

# Economic Base

San Marcos, Hays County

Texas



1959 - 1971

E C O N O M I C    B A S E

San Marcos, Hays County

Texas

(1959-1971)

by

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## INTRODUCTION

The economic base of a region defines that activity upon which all other economic activity depends. The base activity and the dependent activity then further define the economic and general structure of the resulting society.

The purpose of this study is to define and to examine the economic base of San Marcos and Hays County. This examination entails studying not only the resulting economic structure, but other more general structural characteristics. Such information should be useful to the policy makers of the region in anticipating and compensating for the secondary and tertiary effects of a changing economic base.

The following method of analysis was used. The economy of the region was divided into sectors and the income and employment were calculated by sector. From these data, the concentration coefficients for the region were derived and using the coefficients and judgment, the base was defined. Given the base, the income and employment of the economy were classified as basic or non-basic. The secondary and tertiary effects were calculated using derived multipliers.



Two types of multipliers were computed: (1) The Tiebout multiplier and (2) a multiplier derived from data obtained from a study of a larger region.

The structure of the economy was then examined, and the contribution of the major export sectors noted. The structure was examined on the basis of income, employment, and trade. The population characteristics were also noted and income distribution was considered.

The last part of the study contains the summary and conclusions. The major points of the study are presented as well as the conclusions of the authors.

#### EMPLOYMENT IN SAN MARCOS AND HAYS COUNTY

The employment and income components of the economy were calculated on the basis of seventeen sectors. These sectors and the pertinent standard industrial classification codes are presented as Appendix A.

The employment totals for these sectors for the available time series (1959-1971) are presented in Table I. The data for this table were obtained from the Texas Employment Commission, the various available census reports, and original sources.

Total employment in the region grew from 3500 (1959) to 6972 (1971), an increase of approximately 100 percent. There were declines in 1960 and 1962, but total employment grew in the balance of the years (Table I).

TABLE I

## EMPLOYMENT BY DESIGNATED SECTOR, HAYS COUNTY, TEXAS 1959-1971

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Total	3500	3383	3725	3587	4041	4248	4469	4543	6069	6382	6591	6715	6972
Agriculture	1058	1038	998	953	919	883	849	816	782	748	714	706	675
Construction and Mining	243	162	230	158	200	170	311	280	365	355	411	330	411
Manufacturing	248	245	421	431	427	429	410	402	558	550	482	533	629
Transportation	39	26	59	32	27	27	21	25	25	26	29	43	50
Communication & Utilities	52	53	58	48	52	51	56	69	76	80	80	96	107
Wholesale Trade	67	83	81	65	93	141	113	132	69	66	65	106	83
Eating & Drinking Places	117	112	104	116	141	153	124	320	384	481	489	492	469
Other Retail Trade	456	390	435	407	600	619	546	511	663	695	730	766	778
Finance, Insurance, Real Estate	79	69	115	88	106	140	317	174	138	171	182	171	269
Personal Services	67	64	72	72	74	82	53	91	96	89	106	101	90
Business Services	20	22	6	19	20	14	19	19	20	17	21	32	32
Elementary & Secondary Schools	549	572	596	620	670	720	745	748	777	814	821	870	867
Colleges & Universities	332	344	354	388	454	497	568	620	698	801	902	968	1009
Health	12	7	9	6	7	19	19	25	30	32	46	54	110
State & Local Government	93	95	99	102	113	114	115	109	119	122	150	155	157
Federal Government	0	0	0	0	50	70	83	54	1071	1099	1126	1090	1047
Amusements & Lodging	68	101	88	82	88	119	120	139	198	236	237	202	209

Source: Texas Employment Commission, Austin, Texas; Business Manager Southwest Texas State College; the local School Districts; the city of San Marcos; The Census of Agriculture 1959, 1964; Texas Education Foundation, San Marcos, Texas.

With the exception of agriculture, each sector had a larger employment total in 1971 than in 1959. The decline in this sector from 1058 (1959) to 675 (1971) is in line with the national trend. The remaining sectors grew in varying amounts. The greatest growth was in the federal sector; from 0 to 977 (Table I). The smallest growth occurred in transportation, where the increase was only 11 employees. The range for the other sectors was from 12 (business services) to 677 (colleges and universities).

#### THE CONCENTRATION COEFFICIENTS

The concentration coefficients or location quotients were derived using the employment in the given region (San Marcos) and employment in the United States. These coefficients indicate whether sector employment in the area is more or less concentrated than sector employment in the nation. The local area could have a high degree of concentration in a declining sector; e.g., agriculture, and a low degree of concentration in a rapidly expanding sector; e.g., manufacturing, depending on developments within the nation.

Table II presents the concentration coefficients for San Marcos and Hays County for the time series years. This table was computed from Table I and national employment data contained in Appendix B. The general formula for this computation is as follows:

$$\frac{N_{ijSM}}{N_{jSM}} \div \frac{N_{ijUS}}{N_{jUS}} = L \quad (1)$$

TABLE II  
CONCENTRATION COEFFICIENTS  
HAYS COUNTY vs. U. S.

<u>Sector</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>
Agriculture	4.2398	4.4985	4.1152	4.2924	3.8938	3.7869
Construction and Mining	1.6927	1.1827	1.5620	1.1429	1.2692	1.0076
Manufacturing	1.9916	2.0337	3.1389	3.3389	3.0200	2.9706
Transportation	.8880	.6016	1.2061	.6742	.5154	.4961
Communications and Utilities	1.0347	1.0903	1.0833	1.3347	1.4130	1.4229
Wholesale Trade	.4625	.5904	.5216	.4330	.5542	.8039
Eating and Drinking Places	1.4649	1.4518	1.1723	1.3347	1.4130	1.4229
Other Retail	1.5605	1.3808	1.3938	1.3528	1.7595	1.7161
Finance, Real Estate, Insurance	.7958	.7858	.7108	.8333	.8822	1.0714
Personal Services	1.7685	1.7500	1.7870	1.8440	1.6636	1.7232
Business Services	.4524	.4779	.1096	.3419	.2970	.1930
Elementary & Secondary Schools	4.0543	4.0071	3.5874	3.5193	3.1946	7.9054
Colleges & Universities	12.3247	11.0543	8.8785	8.8689	8.1971	7.9054
Health	.5667	.3387	.3750	.2615	.2464	.6081
State & Local Government	.5451	.5553	.5076	.5289	.5000	.4811
Federal Government	-0-	-0-	-0-	-0-	.3397	.4521
Amusement & Lodging	1.8190	2.8208	2.1852	2.1009	1.9818	2.5688

TABLE II Continued

<u>Sector</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Agriculture	3.7037	3.7495	2.8772	2.8038	2.8057	2.7513	2.6964
Construction & Mining	1.7942	1.4226	1.4587	1.3113	1.4787	1.1746	1.4532
Manufacturing	2.6735	2.5504	2.6715	2.5279	2.1188	2.3561	2.7584
Transportation	.3588	.4074	.2993	.2993	.3188	.4638	.5414
Communications & Utilities	.9191	1.1095	.8803	1.0331	.8521	.9662	1.0268
Wholesale Trade	.6067	.6863	.2670	.2401	.2319	.3647	.2780
Eating & Drinking Places	1.0613	2.5978	2.2607	2.6181	2.5068	2.3645	2.1433
Other Retail	1.4111	1.2669	1.2093	1.1863	1.1901	1.2011	1.0803
Finance, Real Estate, Insurance	2.2652	1.2276	.7229	.8401	.8846	.7635	1.1420
Personal Services	1.0439	1.7391	1.2248	1.3365	1.4375	1.4019	1.2900
Business Services	.2402	.2143	.1579	.1233	.1368	.1905	.1870
Elementary & Secondary Schools	2.8399	2.5881	1.9394	1.9001	1.8163	1.8177	1.6788
Colleges & Universities	7.9438	7.6257	6.0209	5.8920	6.4882	6.4089	6.1055
Health	.5443	.6471	.5269	.4854	.6364	.6780	1.2540
State & Local Government	.4525	.4152	.3333	.3199	.3813	.3744	.3566
Federal Government	.5110	.3036	4.3905	4.3817	4.4829	4.4466	3.9811
Amusement & Lodging	2.4679	2.8333	2.9636	3.3333	3.2727	2.6637	2.6549

---

Source: Table I and Appendix B

where

N = employment  
i = ith sector, i = (1. . .17)  
j = jth year, j = (1. . .13)  
SM = San Marcos and Hays County  
US = United States  
L = location quotient (concentration coefficients)

The basic hypothesis of the concentration coefficient is that if they are one, the area is exactly self sufficient in this sector or industry. If they are less than one, the output of this sector or industry is imported into the area, and if they exceed one, then the output in excess of the self sufficient level is exported.

San Marcos and Hays County had concentration coefficients consistently greater than one in ten sectors. The coefficients for the other seven sectors were either less than one or were inconsistent (Table II). The concentration coefficients (predominantly greater than two) were in agriculture, manufacturing, eating and drinking places, elementary and secondary schools, colleges and universities, and amusement and lodging.

The coefficient of federal government sector was less than one for the years 1959-1966, inclusive. In 1966, a federally funded center was opened, which is reflected in the 1967 coefficient. This coefficient was about four in the years 1967-1971, inclusive.

On the basis of these coefficients and judgment, seven export or basic employment sectors were specified: agriculture, manufacturing, construction and mining, elementary and

secondary schools, colleges and universities, federal government, and amusement and lodging. All of the sectors which were classified as basic had concentration coefficients greater than one. Eating and drinking places also had a coefficient exceeding one, but was classified as dependent or non-basic. This type of service is difficult to export and is, in all probability, highly dependent upon both the university sector and amusements and lodging. Growth in the number of students and tourists will surely influence the development of accommodation for them.

Personal services and other retail trade had coefficients greater than one but classified as non-basic for the same reason. The increase in the number of students produced a greater demand for other retail trade and personal services. Since San Marcos is located between two metropolitan centers (Austin and San Antonio), the other retail trade coefficient more nearly reflects the student growth than growth as a retail trade center.

#### THE EXTENT OF EMPLOYMENT AND INCOME EXPORTS WITHIN THE REGION

Given the specified export sectors, the amounts of exports were computed on the basis of average requirements. This concept ties into the concentration coefficient concept. The United States is assumed to be a closed economy, i.e., the elements of international trade are assumed away. Under this assumption, that which is produced in the United States is consumed in the United States.

If production varies from this in a region, it is assumed the deficit of this amount will be imported and the excess production will be exported. Given these somewhat restrictive assumptions, then exported employment may be derived as follows:

$$N_{ijSM} - \frac{N_{ijSM}}{L_{ijSM}} = Ex_{jN} \quad (2)$$

where

N = employment  
i = ith sector, i = (1. . .17)  
j = jth year, j = (1. . .13)  
SM = San Marcos and Hays County  
Ex = exported employment  
L = location quotient

This yields the amount of employment exported in a given year for each export sector, allowing for local consumption of the output of the sector in question.

