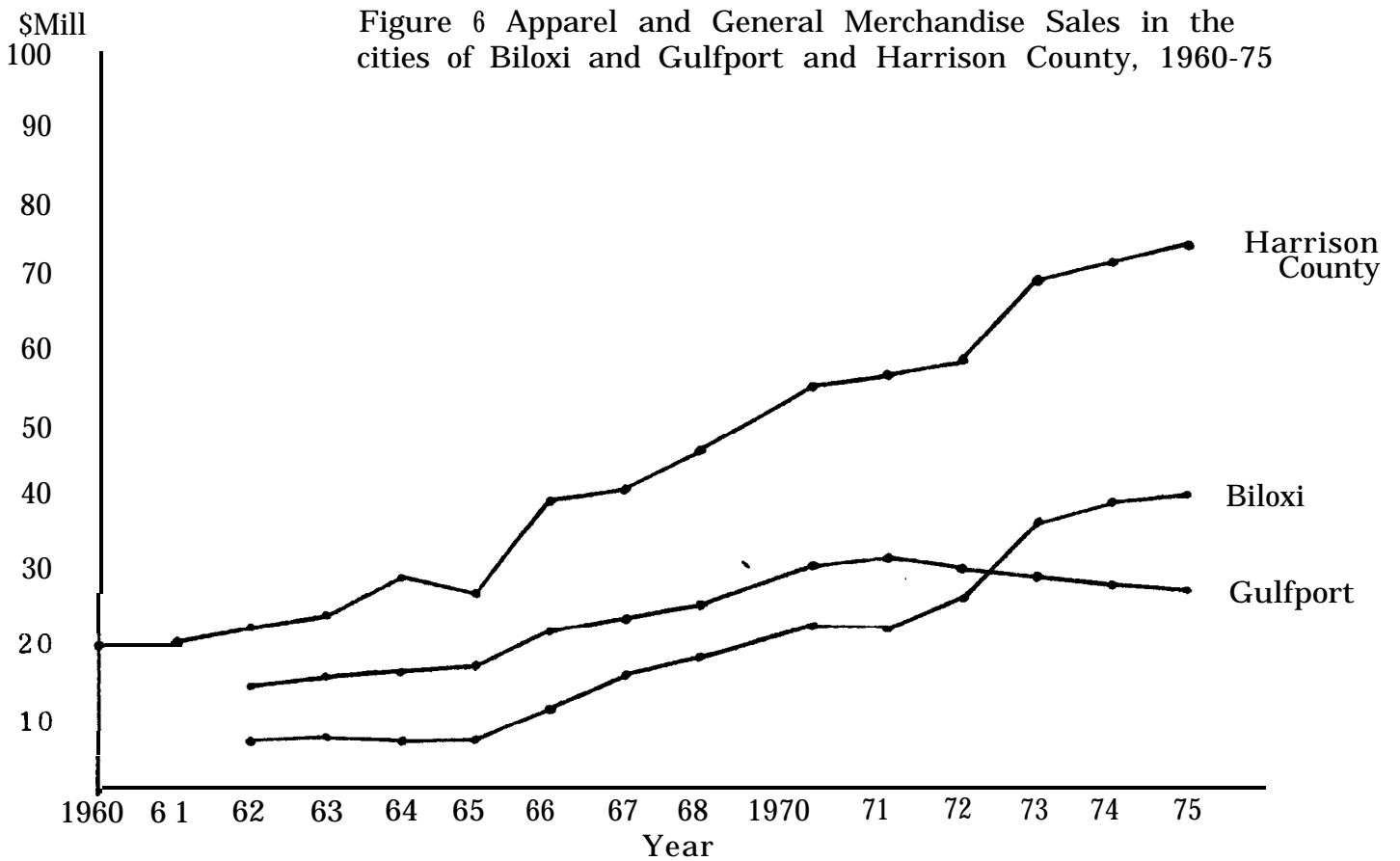
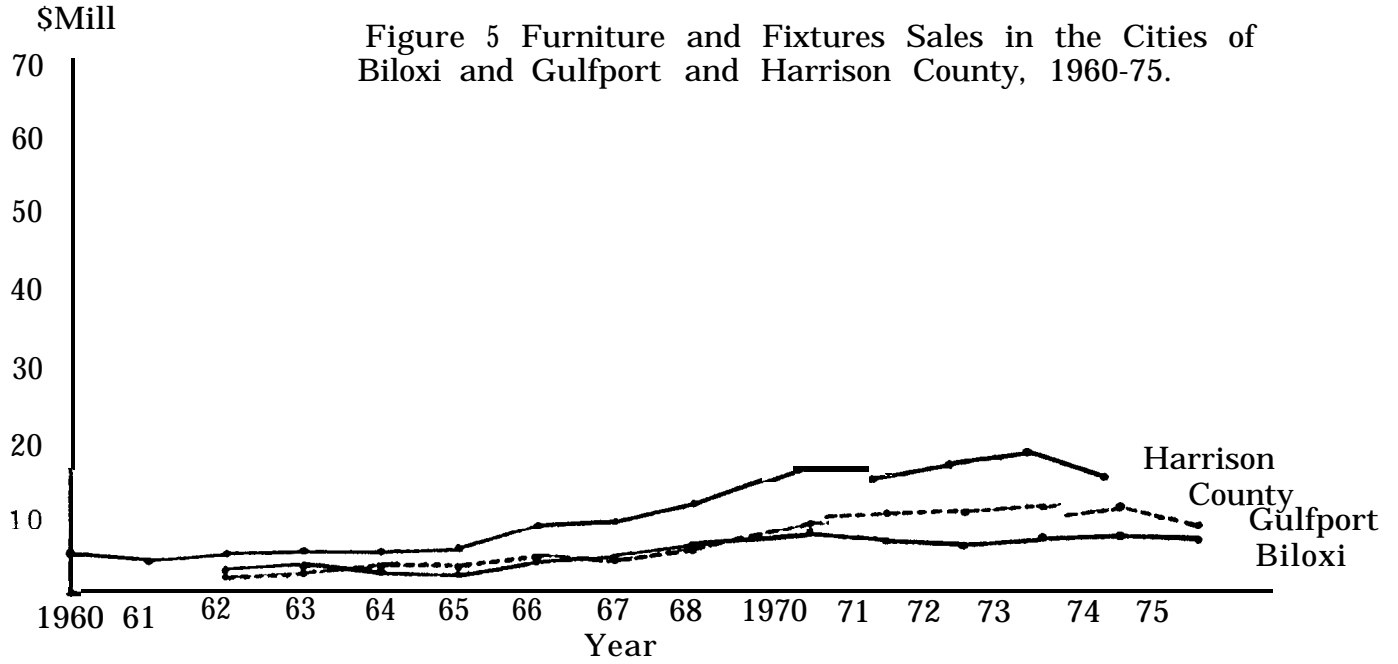


Figure 4 Food and Beverage Sales in the Cities of Biloxi and Gulfport and Harrison County, 1960-75.



