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VALUE ADDED
Texas Real Estate Industry
By Ali Anari

Industries are like live beings. They are born, then struggle to survive and grow. If they succeed, they become bigger, providing more profits for shareholders, more employment opportunities, more wages and salaries for employees, more sales and revenue for other industries and more tax income for local, state and federal governments. If they fail to grow, they shrink and eventually face extinction, leaving behind ghost towns, abandoned homes and buildings and faded memories of the good old days.

In a free market economy, changes in technology and preferences are the main driving forces behind the rise and fall of industries. Once, coal production was the "king" of industries. All industries needed king coal, so coal-mining communities thrived.

But the discovery of oil, advances in petroleum technology and consumer preferences for a cleaner and easier-to-use energy resource led to the rise of the petroleum industry. Oil refinery towns thrived at the expense of the coal industry and coal-mining communities.

Until a few years ago, travelers used travel agencies to book airline reservations. Now tickets can be bought using personal computers. The market for personal computers has grown at the expense of travel agencies.

Real estate, like other industries, continually faces market forces that test its strength and provide opportunities for growth and expansion. Despite challenges stemming from changes in the global, national and local economic environments, e-business and virtual trade, the U.S. real estate industry has remained a "brick and mortar" industry, according to research by the Real Estate Center at Texas A&M University.

Measuring an Industry

The size of an industry can be measured in terms of value added, capital stock or number of employees.

Industries buy goods and services from other industries, use labor and capital stock (including land) to increase the value of the purchased goods and services, and sell their output to other industries and consumers. Value added is the value of goods and services sold by an industry to other industries or to final consumers minus the value of goods and services it purchases from other industries. Each input used contributes to adding value and is compensated for adding values. Total value added is the total income or compensation of the production factors used to add value.

Measuring the size of an industry by capital stock involves calculating the total value of land and buildings, equipment and software used in the industry. Land and buildings are the main capital stock of the real estate industry, and the size of the industry is defined as the aggregate value of land and buildings used in the residential, commercial and industrial markets.

Industry size also can be measured by the number of full-time equivalent employees including self-employed persons. Value added is the most appropriate measure of industry size because it measures from the output side. That is, it measures the total value of goods and services offered to other industries or to final consumers.

The Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce offers data on the gross domestic product (GDP) by industry for the United States and its states measured by value added. The datasets make it possible to compute the contribution of each industry to the GDP of the state or the nation.

According to the BEA, the total value added by the real estate industry consists of value added by real estate professionals and the imputed value of owner-occupied homes.

For owner-occupied property, the BEA treats owner-occupants as if they were renting and imputes a value for the services of owner-occupied housing (space rent) based on rents charged for similar tenant-occupied units. This imputation is necessary for GDP to be correctly estimated when housing units shift between tenant occupancy and owner occupancy.

Real Estate's Portion of GDP

The contribution of the real estate industry to the nation's GDP in 2005 was more than $1,472 billion, accounting for 11.9 percent of the U.S. GDP (Table 1). The value added from real estate, rental and leasing activities in the U.S. economy increased to more than $1,731 billion in 2006 or 13.2 percent of the U.S. GDP (Table 1).

In 2006, Texas' real estate industry was the second most important private industry after manufacturing (Table 1). The industry's contribution to the state's GDP in 2005 was more than $79 billion, accounting for 8 percent of the Texas GDP (Table 1). The value added from real estate, rental and leasing activities in the Texas economy in 2006 was more than $101 billion or 9.5 percent of the state's GDP (Table 1). The lower than national average share of the Texas real estate GDP in the state's total GDP mainly reflects lower than national average rents and house prices.

The Center's research program monitors the relative importance of the state's construction industry because the outputs of the construction industry (residential, commercial and industrial buildings) are inputs for the real estate industry. The share of value added by the Texas construction industry in the state's GDP in 2006 was 5.4 percent, higher than the 4.9 percent share of the nation's construction industry. The Texas construction industry's value added rose from 5.2 percent in 2005 to 5.4 percent in 2006, while the U.S. construction industry's share of the nation's GDP remained at 4.9 percent in 2005 and 2006.