The amounts of export employment thus derived are presented in Table III. The amount of labor exported increased over the time period. This increase was from 1780 (1959) to 3048 (1971), a total increase of 1268 or about 100 per year. Small declines in the units of labor exported occurred in 1960, 1962, 1966, and 1970. The largest single increase came in 1967 with the inclusion of the employment at a federal job center which was opened in 1966. The declines reflect changing demand for regional products as well as changes in the industrial composition of the area. The increases reflect the same phenomena.

Units of agricultural employment exported declined over the entire time period, which is consistent with the



TABLE III

TOTAL EMPLOYMENT AND EXPORT  
EMPLOYMENT BY EXPORT SECTOR  
HAYS COUNTY, TEXAS, 1959-1971

<u>Year</u>	<u>Total</u>	<u>Employment</u>			
		<u>Total</u>	<u>Export</u>		
			<u>Sectors</u>		
			<u>Agriculture</u>	<u>Construction &amp; Mining</u>	<u>Manufacturing</u>
1959	3500	1780	808	99	123
1960	3383	1764	807	25	125
1961	3725	1917	755	83	287
1962	3587	1884	731	30	302
1963	4041	1914	683	42	286
1964	4248	1931	650	1	285
1965	4469	2065	620	138	257
1966	4543	2013	598	83	244
1967	6069	2890	510	115	349
1968	6382	2961	481	84	332
1969	6591	3020	460	133	255
1970	6715	2984	449	49	307
1971	6972	3043	425	128	401

TABLE III Continued

<u>Year</u>	<u>Elem. &amp; Sec. Schools</u>	<u>Colleges &amp; Universities</u>	<u>Federal Govt.</u>	<u>Amusement &amp; Lodging</u>
1959	414	305	0	31
1960	429	313	0	65
1961	430	314	0	48
1962	444	344	0	43
1963	460	399	0	44
1964	488	434	0	73
1965	483	496	0	71
1966	459	539	0	90
1967	376	582	827	131
1968	386	665	848	165
1969	369	763	875	165
1970	391	817	845	126
1971	351	844	769	130

---

Source: Computed from Table I and Table II

national trend. This does not imply that agricultural production has declined in the region. Increases in agricultural productivity at both the national and regional level have reduced the numbers of workers required to produce the same or a larger product.

The units of labor exported by the construction and mining sector varied somewhat erratically, ranging from a high of 138 (1965) to a low of 1 in the previous year (Table III). Export employment exceeded 100 units in 1965, 1967, and 1969, but was less than this in the balance of the years. This sector reflects changes in both private and public construction in the area. Export employment in this sector may be due to the presence of a growing State University and the concomitant growth of public construction.

The growth in local manufacturing may be noted by the growth in the number of units exported over time. This number increased from 123 (1959) to 401 (1971). There was growth in this sector in most years, but once again the change in national demand and industrial composition may be noted by declines in 1963, 1964, 1965, 1966, and 1969. The largest single growth year was 1967, when the growth was 105 units (Table III).

San Marcos contained a private school and a private academy which provided the rationale for classifying elementary and secondary schools as a basic industry as

well as causing the concentration coefficient to exceed one. Export employment in this sector grew in some years and contracted in others. The overall trend, however, was a decline. The decline over the time period was 63, from 414 (1959) to 351 (1971). The units of employment exported by this sector reached a peak (488) in 1964 and declined over one hundred from that point.

The college and university sector export employment expanded over the entire time. It grew from 305 (1959) to 844 (1971), a total increase of 539 units. The university (Southwest Texas State University) grew rapidly in the same time period. This will be studied in greater detail later in the study. However, it can be noted here that the growth was consistent, i.e., there were no years in which there was no growth in this sector.

The federal government sector had not exported employment prior to 1967. The Job Corps Center opened in 1966, but this does not show as exported labor until the following year. The exported employment grew from its inception until 1969 and declined thereafter. The high number of units exported was 875 (1969) and this had declined to 769 by 1971. Other cuts in this program have occurred since this time but they are outside the scope of this study.

The amusement and lodging sector has also grown due to the exploitation of the spring river and natural cave

located in the area. The units of labor exported increased by about 100 units over the time period. This increase was from about 31 (1959) to 130 (1971) (Table III). This increase was reasonably consistent over the time period.

#### THE EMPLOYMENT MULTIPLIER

Given total employment and what is considered to be basic employment, multipliers of the basic Tiebout type can be computed.<sup>1</sup> These multipliers rely on the basic-non-basic concept and are computed as follows:

$$K = \frac{N}{B} \quad (3)$$

where

N = total employment  
B = export or basic employment  
K = the multiplier

and further, if there is a change in the basic employment, this multiplier will be:

$$\Delta K = \frac{\Delta N}{\Delta B} \quad (4)$$

The change in employment over time that occurred due to a change in the outside demand for the exported product will in turn induce changes in the basic employment and further change the total.

These multipliers were computed and are presented in Table IV. The employment multipliers were generally about

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<sup>1</sup>These multipliers are called Tiebout multipliers after their originator and chief proponent. See Tiebout, Charles M., "The Community Base Study," Supplementary Paper No. 16, Committee for Economic Development. December, 1962.

TABLE IV  
 BASIC, TOTAL EMPLOYMENT,  
 AND EMPLOYMENT MULTIPLIERS (TIEBOUT TYPE)  
 SAN MARCOS AND HAYS COUNTY  
 1959-1971

<u>Year</u>	<u>Employment</u>		
	<u>Basic</u>	<u>Total</u>	<u>Multiplier</u>
1959	1780	3500	1.9663
1960	1764	3383	1.9178
1961	1917	3725	1.9431
1962	1884	3587	1.9039
1963	1914	4041	2.1113
1964	1931	4248	2.1999
1965	2065	4469	2.1642
1966	2013	4543	2.2568
1967	2890	6069	2.1000
1968	2961	6382	2.1554
1969	3020	6591	2.1825
1970	2984	6715	2.2503
1971	3048	6972	2.2874

Source: Computed from Table I and Table III

two, ranging from 1.9039 in 1962 to 2.2874 in 1971. The average multiplier for the time was 2.1107, so there was no large increase or decrease in the yearly or marginal multipliers. The time multiplier, i.e., from 1959 to 1971, was about 2.7382 or somewhat larger than the marginal. However, the marginal was rising, thereby causing the average to be larger.

This implies that for every increase of one unit of employment in the basic sectors, there will be one other job created in the non-basic sector, making a total of two. The increase in these multipliers implies a type of import substitution. That is, there has been an increase in local development of industries to accommodate the growth that has occurred.

#### INCOME

Income was treated in the same manner as employment. Total income was divided into its basic and non-basic components and income multipliers derived. Income for the area was obtained from the office of Business Economics through the Bureau of Business Research at the University of Texas at Austin. Total income and income for selected sectors are presented in Table V.

Total income increased over the time period. The increase was from about \$23 million to about \$85 million, an increase of about \$62 million. This reflected the increased economic activity in the region as well as general

TABLE V

TOTAL PERSONAL INCOME AND SELECTED SECTOR INCOME  
HAYS COUNTY, TEXAS, 1959-1971, THOUSANDS OF DOLLARS

Income, Type, Sector	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Total Personal Income	23388	27716	28178	27993	27734	31482	36166	39927	60550	65950	71199	80150	85305
Total Wage and Salary	12618	14950	15509	15406	15265	17913	20580	22885	33865	36939	39706	44242	47618
Manufacturing	1065	1352	1706	1747	1731	1739	1662	1871	2776	2949	2697	3073	3154
Agriculture	2726	2674	2571	2314	223k	229k	2203	2944	2348	2921	4318	5525	5655
Retail Trade	2733	1975	3148	2976	3522	3726	3767	4077	4904	5540	6004	6174	10682
Eating and Drinking	368	403	436	488	559	596	542	1238	1440	1565	1554	2105	1968
Other Retail	2365	1572	2712	2488	2963	3130	3225	2839	3464	3975	4450	4069	8714
Education	2726	3000	3209	3522	3949	4461	5112	6049	6677	8919	10109	11072	12664
University	1410	1544	1621	1885	2163	2525	2933	3607	3899	5728	6638	7103	8020
Elementary & Secondary Schools	1316	1456	1588	1637	1786	1936	2179	2442	2778	3191	3471	3969	4644
Public	1141	1273	1405	1443	1575	1707	1938	2162	2498	2811	3039	3533	4149
Private	175	183	183	194	211	229	241	280	280	380	432	436	495
Texas Education Foundation	0	0	0	0	0	0	0	0	8024	8270	8487	8734	8204
Amusements and Lodging Services	1244	1004	1668	1610	819	3698	2850	2795	3372	6023	5017	5065	4703
Amusements	1207	967	1631	1534	724	3389	2483	2474	2451	3292	3282	3811	3539
Lodging	37	37	37	76	95	309	367	321	921	2731	1735	1254	1164
Transfer Payments	1287	1392	1505	1628	1758	1826	2040	2174	2417	2705	2918	3652	4221

Source: Office of Business Economics U. S. Department of Commerce, through the Bureau of Business Research, The University of Texas at Austin, Texas; Texas Employment Commission, Texas State Welfare Department, and Social Security Administration, Austin, Texas; Business Manager, Southwest Texas State University and Texas Education Foundation, San Marcos, Texas.



inflation and population growth. There was some increase in the income level in each year. The largest increase occurred in 1967 when the federally funded Texas Education Foundation came into operation.

Total wage and salary income increased in the same time period. This increase was from about \$13 million (1959) to about \$48 million (1971) (Table V). The income from each represented sector increased in the time period. There were no declines.

#### EXPORTED INCOME

Using Table V as the basis, the total income and other sector income were broken down to the seventeen sectors. From this, the income for each of the export sectors was derived. The income export sectors were those designated in the preceding sectors, and exported income was arrived at in a similar manner. Total income was divided by the concentration coefficient and the average requirement for the area subtracted from the total. The results of this computation are presented in Table VI.

Exported income grew from approximately \$6 million in 1959 to approximately \$25 million in 1971, but the growth was not consistent. There were export income declines in the years 1962 and 1963. All other years had basic income increases.

Agricultural income did not indicate the same consistent decline as did agricultural employment. The decline in

TABLE VI  
INCOME DERIVED FROM EXPORTED GOODS AND SERVICES  
HAYS COUNTY, TEXAS, 1959-1971  
(Thousands of Dollars)

<u>Year</u>	<u>Total</u>	<u>Income</u>			
		<u>Export</u>			
		<u>Sectors</u>			
		<u>Total</u>	<u>Agriculture</u>	<u>Construction &amp; Mining</u>	<u>Manufacturing</u>
1959	23,388	5,974	2,083	514	530
1960	27,716	6,113	2,080	205	687
1961	28,178	7,125	1,946	529	1,162
1962	27,993	6,862	1,775	175	1,224
1963	27,734	6,675	1,658	327	1,158
1964	31,482	8,628	1,686	13	1,154
1965	36,166	9,127	1,608	808	1,040
1966	39,927	11,494	2,159	593	1,137
1967	60,550	18,240	1,532	786	1,737
1968	65,950	22,418	1,879	589	1,782
1969	71,199	23,555	2,779	955	1,283
1970	80,150	24,670	3,517	384	1,769
1971	85,305	25,453	3,558	830	2,011

TABLE VI Continued

<u>Year</u>	<u>Elem. &amp; Sec. Schools</u>	<u>Colleges &amp; Universities</u>	<u>Federal Govt.</u>	<u>Amusement &amp; Lodging</u>
1959	991	1,296	0	560
1960	1,093	1,404	0	644
1961	1,145	1,438	0	905
1962	1,172	1,672	0	844
1963	1,227	1,899	0	406
1964	1,311	2,206	0	2,258
1965	1,412	2,564	0	1,695
1966	2,663	3,134	0	1,808
1967	1,346	3,251	7,354	2,234
1968	1,512	4,740	7,700	4,216
1969	1,560	5,615	7,879	3,484
1970	1,785	5,995	8,056	3,164
1971	1,878	6,706	7,538	2,932

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Source: Computed from Table V

employment occurred in response to improved technology. The income variations occurred due to the vagaries of the markets and the weather. Agricultural export income increased in 5 years and decreased in 8 years. The overall result was an increase, about \$1.5 million, from 1959 to 1971 (Table VI). The low export income year for agricultural produce was 1967, when about \$1.5 million in agricultural produce was exported. The high export income was in 1971, when about \$3.6 million in agricultural produce was exported.

