

# **CHANGING INDUSTRY AND WAGE STRUCTURE OF THE MIAMI-DADE ECONOMY**

**1998 - 2006**



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## Introduction

Over the eight year span from 1998 to 2006, the Miami-Dade County economy experienced some significant structural changes. These changes are the results of shifts in the industrial makeup of the County's economy as it has been transitioning from a mixed service and industrial economy in the 1980s to an economy dominated by services in the late 2000s. The basis for measuring these changes are the data published by the U.S. Department of Commerce in its annual series entitled County Business Patterns.<sup>1</sup> In this report, the analysis begins in 1998 as it is the first year of the current data series based on the North American Industry Classification System (NAICS).<sup>2</sup> Data prior to 1998 and earlier years are based on the Standard Industrial Classification (SIC) system. Since there is no reclassified data from the SIC system entirely within NAICS, piecing two series together from the two systems would unfortunately introduce inaccuracies into the analysis as there were significant changes in the classification of industries.

NAICS is a classification system for establishments. The system, at both the original version (1997) and the version incorporating its first revision (2002), classifies industries at different levels of aggregation, from the most detailed at the 6-digit level to the broadest at the 2-digit level. Our analysis focus on the 2-digit level first, where industries are divided into 20 groups (sectors), and then on the 3-digit level composed of 86 groupings (subsectors).<sup>3</sup>

The data found in the series relates to three basic factors, employment levels; number of establishments by employment-size class; and annual payroll data for each sector. In order to gain some historical perspective, it was necessary to compare some of the changes in these factors during the study's eight-year period with the same measures and their respective changes during the eight-year period just prior to the former. Doing so, we looked at the changes in employment and establishments between two periods: 1998-2006 and 1989-1997. Because this comparison is done at the aggregate industrial level, there is no inconsistency between SIC and NAICS.

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<sup>1</sup> U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau, County Business Patterns, 1989, 1997, 1998, and 2006, Florida, U.S. Washington, DC., 1991, 1999, 2000 2008. The reports present data on number of establishments, total employment, and payroll on an establishment basis. Employment coverage is limited to private, nonfarm wage and salary workers in establishments covered by the Federal Insurance Contribution Act. Major employment groups excluded are most government employees, self-employed people, domestic service workers, railroad employees, and agricultural production workers.

<sup>2</sup> In fact, there are two NAICS versions; the original version that was developed and adopted in 1997 to replace the Standard Industrial Classification (SIC) System and the first revised version adopted in 2002. For detail information related to the NAICS system, the reader is referred to the official 1997 and 2002 U.S. NAICS Manuals.

<sup>3</sup> The County Business Patterns program for 1998 has tabulated on the 1997 NAICS version, while the program for 2006 has tabulated on the 2002 NAICS version. As a result, data on the 3-digit subsectors in the *Construction* and *Wholesale trade* sectors, as well as on some of the 3-digit subsectors in the *Information* sector are not fully compatible between 1998 and 2006 and were excluded from certain parts of the analysis.

The aggregate changes for the two periods are shown below:

	<u>1989</u>	<u>1997</u>	<u>Change</u>	<u>1998</u>	<u>2006</u>	<u>Change</u>
Establishments	59,736	67,203	7,467 (12.5%)	67,042	75,599	8,557 (12.8%)
Employment	748,169	816,198	6,444 (9.1%)	835,903	868,560	32,657 (3.9%)
Average Size Establishment	12.5	12.1	-0.4	12.5	11.5	-1.0