Industrial concentration ratios (or location quotients) for all Texas industries are shown in Table 1. Concentration ratios are calculated by dividing an industry's percentage of total Texas GDP by that industry's percent of total U.S. GDP. For instance, to determine the concentration ratio of Texas' real estate

Table 1. Value Added by Industry, Texas and United States, 2005 and 2006

| | Texas | | | | | | United States | | | |
| | Value Added $Million | | Percentage of Total | | Concentration Ratios | | Value Added $Million | | Percentage of Total | |
	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005
Total Gross Domestic Product	1,065,891	989,333	100.0	100.0	1.0	1.0	13,149,033	12,372,850	100.0	100.0
Private Industries	953,030	882,277	89.4	89.2	1.0	1.0	11,610,409	10,892,216	88.3	88.0
Agriculture, forestry, fishing and hunting	8,339	8,472	0.8	0.9	0.9	0.8	122,352	123,100	0.9	1.0
Mining	100,653	97,710	9.4	9.9	5.2	4.8	256,049	233,330	1.9	1.9
Utilities	33,135	31,147	3.1	3.1	1.6	1.6	262,604	247,992	2.0	2.0
Construction	57,804	51,586	5.4	5.2	1.1	1.1	647,882	611,114	4.9	4.9
Manufacturing	139,686	127,435	13.1	12.9	1.1	1.1	1,601,152	1,512,506	12.2	12.2
Durable goods	72,498	64,152	6.8	6.5	0.9	1.0	915,677	854,288	7.0	6.9
Nondurable goods	67,188	63,284	6.3	6.4	1.2	1.2	685,475	658,218	5.2	5.3
Wholesale trade	70,755	65,648	6.6	6.6	1.1	1.1	788,674	743,193	6.0	6.0
Retail trade	67,262	63,344	6.3	6.4	1.0	1.0	863,155	823,532	6.6	6.7
Transportation, warehousing, excluding Postal Service	34,728	32,363	3.3	3.3	1.2	1.2	363,678	344,636	2.8	2.8
Information	42,490	40,274	4.0	4.1	0.9	0.9	579,232	555,212	4.4	4.5
Finance and insurance	58,714	53,849	5.5	5.4	0.7	0.7	1,027,477	957,690	7.8	7.7
Real estate and rental and leasing	**101,262**	**91,433**	**9.5**	**9.2**	**0.7**	**0.7**	**1,731,115**	**1,578,378**	**13.2**	**12.8**
Real estate		**79,428**		**8.0**		**0.7**		**1,472,558**		**11.9**
Rental and leasing services, lessors of intangible assets		**12,005**		**1.2**		**1.4**		**105,820**		**0.9**
Professional and technical services	68,038	61,892	6.4	6.3	0.9	0.9	929,614	864,111	7.1	7.0
Management of companies and enterprises	16,491	14,768	1.5	1.5	0.8	0.9	239,116	225,827	1.8	1.8
Administrative and waste services	32,591	29,170	3.1	2.9	1.0	1.0	395,860	368,827	3.0	3.0
Educational services	5,689	5,330	0.5	0.5	0.6	0.6	123,296	115,779	0.9	0.9
Health care and social assistance	61,484	57,843	5.8	5.8	0.8	0.8	911,681	859,567	6.9	6.9
Arts, entertainment and recreation	6,249	5,581	0.6	0.6	0.6	0.6	121,853	114,093	0.9	0.9
Accommodation and food services	25,691	23,735	2.4	2.4	0.9	0.9	349,915	330,540	2.7	2.7
Other services, except government	21,971	20,695	2.1	2.1	0.9	0.9	295,704	282,789	2.2	2.3
Government	112,861	107,056	10.6	10.8	0.9	0.9	1,538,624	1,480,634	11.7	12.0

Sources: U.S. Bureau of Economic Analysis and Real Estate Center at Texas A&M University
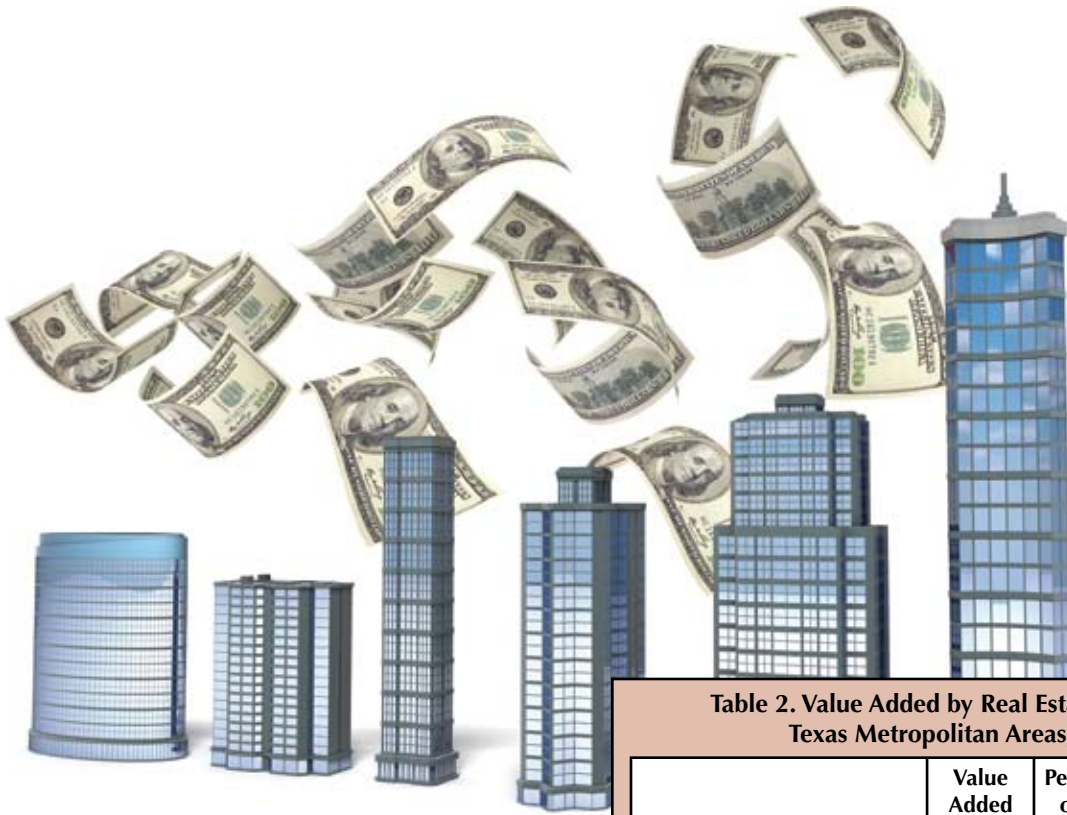
industry in 2005, divide 8 percent, the industry's share of the Texas GDP in 2005, by 11.9 percent, the industry's share of the nation's GDP in 2005, to arrive at 0.7.