The amount of export or basic income received from construction and mining also varied over the time period. The high export year was 1969, as it was with employment, and the low was likewise in 1964. The range of these exports was from about \$13 thousand to about \$955 thousand in those years (Table VI). The trend, however, would seem to be for an increase in income from this source.

The export income from manufacturing also grew consistently over the time period with a total increase of about \$1.5 million. This occurred due to an increase in manufacturing activity. This income declined in only one year, 1969.

Income derived from the exported elementary and secondary school sector increased in some years and declined in others. There were increases in eleven years and a decline in one year. This type of export income, however, peaked in 1966, declined sharply in 1967, and did not ever fully recover to its peak year. The range of export income from

this source was from about \$1 million in 1959 to about \$2.5 million in 1966 (Table VI).

Export income from the college and university sector reflects the increase in the size of Southwest Texas State University as well as the increase in salaries. This increase was consistent over the time period, ranging from about \$1.3 million in 1959 to about \$6.7 million in 1971 (Table VI). The larger increases in this sector were in four years: 1966, 1968, 1969, and 1971.

The federal government sector had no export income until 1967, which occurred with the opening of the Job Corps Center. Export income increased from 1967 (about \$7.4 million) to 1970 (about \$8.1 million) and declined in 1971 (about \$7.5 million).

The amusement and lodging sector also had an increase in exported income, from about \$ .6 million (1959) to about \$2.9 million (1971). The range of export income from this source was from about \$ .4 million (1963) to about \$4 million (1968). The general trend, however, was to an increase.

#### THE INCOME MULTIPLIERS

The income multiplier was calculated in the same manner as the employment multiplier. The relationship between the basic and non-basic income was computed for the time series years. This relationship yielded two multipliers which are presented as Table VII.

TABLE VII  
BASIC INCOME, TOTAL INCOME,  
AND INCOME MULTIPLIERS (TIEBOUT TYPE)  
SAN MARCOS AND HAYS COUNTY  
(1959-1971)

<u>Year</u>	<u>Income</u>		<u>Multiplier</u>
	<u>Basic</u>	<u>Total</u>	
1959	5,974	23,388	3.9150
1960	6,113	27,716	4.5339
1961	7,154	28,178	3.9388
1962	6,862	27,993	4.0794
1963	6,675	27,734	4.1549
1964	8,628	31,482	3.6488
1965	9,127	36,166	3.9625
1966	11,494	39,927	3.4737
1967	18,238	60,550	3.3200
1968	22,418	65,950	2.9418
1969	23,552	71,199	3.0231
1970	24,760	80,150	3.2371
1971	25,451	85,305	3.3517

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Source: Computed from Table VI

The income multiplier ranged from 4.5339 (1960) to 2.9418 (1968), with an average multiplier of 3.6601 (Table VII). The general trend for the time period was a decline. This decline was about .6 for the time period and was consistent from 1963 (Table VII).

The multiplier over time was 3.1790, which was smaller than the average by about .5. The marginal (yearly) multiplier was declining and thereby the time multiplier should be smaller. This indicates that less of the increases in basic income were being spent in the area over time.

The income multipliers were larger than the employment multipliers on all bases. The yearly multipliers were greater as were the average and the time multipliers. This was expected. The employment multipliers indicate the number of new employees which would be needed given a change in basic employment. The income multipliers indicate the new income which would be generated. A part of this income goes to proprietors. A change in income would accrue to new employees and/or old and new proprietors. The decline in the income multiplier and the increase in the employment multiplier further indicates that the new induced employment was lower pay.

#### OTHER MULTIPLIERS

One of the primary weaknesses of the Tiebout type multipliers is their inability to distinguish the values of each basic sector. That is, they do not assign a value

to each sector, but rather make the implicit assumption that they are homogenous as to the secondary and tertiary effects. This is a somewhat unrealistic assumption.

There have been alternate approaches suggested. One of these is the method suggested by Brascher and Weiss and Gooding.<sup>2</sup> This method involves the specification of a regression equation for the area in which the sector coefficients yield the multipliers. This method was applied to this area. Unfortunately, multicollinearity was present in the model and the results were unrealistic. This method was then abandoned.

Another alternate method to arrive at separate multipliers is the basic Leontief input-output model. This model, however, requires a detailed knowledge of the area which can only be obtained through a survey of the industries within the area. Such a survey was beyond the budget of this study. However, an input-output model had been developed for Texas and nine regions in Texas. The region containing San Marcos (Region 6) had further been refined to the San Antonio Standard Metropolitan Area.<sup>3</sup> The multi-

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<sup>2</sup>Brascher, Curtis, "A Comparison of Least Squares Estimates of Regional Employment Multipliers With Other Methods," Journal of Regional Science, 12(1972) 457-468; Weiss, Steven J., and Gooding, Edwin C., "Estimation of Differential Employment Multipliers in a Small Regional Economy," Land Economics, 44(1968) 235-244.

<sup>3</sup>For a full explanation of the model and multipliers derived for the San Antonio Standard Metropolitan Area, see Chapters 3 and 4 of V. Howard Savage's The Implications of National Defense Demand Shifts to a Small Area, The San Antonio (Texas) Case, unpublished dissertation.



pliers from this model were modified to fit the region under consideration and applied to the local data.

The results will give a somewhat realistic, if overstated, view of the local economy. San Antonio is located close enough to the study area to rule out differences in the production functions. The overstatement will result from the difference in size of the San Marcos and Hays County area and the San Antonio area. A larger area will have a larger multiplier due to secondary development. The use of the Texas or Region Six model would tend to magnify this problem.

#### THE MULTIPLIERS

The San Antonio multipliers were combined into seventeen sectors to conform to the local sectors. They were calculated for the local region on the basis of a weighted average. If the San Antonio sectors were not present locally, they were omitted. Table VIII presents these multipliers.

The range of size for these multipliers was from 3.0923 for amusement and lodging to 1.3600 for the governmental sectors. The average for the group was 2.1556 (Table VIII), less than the basic Tiebout multipliers presented above. The modified San Antonio multipliers should tend to overstate the San Marcos multipliers due to San Antonio's larger size; however, this was not the case. The Tiebout multipliers were computed on the basis of seven

TABLE VIII  
WEIGHTED SAN ANTONIO INCOME MULTIPLIERS  
BY HAYS COUNTY SECTOR

<u>Sector</u>	<u>K</u>
Agriculture	3.02414
Construction and Mining	2.37595
Manufacturing	1.92004
Transportation	2.0841
Communications and Utilities	1.66118
Wholesale Trade	2.13000
Eating and Drinking Places	2.16411
Other Retail Trade	1.99220
Finance, Insurance, and Real Estate	1.74690
Personal Services	2.82775
Business Services	2.06260
Elementary and Secondary Schools	1.65125
Colleges and Universities	1.89669
Health, Physicians, Dentists, Etc.	1.70461
State and Local Government	1.36000
Federal Government	1.36000
Amusement and Lodging	3.09230
Texas Education Foundation	1.36000

AVERAGE . . . . . 2.155588

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Source: Computed for Table 4-3, The Implications of National Defense Demand Shifts to a Small Area: The San Antonio (Texas) Case, unpublished dissertation, V. Howard Savage, and unpublished OBE regional economic data.

export sectors which could account for the difference. The average San Antonio multiplier, computed for these sectors, was 2.1886 which is not significantly larger. An alternate explanation for this discrepancy is that the Tiebout multiplier was magnified by other economic developments in the region. The student body growth had not been considered, neither had the increase in transfer payments to local residents. The student population in San Antonio was too small to be significant in relationship to the greater area. This is far from the case in San Marcos. Students consume and this consumption has a multiplier. The growth in student numbers should add considerably to the size of the Tiebout multiplier.

In an attempt to rectify this discrepancy, two additional sectors were added to what will be called the final demand sector. They are state government and students.

The modified San Antonio multipliers include the direct, indirect, and induced income changes. They allow not only for direct and indirect changes, but also for changes which are induced through consumption. These modified multipliers were applied to the changes in export income, and the results are presented as Table IX.

The most important contributor to the increase in regional income was the college and university sector (about \$10.3 million). However, it exceeded the contribution of the federal government sector by a very slight

TABLE IX

DIRECT, INDIRECT, AND INDUCED  
INCOME CHANGE BY FINAL DEMAND SECTOR  
HAYS COUNTY, TEXAS 1959-1971

	<u>Manuf.</u>	<u>Agric.</u>	<u>Tour.</u>	<u>Fed.</u>	<u>State</u>	<u>Transfer</u>	<u>Tx. Ed.</u>	<u>Ag.</u>	<u>Educ.</u>	<u>Students</u>	<u>Total</u>	<u>Residual</u>
1959-1960	551	- 157	- 339	NA	223	52			254	216	4,328	- 3,528
1960-1961	680	- 311	1,339	NA	656	56			146	265	462	2,369
1961-1962	79	- 777	- 282	NA	- 339	60			501	409	- 185	- 164
1962-1963	- 31	- 251	-2,086	669	987	64			527	697	- 259	835
1963-1964	15	181	5,193	-46	413	34			687	176	3,748	2,905
1964-1965	- 148	- 266	-1,413	-48	- 836	105			774	856	4,684	- 5,660
1965-1966	401	2,241	239	80	113	65			1,278	919	3,761	1,575
1966-1967	1,738	-1,802	- 330	84	1,420	120	10,913		554	870	12,599	968
1967-1968	332	1,733	1,860	69	-1,216	142	335		3,469	922	5,154	2,492
1968-1969	- 484	4,225	27	7	- 593	106	295		1,726	813	5,032	1,090
1969-1970	722	3,650	781	3	593	361	336		882	655	8,704	- 721
1970-1971	156	393	- 594	3	1,174	281	- 721		1,739	1,094	5,685	- 2,160
TOTAL	4,009	8,859	4,395	821	2,595	1,446	11,158		12,537	7,893	53,713	000

Source: Computed from Table 4-3, The Implications of National Defense Demand Shifts to a Small Area: The San Antonio (Texas) Case, unpublished dissertation, V. Howard Savage, and unpublished OBE regional economic data.

margin. On this basis alone, they were of approximately the same value to the region, each contributing about 19 percent to regional income growth.