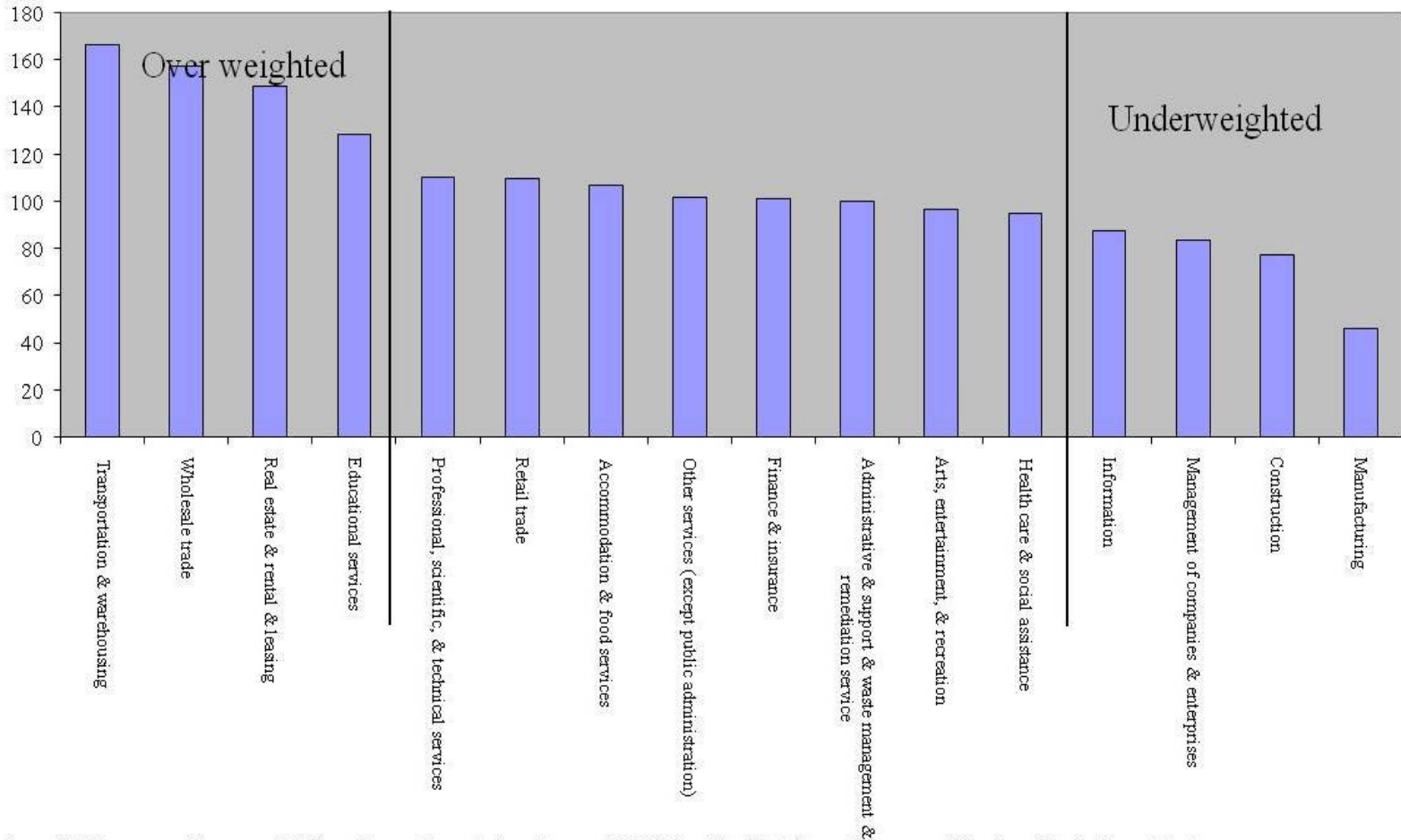
The growth of establishments was about the same in percentage terms for the two periods but was higher in absolute numbers over the most recent years. A significant difference can be noted with respect to employment growth which was much greater in both percentage and actual terms in the second period. The average size establishment declined from 12.5 to 12.1 between 1989 and 1997, moved back to 12.5 by 1998 but declined again to 11.5 by 2006.