Source: Appendix Table 1



Source : Appendix Table 1

Figure 7 Contracting, Lumber and Building Materials Sales in the cities of Biloxi and Gulfport and Harrison County, 1960-75

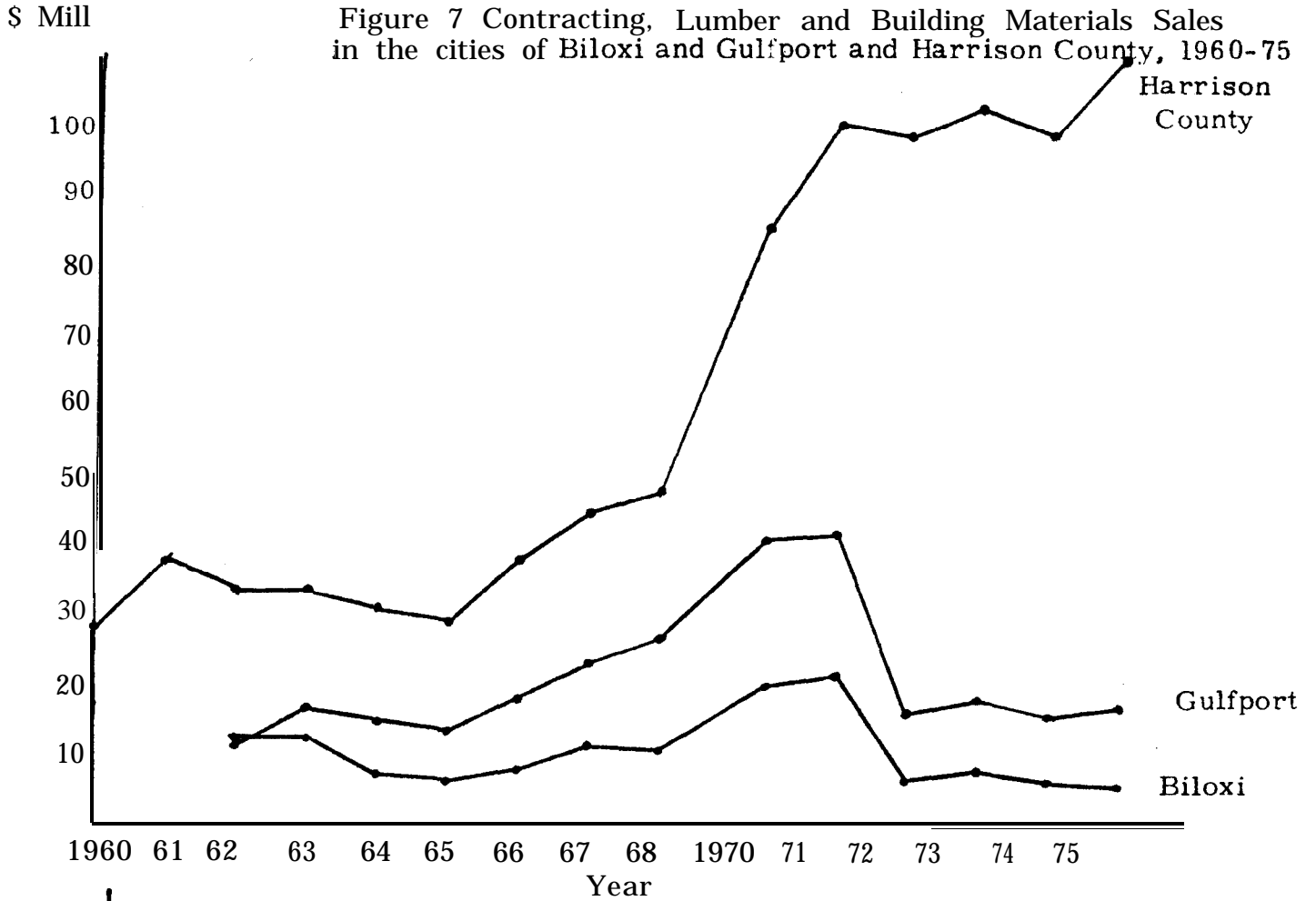
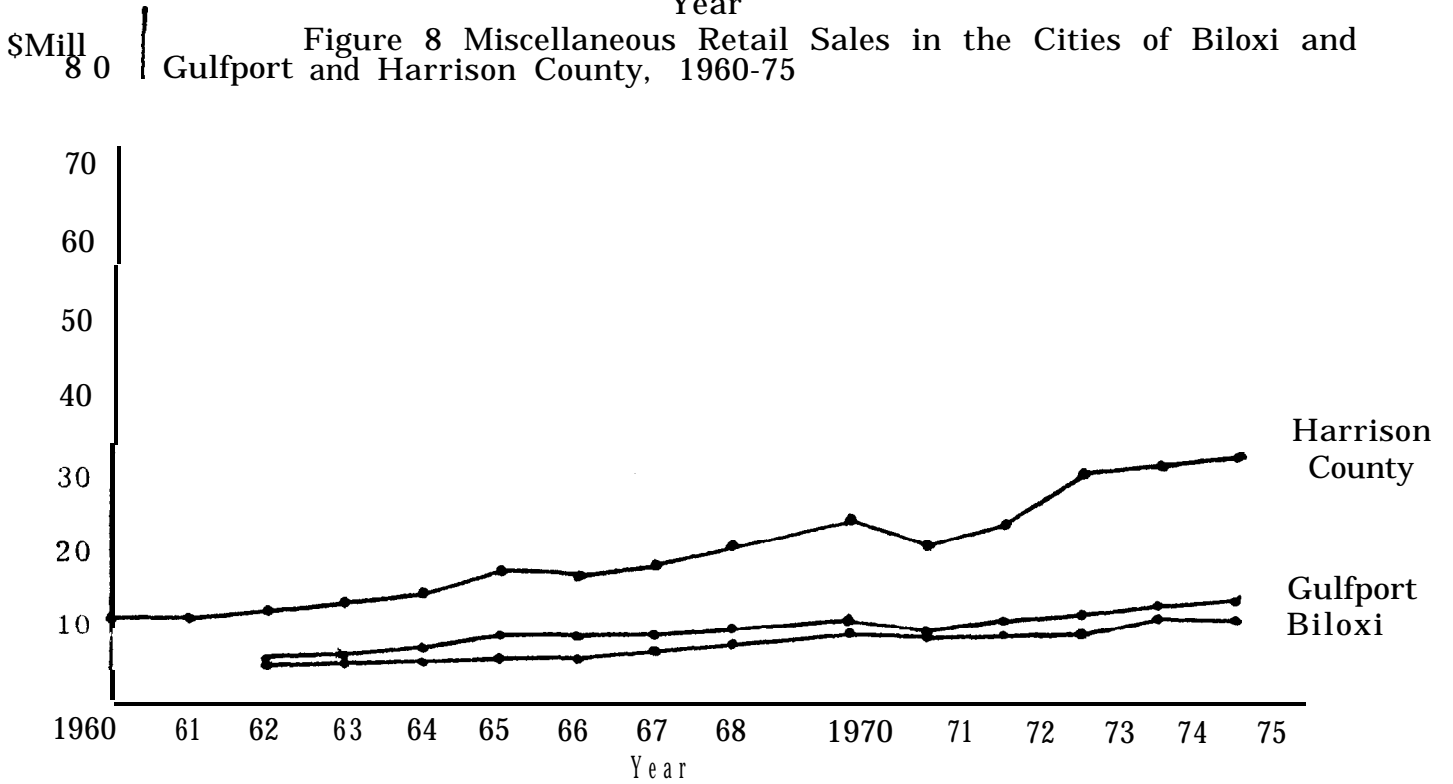


Figure 8 Miscellaneous Retail Sales in the Cities of Biloxi and Gulfport and Harrison County, 1960-75



Source: Appendix Table 1

Figure 9 - Miscellaneous Services Sales in the Cities of Biloxi and Gulfport and Harrison County, 1960-75.