The college and university sector, however, should be considered in connection with the growth in student population. The regional income contribution of this group was approximately \$6.7 million, or about 12 percent (Table IX). When this sector is combined with the college and university sector, the combined contribution of these sectors was about \$17 million. This is approximately 32 percent of regional income growth for the time period. The federal sector accounts for another 19 percent with the balance attributable to the other sectors.

Of the remaining sectors, the most important contributor to the growth of the regional income was the amusement and lodging sector. This contributed about \$7.3 million to regional income growth over the time period (Table IX), approximately 14 percent of total growth.

The next contributing sector in order of importance was the elementary and secondary school sector. This sector contributed about \$5.8 million to the regional income growth (Table IX), about 11 percent of the regional income growth.

Agriculture was the next sector in order of regional income growth, contributing about 8 percent to the total. This sector contributed about \$4.5 million in direct,

indirect, and induced income growth over the span of years. The greater portion of this growth occurred in the years from 1967 to 1971. This reflected better prices for agricultural products as well as favorable weather conditions.

Manufacturing was next to the last in the size of contribution made to increasing regional income with a total contribution of about \$3.1 million (Table IX). This was approximately 6 percent of the total income growth over time.

The smallest contribution was made by construction and mining, about \$ .8 million, or approximately one percent (Table IX). This is only that portion of this industrial sector income which is considered basic. Most construction activity is generally of a non-basic nature depending upon economic activity.

#### THE ROLE OF THE UNIVERSITY

The combined college and university and student sectors are examined at greater length because these sectors contributed most to the increase in regional income and economic well being. The University grew rapidly over the 1959-1971 time period, reflecting the growth of institutions of higher learning and the growth of population in adjacent areas. While the students at Southwest Texas State University are from various sections of the state and even out-of-state, the greater number of them

live within a convenient distance of the institution. The rapid growth of the student population is presented in Table X which shows weighted enrollment figures, the change in enrollment, and the percentage change.

The weighting process was considered necessary to yield a yearly equivalent. These figures are weighted to take into account the spring semester and summer schools students as well as those who enroll for the fall semester.

The sixties generally were times of high percentage and absolute growth rates in student enrollment at Southwest Texas State University (Table X). Weighted enrollment grew from 2026 in 1959 to 8812 in 1971, an increase of some 6786 students. The largest change occurred in 1971 when the absolute number of students increased by 941, 11.9 percent (Table X). The largest percentage change, however, was in 1963 (21.4 percent) with the second largest in 1965 (20.7 percent).

The rapid increase in student enrollment caused a rapid increase in faculty and other service personnel. This development usually lags the increase in student enrollment due to the recognition and reaction times necessary to the phenomena as well as the niggardly nature of Texas Legislatures. However, employment did grow at Southwest Texas State University during this time period. Table XI presents employment by type at this institution for the specified time period.

TABLE X  
TOTAL WEIGHTED AVERAGE STUDENT ENROLLMENT,  
ENROLLMENT GROWTH, AND PERCENT CHANGE  
SOUTHWEST TEXAS STATE UNIVERSITY  
SAN MARCOS, TEXAS 1959-1971

<u>Year</u>	<u>Enrollment</u>	<u>Change in Enrollment</u>	<u>Percent Change</u>
1959	2026		
1960	2212	186	9.18
1961	2440	228	10.31
1962	2792	352	14.43
1963	3391	559	21.41
1964	3542	151	4.45
1965	4278	736	20.78
1966	5068	790	18.47
1967	5816	748	12.85
1968	6609	793	13.63
1969	7308	699	10.58
1970	7871	563	7.70
1971	<u>8812</u>	<u>941</u>	<u>11.96</u>
TOTAL		6786	168.73

Source computed from data furnished by The Office of the Registrar, Southwest Texas State University, San Marcos, Texas.



TABLE XI  
NUMBER OF EMPLOYEES AT  
SOUTHWEST TEXAS STATE UNIVERSITY  
SAN MARCOS, TEXAS  
BY TYPE & TOTALS: YEARS 1959-1971

<u>Year</u>	<u>Number Employed</u>			<u>Total</u>
	<u>Faculty</u>	<u>Professional Librarian</u>	<u>Other</u>	
1971	386	13	610	1009
1970	358	14	596	968
1969	334	14	554	902
1968	299	12	490	801
1967	244	10	444	698
1966	218	8	394	620
1965	187	7	374	568
1964	166	8	323	497
1963	141	8	305	454
1962	129	7	252	388
1961	121	7	226	354
1960	117	7	220	344
1959	112	8	212	332

Source: Business Manager, Southwest Texas State University,  
San Marcos, Texas

Note: Data compiled from Financial Reports and Requests for  
Legislative Appropriations

Total employment increased from 332 (1959) to 1009 (1971), 204 percent. The 1971 employment was about 304 percent of 1959 employment. The 1971 student population was 435 percent of the 1959 student enrollment (Table X). So the lag is noticeable. The employee-student ratio declined in the interim, from one employee to about six students in 1959 to one employee to about nine students in 1971. Even so, there was a sizable increase in total employment at this institution.

On a category basis, the number of faculty members increased from 112 (1959) to 386 (1971). The 1971 faculty employment was 345 percent of 1959 faculty employment. The faculty-student ratio was about 1:18 in 1959 and about 1:23 in 1971. This discrepancy is not as great as between students and total employees, but it still indicates the sizable lag between student enrollment increases and faculty increases.

The number of professional librarians increased by 5 persons, from 8 (1959) to 13 (1971). This ratio changed somewhat radically. Perhaps the number of librarians is dependent upon some other factor, i.e., volumes of books rather than upon the increase in student enrollment.

The other employment category also increased in the interim. This increase was from 212 (1959) to 610 (1971). The 1971 employment was about 288 percent of the 1959 employment. This changed the ratio of other employees to students from 1:10 in 1959 to 1:14 in 1971. It is

possible that this sector enjoys economies of scale, however, it is more probable that the time lag is even more pronounced in this area.

Along with the growth in employment, there has been a concomitant increase in salaries and wages. The salary scale has risen to some extent for this category of workers in our society. So in addition to the natural increase in their numbers, there has been a general increase in the salary rate. Table XII presents the increase in this category of income for the regional area. This table is divided in the same manner as is Table XI and presents income for these categories.

Total income paid to this category of regional income receivers increased from about \$1.4 million to \$8.1 million during this time period, an increase of some 486 percent. The 1971 income was 586 percent of the 1959 income (Table XII). The student population increased by about 335 percent. The income to institutional employees increased by 100 percentage points more than the student population, indicating an increasing wage and salary cost per student. Wage and salary cost per student was \$910 in 1971 and about \$696 in 1959, an increase of about 31 percentage points. These numbers tend to be misleading since this increase in cost did not keep up with the increases in the general price level for the same period. Prices generally increased by 39 percentage points in the same time period.

TABLE XII  
SALARIES AND WAGES OF EMPLOYEES  
AT SOUTHWEST TEXAS STATE UNIVERSITY  
BY EMPLOYMENT CATEGORY & TOTALS: YEARS 1959-1971

Year	Salaries			Total
	Faculty	Professional Librarian	Other	
1971	\$5,216,334	\$134,744	\$2,668,494	\$8,019,572
1970	4,357,718	132,861	2,611,983	7,102,562
1969	3,801,831	124,707	2,711,129	6,637,667
1968	3,254,165	91,483	2,382,685	5,728,333
1967	2,372,708	74,800	1,451,442	3,898,950
1966	2,136,101	66,980	1,403,598	3,606,679
1965	1,676,037	49,949	1,206,625	2,932,611
1964	1,477,381	48,156	999,755	2,525,292
1963	1,195,294	46,358	921,201	2,162,853
1962	1,053,623	44,694	786,981	1,885,298
1961	910,990	39,075	671,032	1,621,097
1960	874,873	37,575	631,719	1,544,167
1959	782,171	36,105	591,234	1,409,510

Source: Business Manager, Southwest Texas State University,  
San Marcos, Texas

Faculty salaries also increased, from about \$.8 million in 1959 to about \$5.2 million in 1971. The increase was about 567 percent. On a per student basis, this cost increased from \$386 (1959) to \$592 (1971), an increase 53 percent, greater than the increases in the general price level.

The other category increased from about \$ .6 million (1959) to approximately \$2.7 million (1971), an increase of 531 percent. The cost per student for other employment declined.

Using the preceding tables which show increases in student enrollment, increases in income and the multipliers, it is possible to compute the monetary value of a student at Southwest Texas State University. This was done by taking the increase in student enrollment and dividing it into the income (direct, indirect, and induced) generated by the college and university and student sectors of the economy. On this basis, the student has a monetary value to this region of \$2,499. Of this amount, the student spends approximately \$726 on the average, which generates about \$987 in income to the area. The balance of the \$2,499, \$1512, goes to pay income to the faculty and staff at the University.

The other sectors were not considered in the same detail due to a dearth of data. The numbers are simply not available.

## PART II

The societal structure of an area depends upon the economic base of the area. The locational decisions of persons and secondary industries largely depend upon the demand for labor and goods and services. This demand in turn depends upon the basic industry present in an area. The area under consideration is heavily dependent upon the college and university sector. This sector accounted for about one-third of all growth which occurred in the area in the time period. The federal government sector also made a significant contribution. These basic areas of growth contributed to the economic and general structure of areal society.

### POPULATION AGE DISTRIBUTION

One of the characteristics expected on an a priori basis was a large percentage of the population in the college age group. This could in turn induce the settlement of other age groups and give the area its unique age distribution. Table XIII presents the population distribution of San Marcos and Hays County, as well as the state of Texas, for the years 1950, 1960, and 1970.

TABLE XIII

PERCENT POPULATION DISTRIBUTION BY AGE  
GROUP IN HAYS COUNTY AND THE STATE  
1950, 1960, 1970

<u>Age Group</u>	<u>1950</u>		<u>1960</u>		<u>1970</u>	
	<u>Hays</u>	<u>State</u>	<u>Hays</u>	<u>State</u>	<u>Hays</u>	<u>State</u>
0- 4	11.42	11.69	11.10	12.13	7.66	8.92
5- 9	9.62	9.52	10.12	11.22	7.94	10.29
10-14	8.42	7.93	9.60	9.77	8.41	10.58
15-19	11.41	7180	11.20	7.79	17.62	9.83
20-24	9.69	8.21	9.73	7.53	18.49	8.42
25-34	12.55	15.81	10.92	13.32	9.67	12.53
35-44	11.54	14.25	9.88	12.76	8.06	11.40
45-54	9.52	10.78	10.14	10.85	7.27	10.52
55-64	7.80	7.35	7.86	7.85	6.99	8.61
65 and over	<u>8.03</u>	<u>6.66</u>	<u>9.45</u>	<u>7.78</u>	<u>7.89</u>	<u>8.87</u>
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Source: U. S. Bureau of the Census. U. S. Census of Population: 1960. General Population Characteristics, Texas Final Report PC(1)-45B. U. S. Government Printing Office, Washington, D. C., 1961.  
 U. S. Bureau of the Census. U. S. Census of Population: 1970. General Social and Economic Characteristics, Texas. Final Report PC(1)-C45. U. S. Government Printing Office, Washington, D. C., 1972.