We will begin the analysis of the industrial changes in Miami-Dade’s economy by comparing it to that of the nation in 2006, in terms of employment share by sector. After establishing the structural difference between the local and national economy, changes in the Miami-Dade economy between 1998 and 2006 will be analyzed at the 2-digit level. First, the changes in the number of large establishments between 1998 and 2006 for the Miami-Dade economy will be considered. Then, we will examine the share of total establishments and employment each industry represents within the whole of the County economy. Next, the dollar amounts of payroll and payroll per employee will be examined. After that, the most significant changes in number of establishments and employment at the more detailed 3-digit level will be examined. Subsequently, we will analyze the impacts of industrial changes on wage structure. Finally, the importance of the international trade and commerce activity of the local economy will be examined. For more detail on the aspects touched upon in the body of this report consult Table A1 included in the appendix.

### The Miami-Dade and the National Economy Compared

The Miami-Dade economy is not a reflection of the national economy at a smaller scale. Rather, it turns out that it has a structure quite dissimilar to that of the nation. In order to examine the difference in composition of these two economies, an index to measure the relative strength of each sector was developed. To analyze the differences we calculate the share of total employment in each sector at both the county and national level. Next, we divide the county share by the national share for each sector. The coefficient we end up with tells us whether the Miami-Dade economy relies more or less heavily on that sector than the national economy. For example, if the coefficient is equal to 100, then the share of employment of that sector is the same in Miami-Dade and the nation. If it is above 100, Miami-Dade has a higher share of employment in that sector relative to the nation. If it is below 100, Miami-Dade’s share of employment is less than that for the nation. The results of this exercise are depicted in Chart 1.

**Chart 1**  
**Ratio of Proportions of Sectoral to Total Employment in Miami-Dade County**  
**Relative to the United States**  
**2006**



Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 2006, Florida. Miami-Dade County, Department of Planning and Zoning Research Section.

Based on this analysis, it is clear that Miami-Dade's economy is over weighted in terms of employment in the following sectors: *Transportation and warehousing*, *Wholesale trade*, *Real estate and rental and leasing*, and *Educational services*. At the same time, it is under weighted in *Manufacturing*, *Construction*, *Management of companies and enterprises*, and *Information*. For the *Transportation and warehousing*, as well as *Wholesale trade* sectors, the share of employment in the County are more than one and one-half the comparable figures at the national level, respectively. This situation is readily explained by the fact that the Miami area is the major hub for the United States and Latin America. The *Real estate and rental and leasing* sector is also relatively large in the County, reflecting a traditionally strong component of its economic base. The fact that the *Educational services* sector is on the overweight side is not surprising given the metropolitan status of the County, as well as the presence of several very large higher learning institutions such as Miami-Dade College.

On the under weighted side of the sectors, *Manufacturing* is clearly a weak sector in the County as it commands a share of less than one-half the national figure. Despite the large jump in construction activities during the real estate bubble period, the share of the *Construction* sector in the County was still only 77.3 percent of the share at the national level.