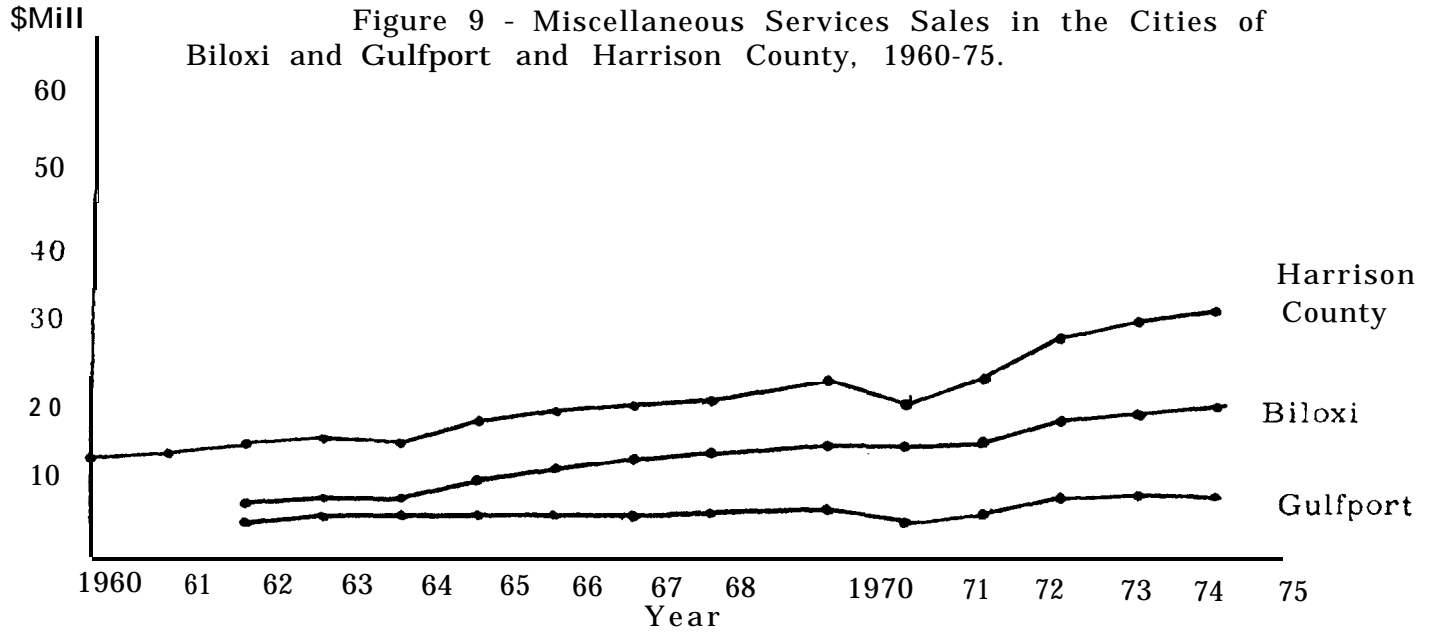
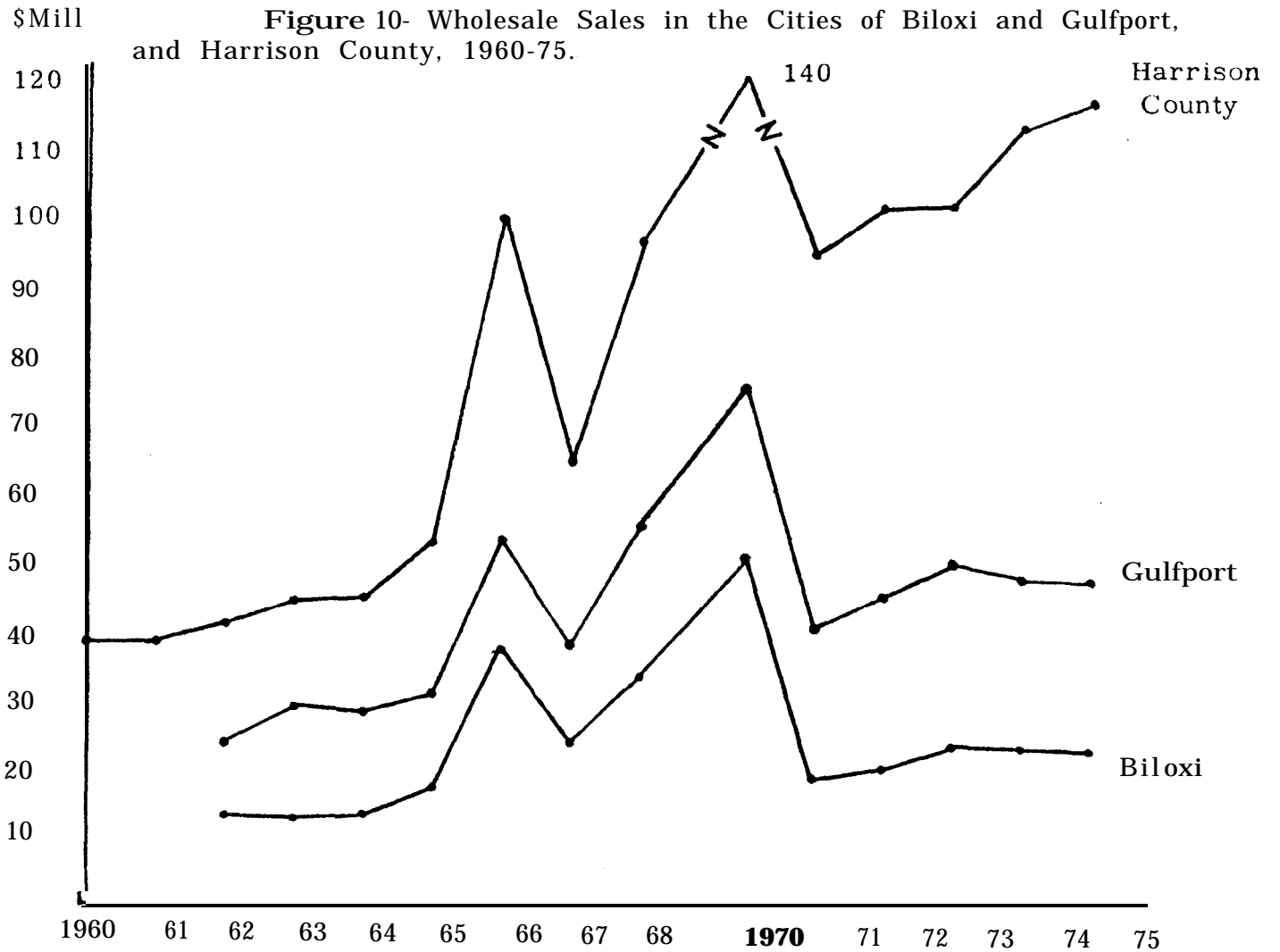
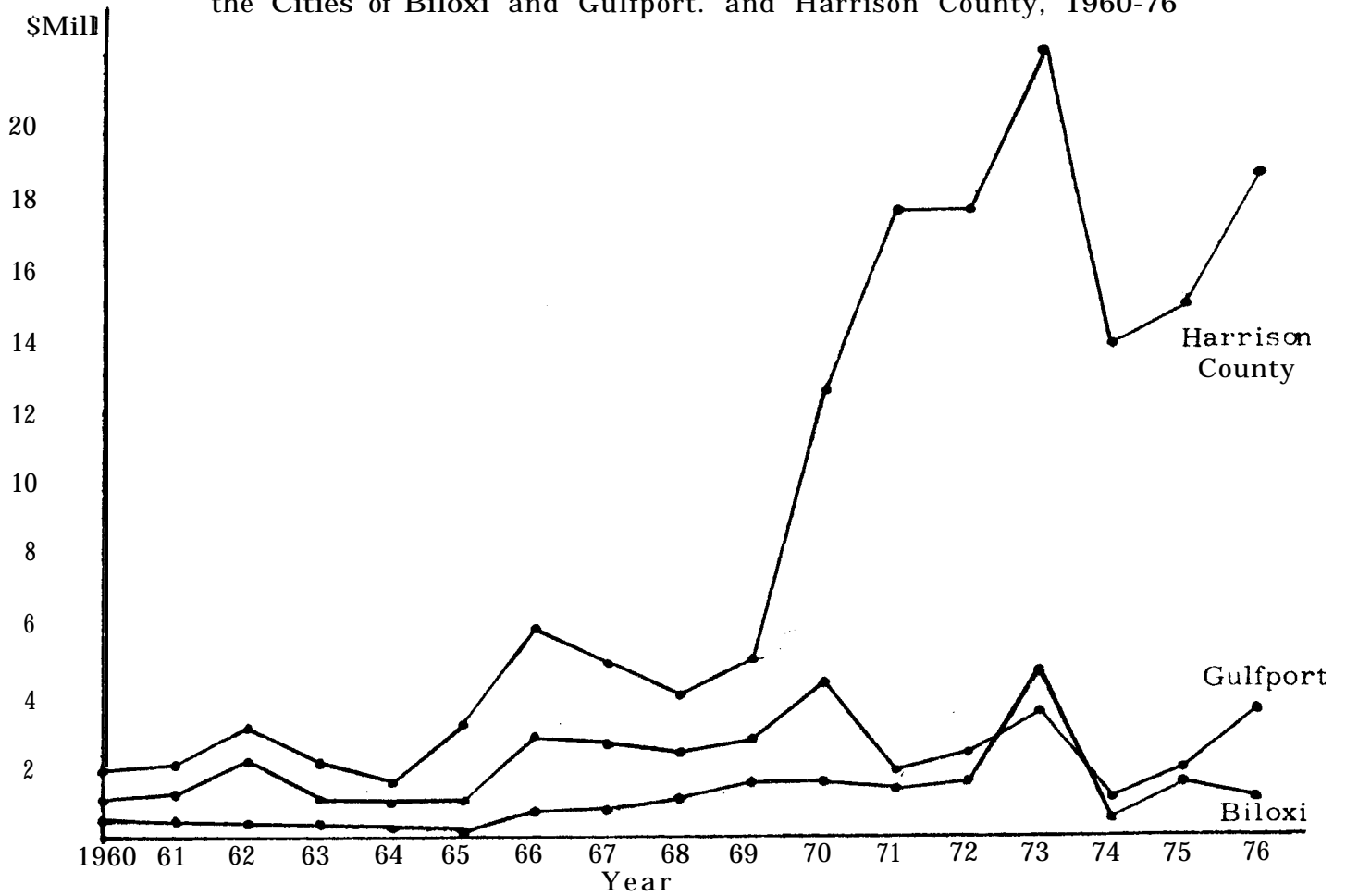