As expected, in 1950 a larger percentage of Hays County population was of college age; about 21 percent compared to about 16 percent for the state. This percentage remained approximately constant for 1950-1960, but it increased to about 36 percent in Hays County compared to 18 percent statewide in 1970 (Table XIII). The percentage of persons in the state this age increased by 2 points while the percentage in the study area increased by 15 points. A more detailed examination of these age groups (15-19, 20-24) indicates that either the student body at the university aged or student body growth has induced an increase in the 20-24 age group. The 15-19 age group increased from 1950-1970 by about 6 percentage points, with the entire increase occurring between 1960-1970. The 20-24 age group increased about 9 percentage points in the same time period. If the increase is strictly accounted for by students, the student population aged. Otherwise, in-migration of the 20-24 age group occurred.

The percentage points in excess of the state percentages in the college age groups are compensated for by smaller percentages in other age groups. This was fairly uniform for the other specified age groups in 1970. The Hays County age groups were from about one percentage point less (0-4, 65+ age group) to about three points less (35-44, 45-54). The balance of the groups were about 2 percentage points less (Table XIII).



There was some structural change, primarily from 1960 to 1970. Hays County, compared to the state, had relatively fewer persons in the 5-9, 10-14, 45-54, 55-64, and 65 and over age group. The others were either approximately constant or had increased (Table XIII).

#### RACIAL AND ETHNIC GROUP DISTRIBUTION

Another social manifestation of development is the migration of racial and ethnic groups into an area. Certain racial and ethnic groups within society are and have traditionally been less well trained or otherwise precluded from the better pay occupations. Development of certain industries and occupations within the system could bias the number of racial and ethnic minorities in an area.

Such has not been the case in San Marcos and Hays County. There has been very little change in the ethnic and racial composition of the population of San Marcos and Hays County over time. Table XIV presents the racial and ethnic distribution for San Marcos and Hays County as well as for the state for the years 1950, 1960, and 1970. Over the past 20 years the group with Spanish surnames increased about 3 percentage points at the expense of both the negro sector, about 2 percentage points, and the anglo sector, about 1 percentage point.

The change in the racial and ethnic composition of the area differed from the state with respect to only one

TABLE XIV

PERCENT RACE AND ETHNIC POPULATION DISTRIBUTION  
IN HAYS COUNTY AND THE STATE 1950, 1960, 1970

	1950		1960		1970	
	<u>Hays</u>	<u>State</u>	<u>Hays</u>	<u>State</u>	<u>Hays</u>	<u>State</u>
Anglo	59.22	73.82	58.16	72.62	58.09	69.13
Negro	6.42	12.77	5.68	12.58	4.33	12.47
Spanish Surname	<u>34.36</u>	<u>13.41</u>	<u>36.16</u>	<u>14.80</u>	<u>37.58</u>	<u>18.40</u>
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Sources: U. S. Bureau of the Census. U. S. Census of Population: 1950. Vol. IV, Special Reports, Part 3, Chapter C, Persons of Spanish Surname. U. S. Government Printing Office, Washington, D. C., 1953; U. S. Bureau of the Census. U. S. Census of Population: 1960. General Population Characteristics, Texas. Final Report PC(1)-45B, U. S. Government Printing Office, Washington, D. C., 1961 and U. S. Census of Population: 1960. Subject Reports. Persons of Spanish Surname. Final Report, PC(2)-1B. U. S. Government Printing Office, Washington, D. C., 1963; and U. S. Bureau of the Census. Census of Population: 1970. General Social and Economic Characteristics. Final Report, PC(1)-C45 Texas, U. S. Government Printing Office, Washington, D. C., 1972.

ethnic group, negroes. In 1970, relatively fewer negroes lived in San Marcos than in 1950. The state negro percentage was about constant.

#### EMPLOYMENT AND OCCUPATION

Another manifestation of the economic base and its growth in an area is the method used by area residents to earn income. The industry which is present and that industry which has expanded in the area have production functions which dictate not only certain capital-labor requirements, but also certain different types of labor ratios, i.e., certain ratios of white collar, blue collar, etc. As the industrial structure changes over time, these ratios change. Some changes occur due to the substitution effect, i. e., substituting relatively cheaper capital or other type of labor for higher priced labor. It is more probable, however, that changes occur because of the expansion or contraction of certain fields of economic endeavor in the economy. A comparison of occupational growth in the area and some larger area, e. g. the state, notes the difference, if any, in basic and secondary development. Table XV presents the percent distribution of employment in Hays County by occupation for the census years 1950, 1960, and 1970. Table XVI presents a comparison of the distribution of employment by occupation in Hays County to the state of Texas for the same years. The first table presents the change in occupa-

TABLE XV  
PERCENT DISTRIBUTION EMPLOYMENT  
BY OCCUPATION: 1950, 1960, 1970  
HAYS COUNTY, TEXAS

<u>OCCUPATION</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>
White Collar			
Professional, technical, and kindred workers	3	13	17
Managers and administrators, except farm	4	9	11
Sales Workers	2	6	4
Clerical and Kindred workers	3	12	17
Blue Collar			
Craftsmen, foremen, and kindred workers	5	10	10
Operatives	4	12	13
Laborers, except farm	2	7	4
Service			
Service workers, except private household	2	12	16
Private household workers	2	4	2
Farm			
Farmers and farm managers	45	6	3
Farm laborers	28	9	3

Source: Computed from U. S. Bureau of the Census. U. S. Census of Population: 1970 General Social and Economic Characteristics. Final Report PC(1)-C45 Texas. U. S. Government Printing Office, Washington, D. C., 1972; U. S. Census of Population. Part 45, Texas. U. S. Government Printing Office, Washington, D. C., 1963. U. S. Census of Population: 1950. V. II, Characteristics of the Population, Part 43, Texas. U.S. Government Printing Office, Washington, D. C., 1952.

tional groups over time, and the second presents the difference in labor requirements between Hays County and the state.

Hays County became an urban as opposed to rural county over the past twenty years. This is shown by the marked decline in the percentage of workers and managers in the agricultural sector, from about 73 percent (1950) to 6 percent (1970). There was an absolute decline in these numbers (Table I), but the relative decline was greater.

The percentage decline of the agricultural sector was accompanied by percentage increases in all other occupational categories except the private household category which remained constant at 2 percent (Table XV). The largest gains occurred in white collar occupations. Sales workers exhibited the lowest gain as well as some variation. They increased from 2 percent (1950) to 6 percent (1960), but declined to 4 percent (1970). The 1970 percentage was double the 1950 percentage but represents only a 2 percentage point increase. The other increases were 14 percentage points (clerical and professional) and 7 percentage points (non-farm managers).

Workers in blue collar occupations also increased relatively over the time period, but not to the same extent as the white collar workers. Of the blue collar occupations, operatives had the largest relative gain, 9 percentage points. Other increases occurred for craftsmen (5 percentage

points) and laborers (2 percentage points). The small relative increase in laborers probably reflects changing economic structure and changing technology in existing industry.

The increase in the service worker sector over the time span could reflect a national trend. The service sector has enjoyed a relative increase nationally. The U. S. economic society has become less production oriented and more service oriented over time. So has the Hays County economy. Employment in service occupations increased from about 4 percent to about 18 percent (Table XV). As noted above the increase was in the employment of the non-household workers.

Economic development changed Hays County from a predominantly rural to an urban county. The occupational distribution changed from predominantly farm employment to white collar and service sector employment. The evidence as to whether this phenomena is the same as the state generally is contained in Table XVI.

The shift from agricultural employment was more pronounced in Hays County than in the state generally. The ratio of the distribution of farm workers declined from about 5 to about 1.5.

The area distribution increased relative to the state in the other categories. The primary shift, however, occurred between 1950 and 1960, with only minor changes over the

TABLE XVI

COMPARISON OF DISTRIBUTION  
OF TOTAL EMPLOYMENT BY MAJOR  
OCCUPATIONAL GROUP IN HAYS COUNTY  
TO STATE OF TEXAS DISTRIBUTION, 1950-1970

<u>Occupational Group</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>
White Collar			
Professionals	0.35	1.29	1.17
Managers	0.39	0.94	1.21
Sales	0.26	0.86	0.51
Clerical	0.27	0.56	0.97
Blue Collar			
Craftsmen	0.36	0.78	0.70
Operatives	0.26	0.87	0.87
Laborers, except farm	0.29	1.27	0.83
Service			
Service workers, except private household	0.25	1.38	1.46
Private household workers	0.54	1.11	0.95
Farm			
Farmers & farm managers	4.79	1.43	1.50
Farm Laborers	5.49	2.65	1.50

Source: Computed for U. S. Bureau of the Census. U. S. Census of Population: 1970 General Social and Economic Characteristics. Final Report PC(1)-C45 Texas. U. S. Government Printing Office, Washington, D. C., 1972; U. S. Census of Population: 1960, Vol. 1, Characteristics of the Population, Part 45, Texas. U. S. Government Printing Office, Washington, D. C., 1963; U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part 43, Texas. U. S. Government Printing Office, Washington, D. C., 1952.

1960-1970 time period. The changes, therefore, seem to be more a phenomenon of the shifting nature of the area in relationship to some occurrence prior to the economic base years specified in this study.

The increase which might be attributable to the growth in the study period occurred in managers, clerical, and non-household service workers. There were either declines or no substantial change in other categories.

#### INDUSTRIAL GROUPS

Another approach to the changing nature of the local economy is to look not at changes in employment by occupation but at changes in employment by industry. Table XVII presents the percent distribution of employment in the area by broad industrial sector. This table also presents the concentration ratios (county to state percentages) for this area in relation to the state.

The decline in agricultural employment in the area as well as the state may be noted from this table. Agricultural employment in Hays County declined from 16.4 percent to 4.7 percent (1950-1970). The concentration ratio, however, declined very little. This decline was only from about 1.78 to 1.51 (Table XVII). This indicated that the percentage farm employment (managers, workers, and farmers) decline in Hays County was not significantly larger than in the state generally.



TABLE XVII

PERCENT DISTRIBUTION OF EMPLOYMENT  
BY MAJOR INDUSTRY GROUP IN HAYS COUNTY  
AND COMPARISON TO STATE OF TEXAS, 1950-1970

Industry	County Percentage			County Percentage to State Percentage		
	1950	1960	1970	1950	1960	1970
Agriculture, forestry, fisheries	16.4	9.2	4.7	1.78	1.86	1.51
Mining	3.3	3.1	2.5	0.24	0.23	0.08
Construction	8.7	7.9	7.5	1.10	1.13	0.97
Manufacturing	13.7	17.0	18.6	0.35	0.36	0.47
Transportation, communication, and public utilities	8.4	7.7	6.9	0.64	0.55	0.54
Wholesale and retail trade	21.7	22.1	22.3	0.65	0.93	0.79
Finance, insurance, and Real Estate	3.3	4.3	5.2	0.58	0.84	0.50
Business and repair services	2.7	2.8	3.5	1.07	0.64	0.54
Personal services	8.5	8.3	5.7	1.17	1.02	1.07
Entertainment and recreation services	1.0	0.8	0.8	1.20	1.00	2.38
Professional and related services	8.0	11.9	16.8	2.13	1.86	2.14
Public administration	<u>4.4</u>	<u>4.9</u>	<u>5.6</u>	0.73	1.10	1.23
Total	100.0	100.0	100.0			

Source: Computed from U. S. Bureau of the Census. U. S. Census of Population: 1970 General Social and Economic Characteristics. Final Report PC(1)-C45 Texas. U. S. Government Printing Office, Washington, D. C., 1972; U. S. Census of Population 1960. Vol. 1, Characteristics of the Population. Part 45, Texas, U. S. Government Printing Office, Washington, D. C., 1963; U. S. Census of Population: 1950. Vol. II, Characteristics of the Population, Part 43, Texas. U. S. Government Printing Office, Washington, D. C., 1952.