Comparisons of the industry concentration ratios for states and the nation can shed light on growth prospects for specific industries. Because of the free movements of goods, technology and people among various regions of the United States, economists expect a mean-reverting process for industry shares of the GDP. That is, in the long run, the shares of value added generated by local industries are expected to converge to national averages. The lower than national average share of the state's real estate industries (that is, concentration ratios of less than one) means the Texas real estate industry has room to grow.

This conclusion is supported by the higher than national average share of the state's construction industry. Construction's share of the state's GDP in 2006 was 5.4 percent compared with 5.2 percent for the nation. This location quotient of 1.1 means more output of buildings from the state's construction industry and more input for the state's real estate industry.

Value Added by MSAs

The real estate industries of Dallas–Fort Worth–Arlington and Houston–Sugar Land–Baytown accounted for 44.3 percent and 28.1 percent, respectively, of the value added by the Texas real estate industry in 2005 (Table 2). After these two giants, Austin–Round Rock and San Antonio generated 6.3 percent and 5.8 percent, respectively, of the value added by the industry (Table 2). These four metro areas accounted for 84.5 percent of the total value added generated by the state's real estate industry in 2005.

The relative importance of the real estate industry within local economies is shown in the last column of Table 2. The Dallas–Fort Worth–Arlington real estate industry's value added ranked first with 12.8 percent of the GDP of the metro area in 2005 (Table 2). The industry's value added in Austin–Round Rock was 8.8 percent of the area's GDP. Houston–Sugar Land–

Table 2. Value Added by Real Estate Industries Texas Metropolitan Areas, 2005

Metropolitan Area	Value Added $Million	Percentage of Texas Real Estate	Percentage of Metro GDP
Abilene	188	0.2	4.1
Austin–Round Rock	5,798	6.3	8.8
Beaumont–Port Arthur	415	0.5	3.4
Brownsville-Harlingen	391	0.4	6.4
College Station–Bryan	344	0.4	6.4
Corpus Christi	732	0.8	5.5
Dallas–Fort Worth–Arlington	40,494	44.3	12.8
Houston–Sugar Land–Baytown	25,712	28.1	8.1
Killeen–Temple–Fort Hood	443	0.5	4.1
Laredo	399	0.4	7.8
Longview	264	0.3	3.5
McAllen-Edinburg-Mission	634	0.7	5.7
Midland	202	0.2	2.6
San Antonio	5,307	5.8	7.9
Sherman-Denison	97	0.1	3.4
Tyler	418	0.5	5.7
Victoria	139	0.2	3.2
Waco	324	0.4	4.7

Sources: U.S. Bureau of Economic Analysis and Real Estate Center at Texas A&M University

Baytown had the third largest share of the value added by real estate in the local economy — 8.1 percent — followed by San Antonio (7.9 percent). ♣

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THE TAKEAWAY

Measured by value added (the value of goods and services sold by an industry to other industries or to consumers), the real industry's contribution to the United States' GDP was 11.9 percent in 2005. Real estate accounted for 8 percent of Texas' GDP that year. The largest MSAs (Dallas–Fort Worth–Arlington, Houston–Sugar Land–Baytown, Austin–Round Rock and San Antonio) contributed the largest portion (44.3 percent, 28.1 percent, 6.3 percent and 5.8 percent, respectively).