Figure 10- Wholesale Sales in the Cities of Biloxi and Gulfport, and Harrison County, 1960-75.



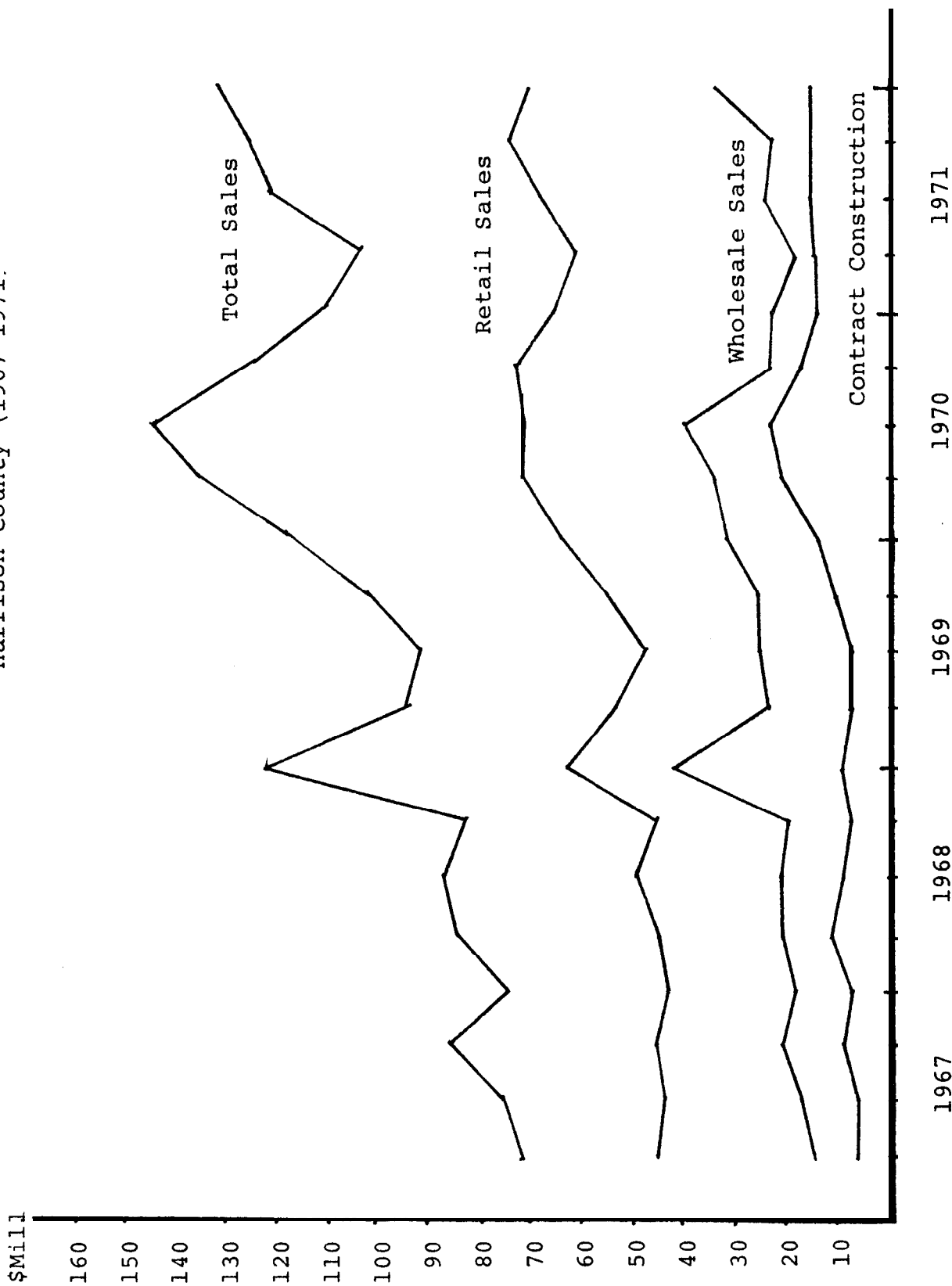
Source: Appendix Table 1

Figure 11- New Residential Housing, Building Permits Issued in the Cities of Biloxi and Gulfport, and Harrison County, 1960-76



Source: Appendix Table 3

Figure 12 Selected Sales Categories
Harrison County (1967-1971).



Source: Mississippi State Tax Commission

Tourism

Approximately 1600 hotel and motel rooms--43 percent of all such beachside facilities operating before the hurricane--and some 50 restaurants and other eating places were destroyed or severely damaged.* Since Camille struck at the beginning of the off season the effects on tourism was minimized. Most of the facilities were rebuilt and repaired by the time of the peak season in 1970.