Other employment in Hays County was concentrated in manufacturing, trade, and professional services. Each of these industries was relatively stable in relationship to the state over time. The area did not concentrate in one of the presented industries, and there was no noticeable increase in concentration in the 1960-1970 time period in relationship to the 1950-1960 time period (Table XVII).

Employment in other industries was relatively small, and there was little trend in them. The only sector to achieve a one point increase in concentration relative to the state was entertainment and recreation. This ratio increased from 1.26 to 2.38 over the time span (Table XVII).

The growth of basic industries did not markedly change the composition of either industrial or occupational employment. The basic industry growth seems to have created only an increase in the types of industries and occupations which have grown on a state-wide basis. There are no indications that the types of growth which have been noted for the area have changed the production function or have produced specialized secondary and tertiary industries.

#### INCOME AND INCOME DISTRIBUTION

The economic base of the area and the growth of this base are also determinants of the area's income and its distribution. Increases and growth in certain elements of income could result not only in increased absolute and

per capita income, but also in a more equal distribution of income. Table XVIII and Figures I and II explore these possibilities. The years compared in Table XVIII are the census years 1940, 1950, 1959, and 1969 which include the census years of the study period. Total personal income in constant dollars and current dollars and per capita personal income in constant (1967) dollars are shown in Table XVIII.

Total personal income received within Hays County increased dramatically for the time period in both current and real terms. The current dollar increase was from about \$3 million (1940) to \$54 million (1969). The real or constant dollar increase was from approximately \$8 million (1940) to approximately \$49 million (1969). The largest gain in total per capita income came in the last 10 years. Total personal income in current dollars increased from about \$23 million (1959) to about \$54 million (1969), approximately double the previous growth (Table XVIII). In constant dollars the increase in personal income was about \$22 million, slightly more than the increase in current dollars. This finding coupled with the inflation which occurred between 1940 and 1950 makes the 1960 to 1970 period the period of real income growth. During this decade the growth in real income is more than double that of the previous period (Table XVIII).

The 1960 to 1970 decade represents the same time period of the present study, a period where 51 percent of

TABLE XVIII  
 PERSONAL INCOME IN CURRENT AND CONSTANT  
 (1967) PRICES AND PER CAPITA INCOME  
 IN CONSTANT PRICES IN HAYS COUNTY, 1940-1969

	<u>1940</u>	<u>1950</u>	<u>1959<sup>a</sup></u>	<u>1969<sup>b</sup></u>
Total Personal Income (thousands of dollars, current prices)	3,427	13,985	23,388	54,255
Total Personal Income (thousands of dollars, 1967 = 100) <sup>c</sup>	8,159	19,426	26,790	49,413
Per Capita Personal Income (dollars, 1967 prices) <sup>c</sup>	532	1,088	1,344	1,788

<sup>a</sup>Per capita income estimated using 1960 population.

<sup>b</sup>Per capita income estimated using 1970 population.

<sup>c</sup>Inflated by the Consumer Price Index of the United States,  
 1967=100.

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Source: Texas Bureau of Business Research; U. S. Bureau of  
 the Census, 1940, 1950, 1960, 1970 Census of  
 Population; Bureau of Labor Statistics.

the total growth was accounted for by the increase in the federal and college and university sectors (Table IX). The growth of these sectors contributed to the growth of personal income within the area.

Increasing personal income need not indicate increasing welfare for the population. If the population is growing at the same rate as, or faster than, personal income, generally welfare will do no better than remain constant and it could well decline.

Such was not the case in Hays County. Over the past thirty years per capita income in constant dollars increased from \$532 to \$1,788 per capita, a 236 percent increase. The greatest increase in per capita income, about \$500, occurred between 1940 and 1950. The next largest increase, about \$400, (Table XVIII), came during the study years. As a group per capita welfare increased significantly.

#### INCOME DISTRIBUTION

Under certain circumstances, the entire increase in per capita income could accrue to select groups within an economic society. In other cases it could accrue to each segment equally. The former implies either a widening of the income distribution gap if this income accrued to the upper income group or a narrowing of the income gap if it accrued to the lower income group. The latter implies maintenance of the status quo as to income distribution, e. g. with an increase in per capita income every

segment of the economic society would be better off, but there would be no change in the relative income rankings.

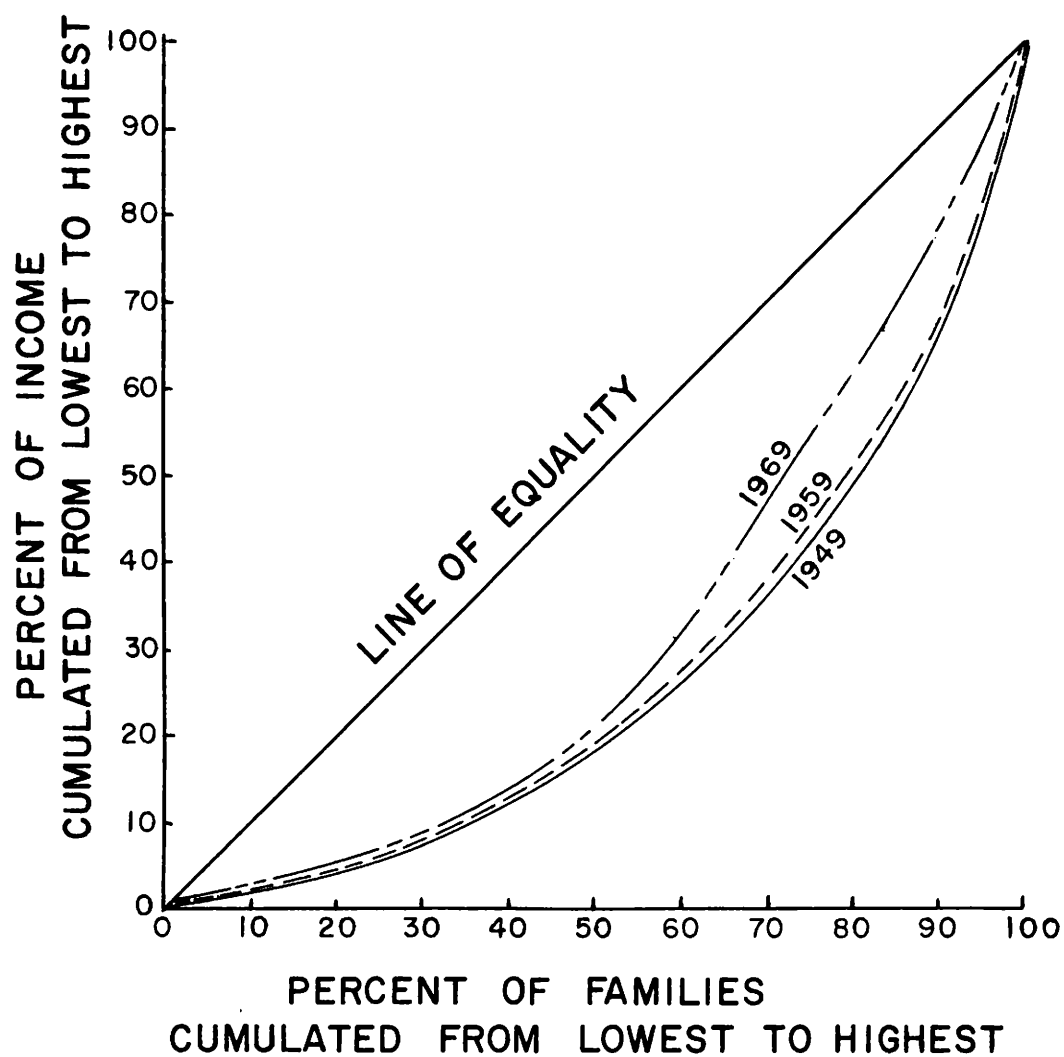
Income distribution within an area is difficult to determine due to the lack of data, the changing price levels, and the inconsistency of the reported income classes. Appendices C, D, and E show the distribution of personal family income for the census years 1949, 1959, and 1969. It may be noted from the appendices that the reported income classes differ. The lowest income class in 1949 was less than \$1000 and the highest income class was \$10,000 and over. These 1949 figures can not be compared with those reported for 1969 when the lowest income class was \$3,000 or less, and the highest income class had risen to \$25,000 (Appendices C, D, and E).

In the selected years income distributions can be compared by computing the variation in income distribution for the various years from the line of income equality. This computation is known as a Lorenz curve.

Figure I compares Lorenz curves for the distributions of family income in Hays County for 1949, 1959, and 1969. The similarity of the Lorenz curves for 1949 and 1959 implies little if any change in income equality during the 1950 decade. Comparison of the Lorenz curves for 1959 and 1969 suggests a change toward equalization of income in higher income classes. The lower 50 percent of the population received approximately the same percentage of the total

FIGURE I

DISTRIBUTION OF FAMILY  
INCOME HAYS COUNTY, 1949 - 1969



income as it had previously (about 15 percent). The balance of the income (85 percent) was more evenly distributed over the upper 50 percent of families. The 1969 curve is almost linear for the upper 50 percent of families, indicating that each 1 percent of families received about 1.7 percent of total income. There was, of course, some additional income received by the higher income groups.

Another method of noting the influence of the economic base on Hays County income distribution is to compare this distribution to that in some larger comparable area. Toward this end, the United States income distribution and the Texas income distribution were computed and plotted with the Hays County income distribution. The results are presented as Figure II. The year selected for comparison was 1969.