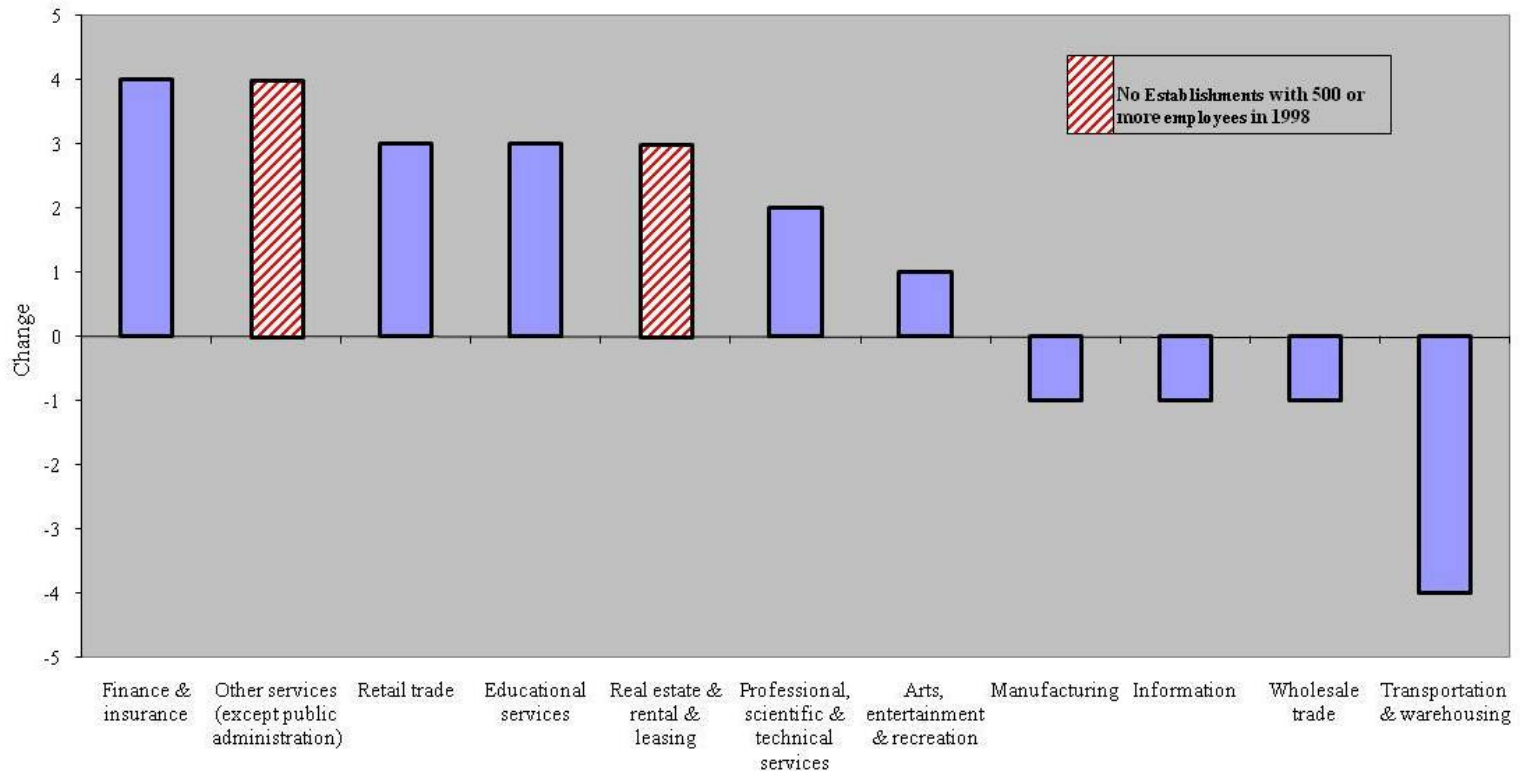
### Changes at the 2-Digit Level

#### *Large Establishments*

In terms of industries or sectors with large establishments that employ 500 people or more there were 115 represented in Miami-Dade in 2006. The leading sector in both 1998 and 2006 is the *Health care and social assistance* sector with 23 such establishments. Second in terms of the 500 plus measure is the *Administrative and support and waste management and remediation services* sector with 15 large establishments in both 1998 and 2006. It is important to note that both of these sectors experienced a significant downturn in the number of large establishments since 2004. For the former, it appears to be the result, in part, of hospital consolidation that occurred during the 2004-2006 period. For the period under review, the sector that lost the most of the "500 plus" establishments either by disappearance, consolidation or reduction in employees was *Transportation and warehousing* with a drop from 16 such establishments in 1998 to 12 in 2006. Finally, the *Accommodation and food services* sector, with a significant portion in domestic serving activities, has 12 large establishments in both 1998 and 2006.