Port Activity

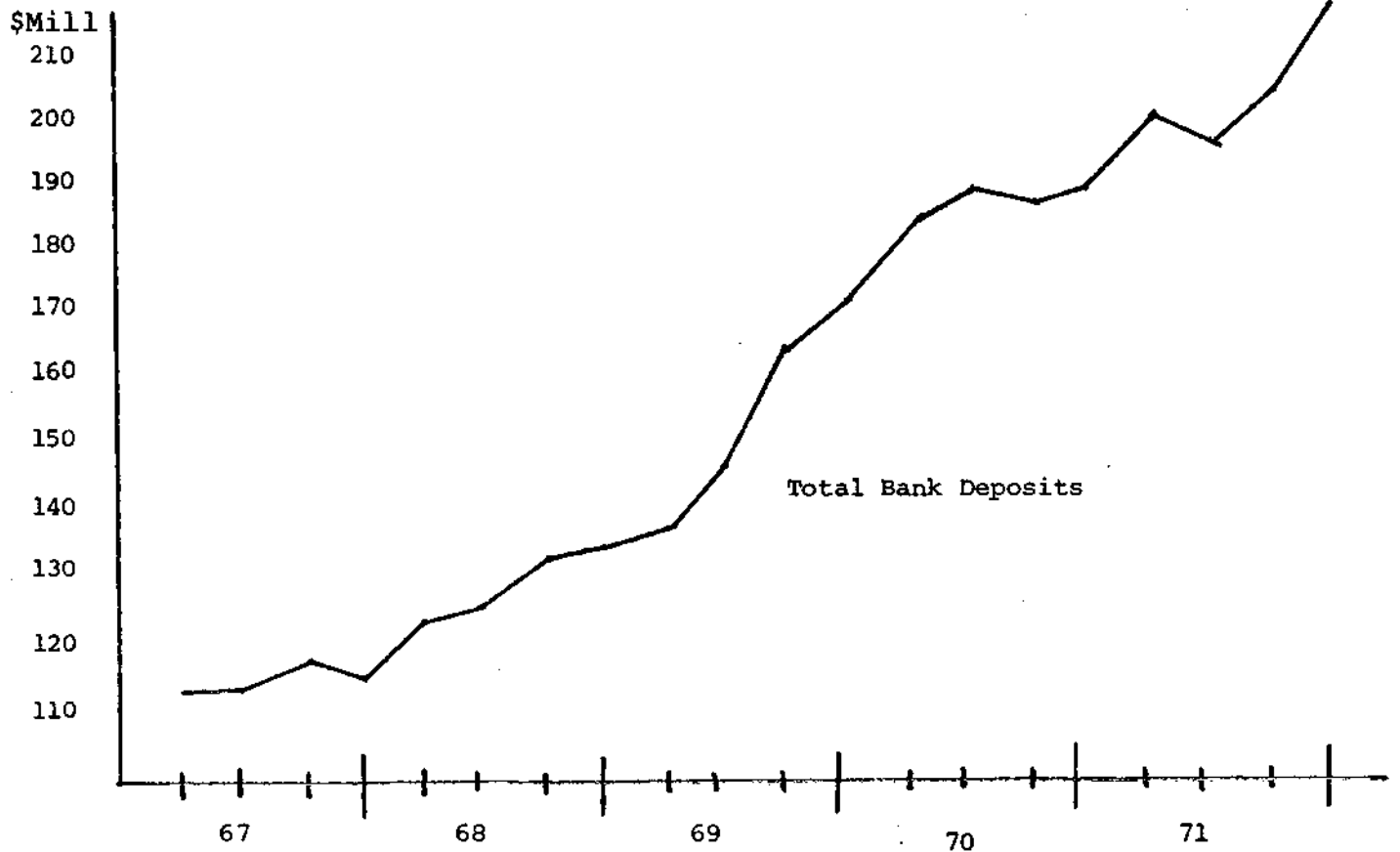
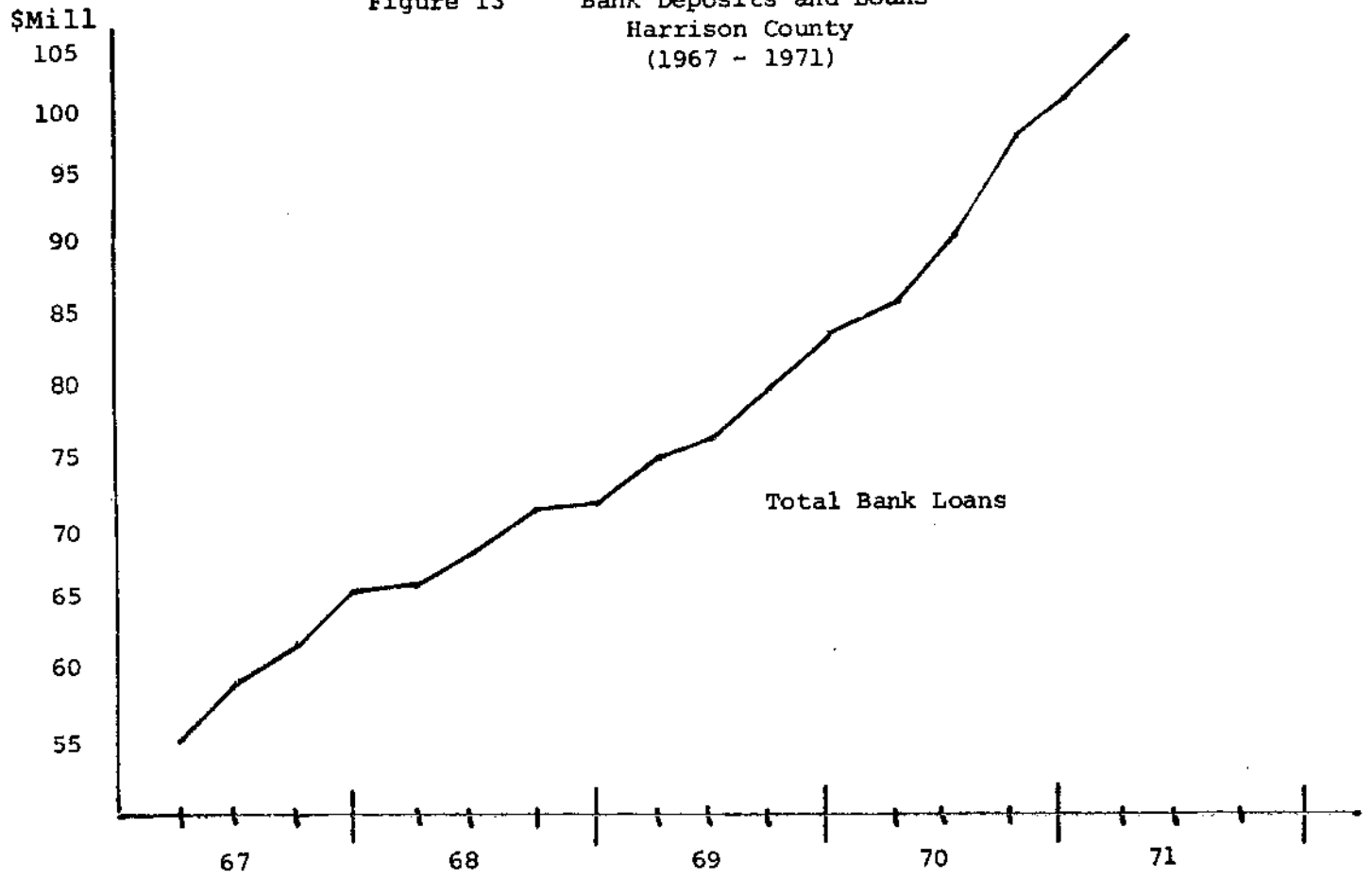
Hurricane Camille virtually destroyed the Port of Gulfport in 1969. As a result an expected increase in tonnage of 33 percent for 1969 was not realized. In fact, tonnage handled decreased 24 percent due to the Port being operational for only 6 1/2 months of 1969.

Banking Activity

As a result of the destruction of Hurricane Camille, a tremendous influx of federal and state funds poured into the coastal area. Therefore, banking activity was brisk, Figure 13. Total deposits in 1969 were up 13 percent from the second quarter to the third quarter, a much larger than typical quarterly increase. The largest increase in deposits was posted the first quarter following the storm. Interestingly, demand deposits absorbed the increase in deposits increasing 17 percent

*Ibid, Foreward

Figure 13 Bank Deposits and Loans
Harrison County
(1967 - 1971)



Source: All bank data are taken from the published call statements of the individual banks in the area or are furnished by the bank upon request.

while time deposits increased a more modest 5.6 percent, reflecting the need of these new deposits to repair and replace damaged goods. Total deposits never receded to pre-Camille level.

Utilities

As a result of Hurricane Camille the electrical utility companies' facilities and the telephone facilities were damaged severely. It took \$50 million in utility funds to restore the damage.

Electrical

Initially 100 percent of electrical connections in Harrison County were out of service. Within a month and a half service had been restored to fill the demand, however, due to loss of demanding units the number of connections decreased 10 percent from the end of the second quarter of 1969 to the end of the 3rd quarter of 1969. It took five quarters before the number of connections reached the pre-Camille level, an indication of building activity.

Telephone

Telephone connections decreased 8 percent from the end of the 2nd quarter of 1969 to the end of the 3rd quarter of 1969. Three quarters after the devastating storm telephone connections were up to the pre-storm level.

Employment

Employment in the coastal area was substantially effected by Camille. The initial effect was to force upwards of 50,000 workers off their regular jobs. This resulted from, among other things, a loss of electricity, and was for a short period of time.