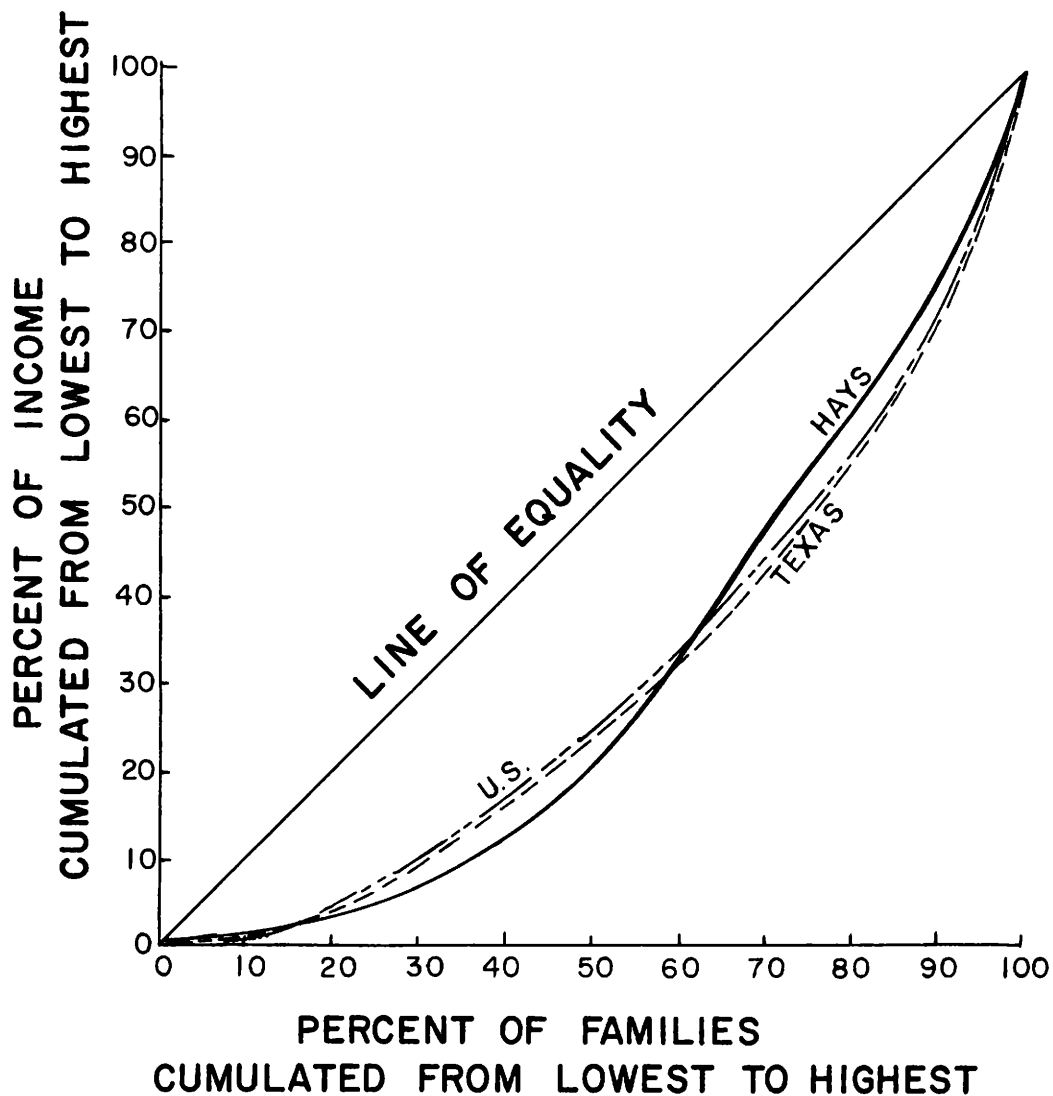
The United States and especially Texas are similar to San Marcos and Hays County. The institutions are of the same nature; therefore, when compared to the Hays County area, the nation or the state should exhibit the same or similar characteristics. The variation in income distribution is largely attributable to differences in the economic base.

The income distributions for Texas and the United States in 1969 are similar. The Lorenz curve for the United States lies slightly above the Texas curve indicating a greater degree of income equality in the nation as a whole. The difference, however, is slight.



FIGURE II

COMPARISON OF DISTRIBUTION  
OF FAMILY INCOME HAYS COUNTY  
WITH STATE OF TEXAS AND U.S. INCOMES,  
1969



The picture changes, however, when the Hays County Lorenz curve is considered. The lower 60 percent of the Hays County population received relatively less of regional income than did comparable national or state income groups. The lowest 15 percent of income receivers received about the same relative amounts for all three areas (about 3 percent). However, the Hays group between 15 and 60 percent received less. The gap was widest for the lowest 45 percent of income earners in Hays County who received about 15 percent of regional income compared to about 19 percent for the same group in Texas and about 20 percent nationally.

A more equal distribution of income is observed for families in Hays County on the lower end of the higher income receivers who more nearly received a proportionate share of income than did their comparable group on a state and national basis. For instance, the lowest 60-65 percent group of families in Hays County received 30-33 percent of total income, about the same amount received by this group of families state wide and nationally. However, while 90 percent of the families in Hays County received about 75 percent of the income, about 70 percent of national and state income was received by 90 percent of the families. The more equal distribution is consistent above the 65 percent level.

The basic economic forces in San Marcos and Hays County have produced an income distribution which varies

from the state and national distribution. It is more heavily weighted toward the middle income group who more nearly receive a proportionate share of total income than do comparable groups nationally and state wide. The lower income group in the area receives less than their peer group nationally. The primary cause of this discrepancy is the area's reliance on the college and university sector and the government sector for its income.

#### RETAIL SALES

Another indicator of the basic economic forces at work within an economic society or region is the level and type of trade that occurs at a location. Trade can be an export or an import function depending upon the size and diversity within a region. Larger urban or trading areas have a pull whose influence on the outlying regions is a function of size and distance. San Marcos and Hays County is subjected to the influence of two such larger urban centers, lying almost midway between San Antonio and Austin, Texas. Either center would tend to reduce retail sales in the Hays County area.

Local economic development could result in an expansion of retail trade. The types of retail trade in a region also depend on the origins of the trade. Total retail sales and selected sector sales yield some indication of the economic forces at work.

This portion of this study considers retail trade and a limited disaggregation of the trade data for the years 1954, 1958, 1963, and 1967. These years include some of the base study years and indicate the trends which are present. The basic influences on trade growth are also noted. Table XIX presents total sales and a selected disaggregation of sales for the business census years 1954-1967.

Trade increased over this time period. Total sales increased from \$15 million (1954) to about \$27 million (1967). The period of greatest increase was from 1963 to 1967 when total retail sales increased by about \$7 million. The smallest increase was recorded in the 1954 to 1958 period when sales increased about \$1.5 million.

Sector sales grew accordingly. The largest increase in sector sales was in other retail trade. Sales in this sector increased by approximately \$5 million in the thirteen year time span. The next largest absolute increase in retail sales occurred in automotive sales (about \$3.5 million) with the smallest absolute increase in sales occurring in eating and drinking places (Table XIX).

Relative increases in sales were an entirely different matter. The second part of Table XIX presents the growth of total sales and sector sales on an index basis. This allows for the consideration of relative retail sales growth.

TABLE XIX

TOTAL SALES AND GROWTH INDEX, RETAIL  
TRADE AND SELECTED RETAIL TRADE SECTORS  
SAN MARCOS AND HAYS COUNTY, 1954-1967

Sales (Thousands of Dollars)				
Selected Sectors				
<u>Year</u>	<u>Total</u>	<u>Eating &amp; Drinking Places</u>	<u>Automotive</u>	<u>Other</u>
1954	15,350	784	5,676	8,890
1958	16,823	731	5,779	10,313
1963	19,262	1,246	5,779	12,237
1967	26,679	3,689	9,153	13,837

Growth Index				
Selected Sectors				
<u>Year</u>	<u>Total</u>	<u>Eating &amp; Drinking Places</u>	<u>Automotive</u>	<u>Other</u>
1954	100	100	100	100
1958	110	93	102	116
1963	125	159	102	138
1967	174	471	161	156

Source: Computed from U. S. Bureau of the Census, Census of Business, various years, Retail Trade: Texas, BC67-RA45. U. S. Government Printing Office, Washington, D. C., 1954, 1958, 1963, 1967.

Total retail sales grew by about 74 percentage points in the time period. The largest relative and absolute growth occurred between 1963 and 1967, an index point growth of 49 points. This represents the greatest part of the total growth over the selected time period (Table XIX).

Relative sector growth varied from absolute sector growth. The greatest relative sector growth occurred in eating and drinking places, 371 percentage points. The influence of the university is apparent in this growth. The student body, even the commuting student, patronizes this type of establishment. The growth of student numbers and employee numbers contributed largely to this type of retail sales. Other sectors grew relatively less. The growth for automotive sales was 61 percentage points, for other sales 56 percentage points. Both increases were considerably less than the eating and drinking sectors.

The uniqueness of the San Marcos-Hays County retail trade area can also be examined on a comparative basis. Given the total population of the area, there should be some level of retail sales. This level of sales was estimated for the census years for San Marcos and Hays County. The estimation procedure is as follows. Retail sales for counties with approximately the same population as Hays County were computed for the census years. The mean sales for these counties were computed, and this amount was divided by mean population. This yielded a mean expenditure

for each person. Multiplication of mean expenditure per person by the Hays County population estimated what sales should have been in Hays County in the census years. The ratio of the actual sales to the estimated sales was then computed. The results of these computations are presented as Table XX.

The most meaningful analysis of these numbers can be made from the ratio part of the table. Actual sales in Hays County were never as large as estimated sales. This implies that expenditures per person in San Marcos-Hays County were less than expenditures per person in counties of comparable size. They approached this point in 1954 (.9698) but declined thereafter. In 1967 the ratio was about .84, greater than the 1963 ratio (.78), but still significantly less than expected. The patterns of the other ratios were similar. Eating and drinking place sales and automotive sales were both about estimated in 1954, with ratios not significantly greater than one. The ratio for other retail sales were less than one (about .93). These ratios had changed by 1958, when they were all less than one (Table XX). The ratios all remained less than one for 1958-1967 except for eating and drinking places. This ratio rose to about two in 1967, suggesting that expenditures per person in San Marcos and Hays County were twice as large as expenditures per person in counties of comparable size. This phenomena occurred in spite of the fact that the local sale of alcoholic beverages was prohibited at the time.

TABLE XX

ESTIMATED RETAIL SALES BY  
SELECTED RETAIL SECTOR AND RATIO  
OF ESTIMATED TO ACTUAL RETAIL SALES  
SAN MARCOS AND HAYS COUNTY, 1954-1967

<u>Estimated Retail Sales (Thousands of Dollars)</u>				
<u>Selected Sectors</u>				
<u>Year</u>	<u>Total</u>	<u>Eating &amp; Drinking Places</u>	<u>Automotive</u>	<u>Other</u>
1954	15,828	769	5,496	9,563
1958	19,007	904	5,877	12,088
1963	24,559	1,112	7,608	15,817
1967	31,794	1,647	10,032	19,457

<u>Ratio of Actual to Estimated Retail Sales</u>				
<u>Selected Sectors</u>				
<u>Year</u>	<u>Total</u>	<u>Eating &amp; Drinking Places</u>	<u>Automotive</u>	<u>Other</u>
1954	.9698	1.0195	1.0328	.9296
1958	.8851	.8086	.9833	.8532
1963	.7843	1.1203	.7596	.7737
1967	.8391	2.2398	.9124	.7112

Source: Computed from U. S. Bureau of the Census, Census of Business, various years, Retail Trade: Texas, BC67-RA45. U. S. Government Printing Office, Washington, D. C., 1954, 1958, 1963, 1967.



This time period was the same time period as one of rapid university growth (Table X). This growth, therefore, had a strong influence on the type of retail sales structure that developed. The strong retail sales pull expected by neighboring urban centers was at the expense of other retail sales. This pull, however, was countered by local growth in the eating and drinking sector.