In terms of gainers in the "500 plus" category during the period from 1998 to 2006, the *Finance and insurance* and *Other services* sectors gained the most by adding 4 large establishments to their base during that period. A possible explanation for these changes is the aforementioned domination of service-oriented activities that characterize the Miami-Dade economy in recent years. Other gainers include the *Retail trade* and *Educational services* sectors with a net gain of 3 large establishments each, respectively over the period. These changes can be identified in Chart 2.

**Chart 2**  
**Change in Number of Establishments with 500 or more Employees by Sector**  
**Miami-Dade County, 1998-2006**



Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 1998, 2006, Florida. Miami-Dade County, Department of Planning and Zoning Research Section.

### *Share of Establishments*

In 2006, the *Professional, scientific, and technical services* sector surpassed the number of establishments recorded in 1998 in both the *Wholesale trade* and *Retail trade* sectors and had the largest number of establishments in the County, accounting for almost 15.0 percent of all establishments. The *Real estate and rental and leasing* sector also grew rapidly over the period under review. On the down side, the *Manufacturing* and *Wholesale trade* sectors saw their shares decrease by 22.4 percent and 4.5 percent over the period, respectively. These changes in relative share can be seen in Chart 3.

### *Share of Employment*

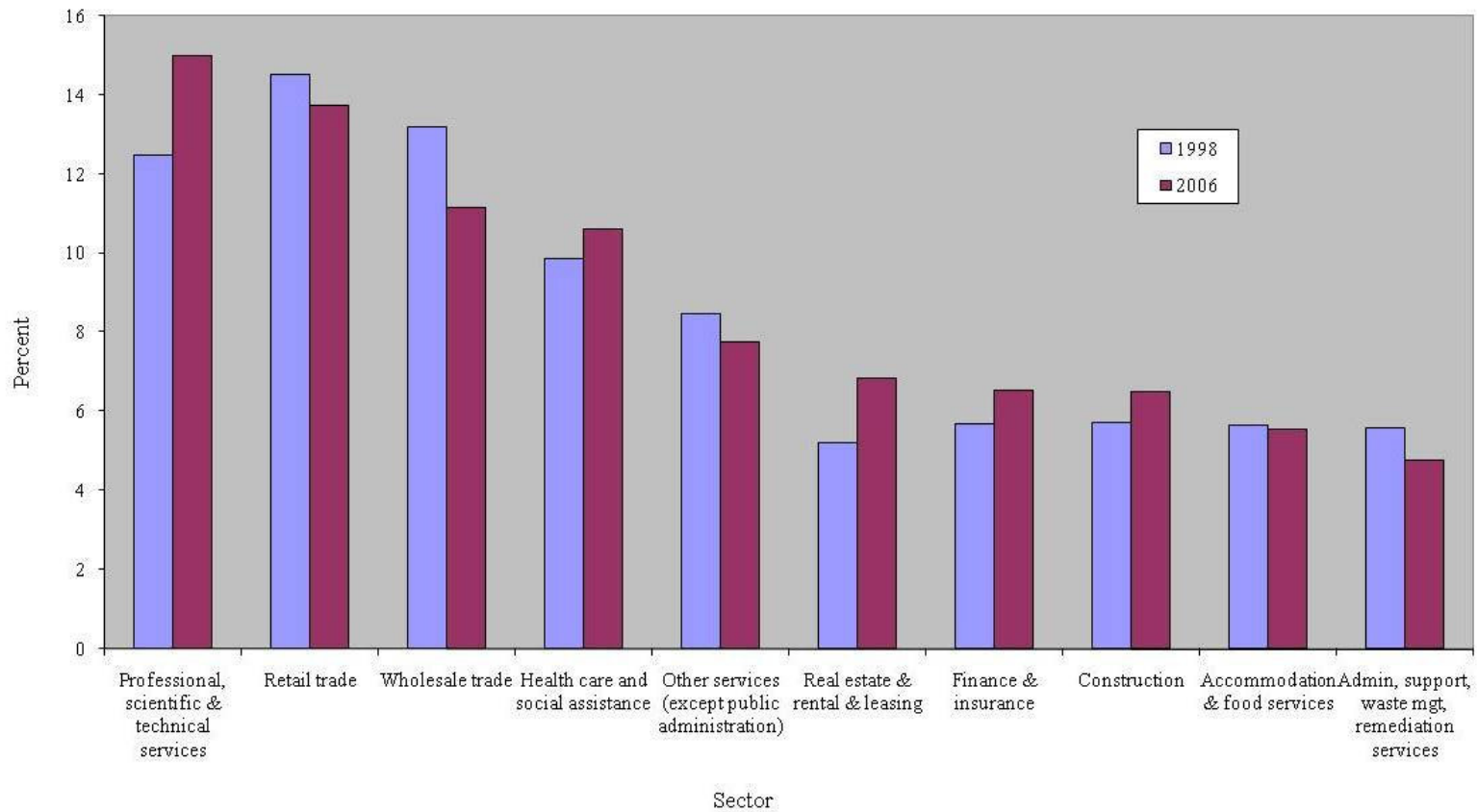
Although *Professional, scientific, and technical services* now has more establishments than *Retail trade*, the later is still highest in terms of employment, accounting for over 14.4 percent of total employment. *Healthcare and social assistance* follows with 13.0 percent of total employment, while the share of employment in the *Manufacturing* sector has fallen from 7.5 percent in 1998 to 5.2 percent in 2006. The share of employment for *Professional, scientific, and technical services*, although still relatively low, has grown by the highest percentage (2 basis points) moving from 5.4 percent in 1998 to 7.4 percent in 2006. The top 10 sectors by employment share in 1998, as well as their shares in 2006 are depicted in Chart 4. The top five sectors by employment and number of employees in the years from 1998 to 2006 are shown in Chart 5.