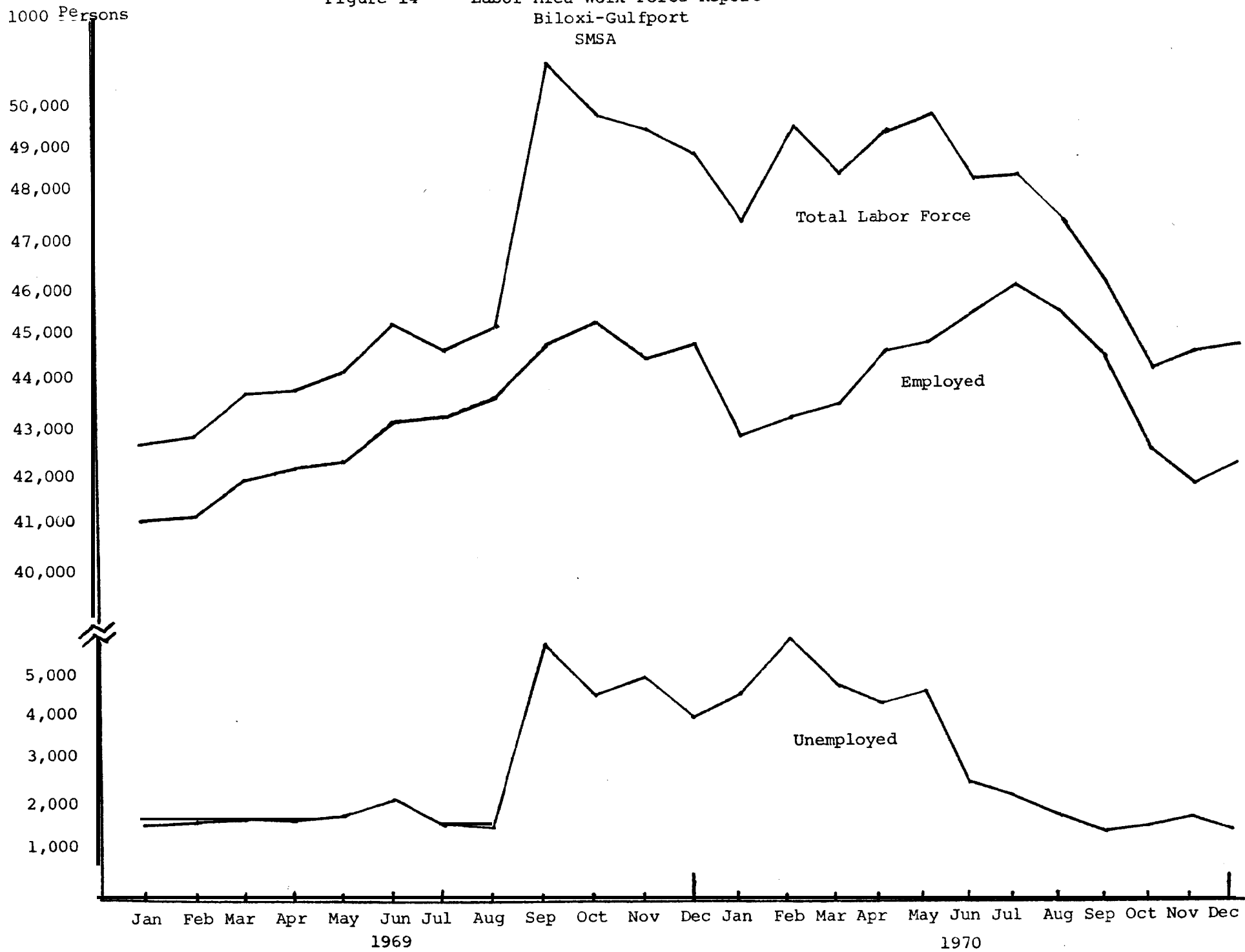
As Figure 14 illustrates the civilian work force in the Biloxi-Gulfport SMSA jumped 12.6 percent from August to September, 1969. This increase can be attributed to the influx of construction, utility, and cleanup workers after the hurricane,

The total employed also increased but only by 3 percent, which caused a jump in the unemployment rate from 3.4 percent in August of 1969 to 12 percent in September. This high rate of unemployment did not subside back to the pre-Camille rate until August of 1970 or one full year after the hurricane. Most categories of employment posted slight decreases in employment with most recovering fully within three months. The Contract Construction category showed an increase in the number employed of 107 percent, and this high level of employment in construction did not contract to the pre-Camille level until November of 1970, over one full year after the hurricane. Also government employment increased by 62 percent due to disaster relief activities.

Location Effect

An analysis of the data suggest that hurricane Camille affected the location of economic activity within Harrison County. Figure 1 shows that the trends in sales within Gulfport, Biloxi and Harrison County total were similar until about 1969. Since that time, the trends in Gulfport and Biloxi have leveled off compared to an increase for the county as a whole. These data suggest that most of the new economic development after Camille took place in the rural area rather than near the beach.

Figure 14 Labor Area Work Force Report
 Biloxi-Gulfport
 SMSA



Source: U.S. Dept. of Labor

The data in Figures 15 and 16 showing total sales and retail sales in Biloxi and Gulfport as percent of the totals in Harrison County also reflect this shift in distribution. As shown in Figure 11, building permits also reflect such a shift. For example, of the value of new residential building permits in Harrison County during the period 1960 through 1969, 16 percent were in Biloxi and 53 percent were in Gulfport. Thus, Biloxi and Gulfport accounted for 69 percent of the total. However, for the period from 1969 to 1976, Biloxi accounted for only 10 percent, Gulfport 16 percent and thus Biloxi and Gulfport only 26 percent. These data show that much of the new residential development shifted from within the city limits of Biloxi and Gulfport to outside the city limits. Along with these developments neighborhood shopping centers have also developed outside the city limits. These factors seem to explain much of the divergence in sales of Biloxi and Gulfport as compared to the county total.

Other factors may be associated with the economic development outside the city limits of Gulfport and Biloxi, such as the construction of Interstate Highway I-10. It was opened west of Gulfport July 1973 and east of Gulfport March 1976. However, Hurricane Camille seems to have been the major stimulus for this shift in location of economic development.

Conclusion

In conclusion, Hurricane Camille had the effect of stimulating total sales in Harrison County rather than depressing economic activity. The trend in sales also increased. Most sales

Figure 15 Total Sales - Cities of Biloxi and Gulfport as Percent of Harrison County Total, 1962-76