#### SUMMARY AND CONCLUSION

The San Marcos and Hays County regional economy has been examined on the basis of income and employment. This was achieved by dividing this economy into its various components, assigning these sectors to either a basic or non-basic category and computing regional multipliers from the results.

These multipliers were computed on a simple Tiebout basis and on the more sophisticated Leontief input-output basis, using modified San Antonio multipliers. The results for the simple multipliers were for the multipliers, both dynamic and static, to be larger than would have been expected on a a priori basis. This tends to suggest that some local element of this economy was being overlooked. The elements of this economy which were overlooked by this type of analysis were the student body and its growth, and welfare payments and its growth. These were considered by their inclusion into the final demand columns of the more sophisticated input-output analysis. Considered on this basis the multipliers are more in line with what would be expected

from other regional economic base studies. From the input-output multipliers some indication of the contribution of each sectors growth to overall growth can be computed.

Given this basis the dominant industry in terms of contributions to general economic well being and growth was the public or government sector. This sector comprises both the state university and the federally funded job corps center located in the area. These combined to account for over one-half of the growth in employment and income.

Their contribution occurs by two methods. The growth in student numbers at these institutions was accompanied by a slightly less than proportionate growth in employment at the state university and about a proportionate growth at the job center. This growth coupled with the cash outlay of the students themselves gave this sector its overall importance.

The fact that the government was the dominant sector does not mitigate the importance of the contribution of the other sectors. The areas of manufacturing, agriculture, welfare payments, tourism and construction and mining all made significant contributions to the growth of the area. The aggregate multiplier for these sectors was necessarily less however. This was true due to the lack of what in essence might be classed as the double threat of the educational system, i. e. student expenditures and faculty and staff expenditures.

The economic base of the region also contributed to the general characteristics of the region as to population age, ethnic composition, income distribution, retail sales and industry and occupational employment. These general characteristics were considered in Part II of the study.

The area conforms to what would be expected as to age distribution. However, it is possibly worth noting that either the college student has aged i. e. is older as a group, or the presence of this age group has induced settlement of more of the same type.

The ethnic distribution of the population has not changed radically as the region has grown. There has been a relative increase in the number of persons with Spanish surnames and a relative decrease in black persons. The anglo portion of the economy has remained relatively stable over time.

The absolute and relative numbers of persons employed by industry and occupation also changed as this regional economy has grown. The trend has been away from agriculture and toward the more urban white and blue collar occupations in both the productive and service sectors of the economy. The service industries and the white collar occupations enjoyed the largest relative growth in the area. This growth however was in line with the developments nationally and state wide, thus the specialized base has not produced specialized secondary and tertiary growth.

This specialized base has however produced income and an income distribution. The growth of this base has also produced some change in the income distribution.

Total and personal per capita income increased for the region over time. This is true on both the absolute and relative basis.

Income distribution also changed over time. On the Lorenz curve basis there was a trend toward greater income equality. There was also a greater degree of equality for the higher income receivers in Hays County than for the state or nation in 1969. However, the lower income group received less of total income than did their peers at the national and state levels in that year.

Other measures of the economy such as retail sales and expected retail sales were computed. Retail sales increased over time. However, total retail sales in the region were less than would be expected on a strictly population basis. When the location is noted the lack of retail trade is explainable. The region is between two metropolitan areas, each of which exerts trade pull on this area. A more remote location could be expected to retain a greater proportion of the retail trade.

The type of trade in the area was somewhat revealing. The development and growth of the university and other sectors has created a relatively large growth in the eating

and drinking sector. Automotive sales are about as expected and other retail sales lags.

Given the importance of the government sector to the local economy, the local leaders should lend every effort to promoting growth in this area. It is doubtful that local effort would be as fruitful in the area of the job corp center as it would in promoting the college and university. The job corp decisions are made in Washington, D. C. which is more remote and less subject to local pressure than is the state decision as to higher education. Another factor to consider is that the multiplier effect for the combined college and university sector is larger than the job corp or any other basic economic sector of the local economy. The method of college and university promotion or any other promotion of industry or government expenditure is outside the scope of this study. However, it is believed that a concerted effort by the university itself and the local community would yield results of a beneficial nature to all parties involved.

It is worth noting in passing that the promotional struggle at the university may become a holding action. The projections are for a smaller group to be of college age in the future. There are also indications of a growing anti-college sentiment in the population generally. These elements could portend a slackening in the demand for higher education facilities. When this phenomenon is coupled with the

proliferation of these facilities around the state it is quite possible that this sector will decline in this region. It will thereby require some effort to either avoid or mitigate the effects of this decline.

To recommend an all out effort in the college and university sector does not imply that any other potential growth sector should be neglected. There are some indications that industry is moving from some of the more congested areas. There are further indications the amenities of a region have acquired a prominent position in the locational decisions of migrating firms. It is suggested that the area under consideration has a relatively large share of amenities and that these amenities could be enhanced. The indications are that this would render the area more attractive to industry and provide either a widening of the economic base or some offset to the possibility of a flattening or decline in the current base.

APPENDIX A  
HAYS COUNTY REGIONAL SECTORS

<u>Sectors</u>	<u>SIC Code</u>
Agriculture	01, 02, 03, 04, 05, 06, 071, 072, 073
Construction & Mining	131, 144, 151, 161, 162, 171, 172, 173, 174, 175, 176, 177, 178, 179,
Manufacturing	201, 202, 205, 208, 209, 229, 251, 271, 307, 327, 339, 364, 379
Transportation	412, 417, 421
Communication & Utilities	481, 483, 492
Wholesale Trade	501, 502, 504, 505, 507, 508, 509
Eating and Drinking Places	581
Other Retail Trade	521, 522, 523, 525, 531, 532, 533, 535, 539, 541, 544, 561, 562, 571, 573, 591, 594, 595, 596, 597, 599, 551, 553, 554, 559, 753
Finance, Insurance, and Real Estate	602, 612, 613, 614, 631, 641, 651, 654, 655, 656, 661
Personal Services	721, 723, 726
Business Services	731, 734, 739, 861, 891, 893
Elementary & Secondary Schools	821
Colleges & Universities	822
Health, Physicians and Dentists, Health Services, NEC	801, 809
State & Local Government	924, 928, 929, 934, 938, 939
Federal Government	919
Amusements and Lodging Services	701, 703, 783, 793

APPENDIX B  
U. S. EMPLOYMENT BY DESIGNATED SECTOR, SELECTED YEARS, 1959-1971  
(THOUSANDS OF WORKERS)

	1959	1962	1964	1965	1966	1967	1968
Total	33674	35867	37819	39483	41670	43060	43685
Agriculture	4610	4127	3805	3645	3492	3329	3179
Construction and Mining	2651	2566	2753	2936	3158	3063	3216
Manufacturing	2299	2403	2358	2439	2534	2558	2592
Transportation	807	879	895	933	986	1015	1041
Communication & Utilities	928	913	932	966	995	1059	918
Wholesale Trade	2672	2797	2865	2965	3091	3173	3254
Eating & Drinking Places	1471	1615	1751	1857	1974	2083	2188
Other Retail Trade	5392	5592	5884	6159	6473	6717	6968
Finance, Insurance, Real Estate	1837	1960	2137	2224	2276	2338	2028
Personal Services	700	725	774	808	836	958	787
Business Services	816	1035	1183	1275	1431	1558	1660
Elementary & Secondary Schools	2501	3277	3794	4174	4634	4908	5098
Colleges & Universities	495	812	1024	1135	1307	1424	1613
Health	386	436	513	563	618	694	782
State & Local Government	3156	3579	3862	4041	4214	4371	4530
Federal Government	2275	2427	2528	2588	2861	2993	2984
Amusements & Lodging	678	724	761	775	790	819	847



## APPENDIX B (Continued)

	1969	1970	1971
Total	45578	46907	47206
Agriculture	3007	3007	2842
Construction and Mining	3285	3289	3214
Manufacturing	2682	2656	2587
Transportation	1077	1086	1056
Communication & Utilities	1110	1167	1182
Wholesale Trade	3326	3426	3386
Eating & Drinking Places	2309	2438	2484
Other Retail Trade	7255	7467	7501
Finance, Insurance, Real Estate	2508	2630	2671
Personal Services	869	844	790
Business Services	1826	1979	1945
Elementary & Secondary Schools	5346	5603	5862
Colleges & Universities	1640	1765	1871
Health	853	929	995
State & Local Government	4655	4850	4991
Federal Government	2969	2881	2931
Amusements & Lodging	861	890	898

APPENDIX C  
THE DISTRIBUTION OF PERSONAL  
INCOME BY FAMILIES (1969)  
HAYS COUNTY, TEXAS

Income Class	Per Cent of Families in Class	Per Cent of Total Income Received
Less than \$3,000	17.46	3.45
\$ 3,000 - \$ 4,999	18.88	8.05
\$ 5,000 - \$ 6,999	16.20	10.39
\$ 7,000 - \$ 9,999	17.41	26.29
\$10,000 - \$14,999	16.35	20.76
\$15,000 - \$24,999	10.23	18.99
over \$25,000	<u>3.49</u>	<u>12.07</u>
	100.00	100.00

Source: Computed from U. S. Bureau of the Census, Census of the Population: 1970 General, Social, and Economic Characteristics, Final Report PC(1)-C45, U. S. Govt. Printing Office, Washington, D. C. 1972.

APPENDIX D  
THE DISTRIBUTION OF PERSONAL  
INCOME BY FAMILIES (1959)  
HAYS COUNTY, TEXAS

Income Class	Per Cent of Families in Class	Per Cent of Total Income Received
Less than \$2,000	28.44	6.27
\$ 2,000 - \$ 3,999	29.99	18.40
\$ 4,000 - \$ 5,999	16.71	17.03
\$ 6,000 - \$ 7,999	9.57	13.76
\$ 8,000 - \$ 9,999	5.92	10.90
\$10,000 - \$14,999	6.24	16.12
\$15,000 and over	<u>3.17</u>	<u>17.52</u>
	100.00	100.00

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Source: Computed from U. S. Bureau of the Census, U. S. Census of Population: 1960, Volume I, Characteristics of the Population, Part 45, Texas, U. S. Government Printing Office, Washington, D. C., 1963.

APPENDIX E  
THE DISTRIBUTION OF PERSONAL  
INCOME BY FAMILIES (1949)  
HAYS COUNTY, TEXAS

Income Class	Per Cent of Families in Class	Per Cent of Total Income Received
Less than \$ 1,000	26.90	5.39
\$ 1,000 - \$ 1,999	27.50	15.69
\$ 2,000 - \$ 2,999	18.83	17.91
\$ 3,000 - \$ 3,999	9.29	12.36
\$ 4,000 - \$ 4,999	6.36	10.94
\$ 5,000 - \$ 6,999	5.86	13.11
\$ 7,000 - \$ 9,999	2.69	8.79
\$10,000 and over	2.59	15.81

Source: Computed from U. S. Bureau of the Census. U. S. Census of Population: 1950, Volume II, Characteristics of the Population, Part 43, Texas. U. S. Government Printing Office, Washington, D. C., 1952.

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