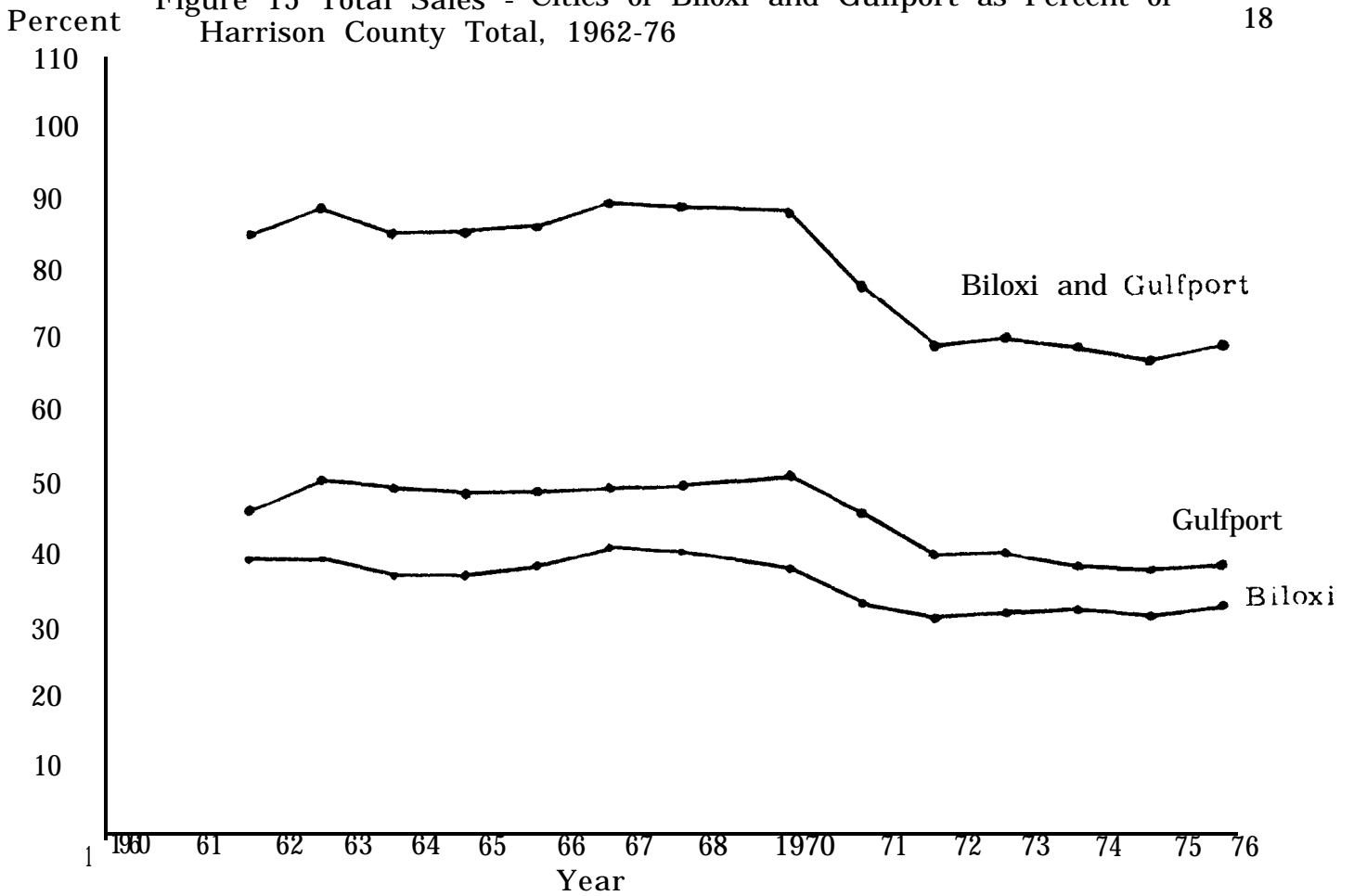
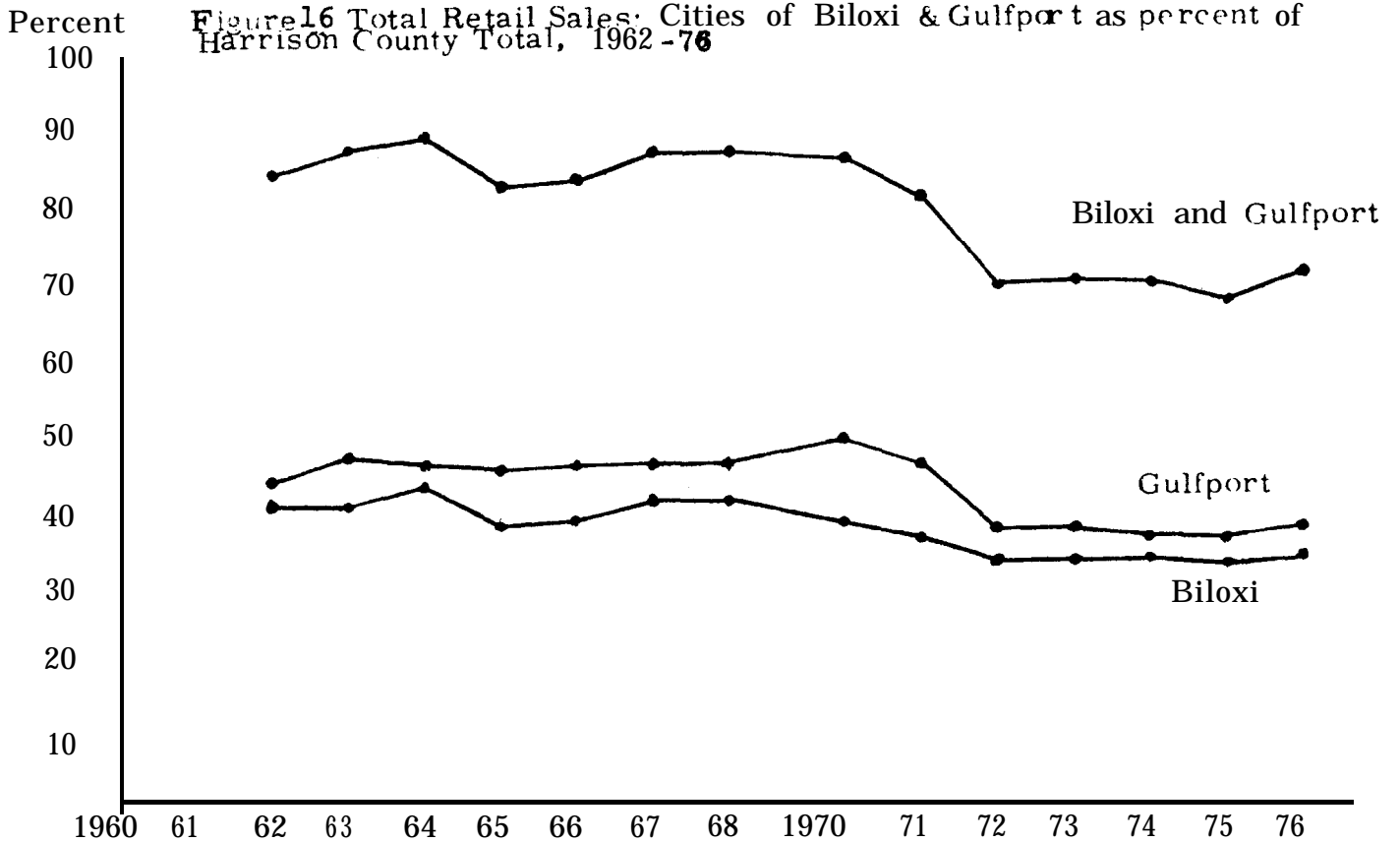


Figure 16 Total Retail Sales: Cities of Biloxi & Gulfport as percent of Harrison County Total, 1962-76



Source: Appendix Table 2

categories made a sharp increase and then showed adjustments downward within about one year, but at a level higher than before the Hurricane. However, contracting lumber and building materials sales showed sharp increases for about two years before leveling off. Hurricane Camille seemed to be a major stimulus for new economic activity to take place in the rural area rather than nearer the coast within the city limits.

APPENDIX

APPENDIX TABLE 1
RETAIL AND WHOLESALE SALES, BILOXI. GULFPORT AND
HARRISON COUNTY, 1960-1976
(In Millions of Dollars)

	Total	Auto	Machinery Equip & Supplies	Food & Beverage	Furniture & Fixtures	Public Utilities	Apparel & Gen. Mdse.	Contracting Lbr. & Bldg. Materials	Misc. Retail	Misc. Services	Total Retail	Wholesale
Biloxi												
1960												
1961												
1962	83.5	13.1	NA	24.3	2.6	NA	6.6	12.1	5.0	6.9	70.7	12.8
1963	87.1	14.9	NA	25.0	2.8	NA	6.9	12.2	5.5	7.3	74.5	12.6
1964	85.4	17.2	NA	26.2	2.4	NA	6.2	7.5	5.6	7.3	72.4	12.9
1965	93.5	19.7	NA	26.1	2.4	NA	6.7	6.2	6.3	9.2	76.6	16.9
1966	125.1	21.4	NA	26.5	4.0	NA	10.4	8.2	6.3	11.3	88.1	37.0
1967	125.3	19.6	NA	32.0	4.2	NA	15.0	11.3	7.2	12.5	101.8	23.5
1968	148.2	23.2	NA	36.6	5.9	NA	17.0	10.3	22.1*	*	115.0	33.1
1969												
1970	180.2	28.4	NA	28.6	7.3	NA	21.6	19.4	9.7	14.2	129.4	50.8
1971	148.2	24.6	2.5	33.2	6.1	NA	20.9	21.4	8.1	13.5	130.3	17.9
1972	150.2	28.2	2.3	33.7	5.3	4.9	25.0	6.5	9.1	14.7	125.7	19.5
1973	176.2	31.9	2.2	34.3	6.3	9.9	35.2	7.4	9.7	17.1	153.9	22.3
1974	186.3	32.7	2.1	37.7	6.4	11.2	37.9	5.8	11.7	18.4	164.0	22.3
1975	189.6	32.3	2.5	39.8	5.8	12.8	38.6	5.1	11.5	19.1	167.4	22.2
1976	212.9										189.2	
Gulf- port												
1960												
1961												
1962	99.0	17.8	NA	18.7	2.3	NA	14.2	2.0	5.6	4.5	75.3	23.7
1963	114.1	20.1	NA	20.2	2.6	NA	15.3	16.4	6.1	5.0	85.9	28.3

APPENDIX TABLE 1 -- Continued

	Total	Auto	Machinery Equip. & Supplies	Food & Beverage	Furniture & Fixtures	Public Utilities	Apparel & Gen. Mdse.	Contracting Lbr. & Bldg. Materials	Misc. Retail	Misc. Services	Total Retail	Wholesale
1964	115.1	20.5	NA	21.5	2.6	NA	15.7	14.9	7.0	5.1	87.3	27.7
1965	121.8	21.7	NA	22.1	2.8	NA	16.7	13.4	8.9	5.2	91.0	30.8
1966	158.9	25.0	NA	23.6	4.2	NA	21.1	17.9	8.4	5.5	105.9	52.9
1967	151.1	24.7	NA	23.6	4.0	NA	23.0	23.7	8.8	5.3	113.2	37.9
1968	184.0	28.8	NA	27.2	5.1	NA	24.8	26.6	16.3*	*	129.0	55.0
1969												
1970	243.4	38.4	NA	34.1	8.2	NA	29.3	40.8	11.1	6.3	168.3	75.0
1971	206.0	32.9	3.6	34.4	8.6	NA	30.7	41.3	10.0	4.4	166.1	40.0
1972	192.5	37.8	3.3	31.0	8.6	6.2	28.8	15.7	11.1	5.2	141.5	44.7
1973	222.0	45.9	3.7	35.3	9.5	15.3	27.8	17.6	12.2	7.1	172.5	49.5
1974	222.0	45.3	6.1	36.6	10.2	12.7	27.0	15.3	13.2	7.4	173.8	47.1
1975	229.8	46.1	9.2	40.8	7.6	15.5	25.9	16.5	14.1	7.2	182.8	47.0
1976	252.3										206.2	
Harri- son Co.												
1960	195.4	31.7	NA	48.7	5.6	NA	19.7	28.1	11.1	12.5	155.4	38.0
1961	203.8	30.1	NA	48.7	4.6	NA	20.2	37.1	11.5	13.6	165.8	38.0
1962	215.1	35.0	NA	50.6	5.0	NA	22.0	33.9	12.5	14.7	173.7	41.3
1963	228.1	38.9	NA	52.8	5.5	NA	23.7	34.0	13.6	15.1	183.8	44.3
1964	236.3	41.8	NA	55.8	5.1	NA	28.1	31.3	14.5	14.7	191.5	44.7
1965	255.8	46.1	NA	58.5	5.5	NA	26.6	28.6	17.1	17.4	203.2	52.6

APPENDIX TABLE 1 -- Continued

	Total	Auto	Machinery Equip. & Supplies	Food & Beverage	Furniture & Fixtures	Public Utilities	Apparel Gen. Mdse.	Contracting Lbr. & Bldg. Materials	Misc. Retail	Misc. Services	Total Retail	Wholesale
1966	332.3	51.8	NA	60.0	8.7	NA	38.5	37.9	16.9	17.4	232.5	99.8
1967	313.2	50.3	NA	66.2	8.9	NA	40.8	44.6	18.0	18.5	248.3	64.9
1968	378.9	57.5	NA	76.7	11.4	NA	45.6	47.6	43.6	19.5	282.6	96.3
1969												
1970	488.3	71.6	NA	72.4	16.2	NA	54.0	85.2	24.6	23.3	347.4	140.9
1971	462.6	64.1	11.3	80.0	15.6	NA	55.6	101.0	20.9	19.6	368.5	94.2
1972	503.5	73.0	9.7	88.8	14.5	13.0	57.2	98.3	24.0	23.3	389.1	101.6
1973	574.0	88.7	14.2	95.9	16.4	20.0	67.4	102.6	30.6	28.2	472.2	101.9
1974	605.0	94.0	16.2	107.4	17.9	26.9	70.1	98.2	31.1	30.0	492.3	112.6
1975	640.4	92.6	21.2	117.5	14.8	31.6	72.4	109.4	32.4	31.5	524.2	116.2
1976	685.9										564.0	

Source: Mississippi State Tax Commission.

Note: 1. Data are on calendar year basis through 1968 and then on fiscal year basis.

2. Miscellaneous Services were first included in total retail as reported in 1968 and natural resources in 1973. They were added to total retail sales to make the services more comparable.

3* Miscellaneous services were included in miscellaneous retail in 1968.

4. The sums of the categories may not equal the totals due to rounding. Also, a "Natural Resources" category was not included in this table because such sales were less than \$1 million per year.

APPENDIX

TABLE 2

SALES COMPARISONS - CITIES OF BILOXI AND GULFPORT AS
PERCENT OF HARRISON COUNTY DATED, 1962-1976

	Total Sales			Total Retail Sales		
	Biloxi	Gulfport	Biloxi & Gulfport	Biloxi	Gulfport	Biloxi & Gulfport
1962	38.8	46.0	84.8	40.7	43.4	84.1
1963	38.2	50.0	88.2	40.5	46.7	87.2
1964	36.1	48.7	84.8	43.1	45.6	88.7
1965	36.6	47.6	84.2	37.7	44.8	82.5
1966	37.6	47.8	85.4	37.9	45.6	83.5
1967	40.0	48.2	88.2	41.0	45.6	86.6
1968	39.1	48.6	87.7	40.7	45.6	86.3
1969	a-	—	—	-	—	—
1970	36.9	49.8	86.7	37.2	48.5	85.7
1971	32.0	44.5	76.5	35.4	45.1	80.5
1972	29.8	38.2	68.0	32.3	36.4	68.7
1973	30.7	38.7	69.4	32.6	36.5	69.1
1974	30.8	36.5	67.3	33.3	35.3	68.6
1975	29.6	35.9	65.5	31.9	34.9	66.8
1976	31.0	36.8	67.8	33.6	36.6	70.2

Source: Appendix Table 1

APPENDIX TABLE 3

**DOLLAR VALUE OF NEW RESIDENTIAL BUILDING PERMITS ISSUED,
BILOXI, GULFPORT AND HARRISON COUNTY TOTAL, 1960-1976**
(In Thousands of Dollars)

	Biloxi		Gulfport		Harrison County Total
	Amount	% of County Total	Amount	% of County Total	
1960	345	18	1,098	57	1,929
1961	313	15	1,236	60	2,038
1962	265	9	2,116	68	3,104
1963	268	13	1,028	50	2,068
1964	145	9	924	59	1,553
1965	91	3	987	31	3,192
1966	716	12	2,795	48	5,843
1967	728	15	2,596	53	4,893
1968	1,089	28	2,275	57	3,958
1969	1,506	30	2,705	55	4,963
1970	1,509	12	4,228	33	12,479
1971	1,268	7	1,871	11	17,563
1972	1,627	9	2,292	13	17,551
1973	4,670	21	3,489	16	22,051
1974	410	3	1,070	8	13,841
1975	1,489	10	1,949	13	14,933
1976	1,181	6	3,600	19	18,674

Source: Gulf Coast Branch, Mississippi Research and Development Center.