### *Payroll per Sector*

In terms of payroll, the total annual payroll in Miami-Dade was close to \$33.79 billion in 2006. This translates to an average annual pay per employee of \$38,902. The largest contributing sector is *Healthcare and social assistance* at just over \$4.51 billion dollars in 2006. Despite having the most employees, the *Retail trade* sector falls to fifth place in terms of payroll. On the reverse side, *Professional, scientific, and technical services*, which ranked sixth in terms of number of employees, it is second in terms of annual payroll. Finally, *Accommodation and food services*, which has the third most employees fails to make the top ten sectors in terms of payroll due to the typically low wages of the sector. Chart 6 shows the top ten sectors by annual payroll.

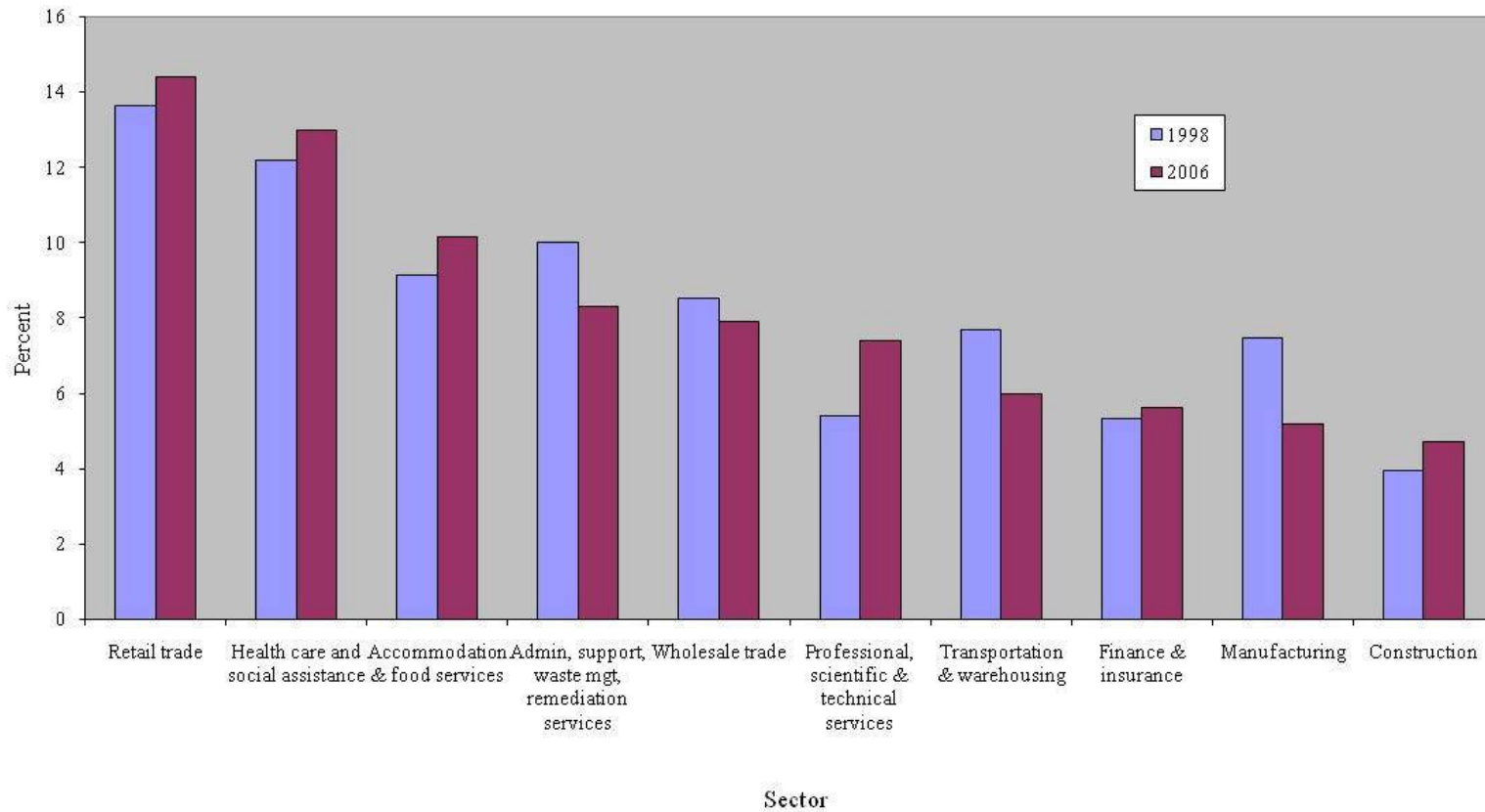
A useful way of appreciating the differences in the rank of sectors in terms of payroll can be gained by examining the annual payroll per employee. Chart 7 shows all major sectors in terms of the pay/employee ratio in 2006. As can be seen, the sector with the highest pay is *Management of companies and enterprises* with \$92,739 pay per worker. This is followed by *Finance and insurance*, as well as *Information* with \$67,009 and \$62,794 annual salary per worker each, respectively. With respect to this ratio and its changes overtime, the sector with the highest percent change during the period studied is *Real estate and rental and leasing* with an increase of 56.6 percent. This is followed by the *Administrative and support and waste management and remediation services*, as well as *Management of companies and enterprises* sectors with increases of 55.4 percent and 52.8 percent each, respectively. On the other hand, the three most stagnant sectors in terms of change in payroll per employee are *Professional, scientific, and technical services*, *other services*, and *arts, entertainment, and recreation*. The later has a gain of just 1.6 percent. The payrolls per employee ratios for these six sectors over the eight-year period are depicted in Chart 8.

**Chart 3**  
**Sectoral Share of Total Establishments in Miami-Dade County**  
**1998 and 2006**



Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 1998, 2006, Florida. Miami-Dade County, Department of Planning and Zoning, Research Section

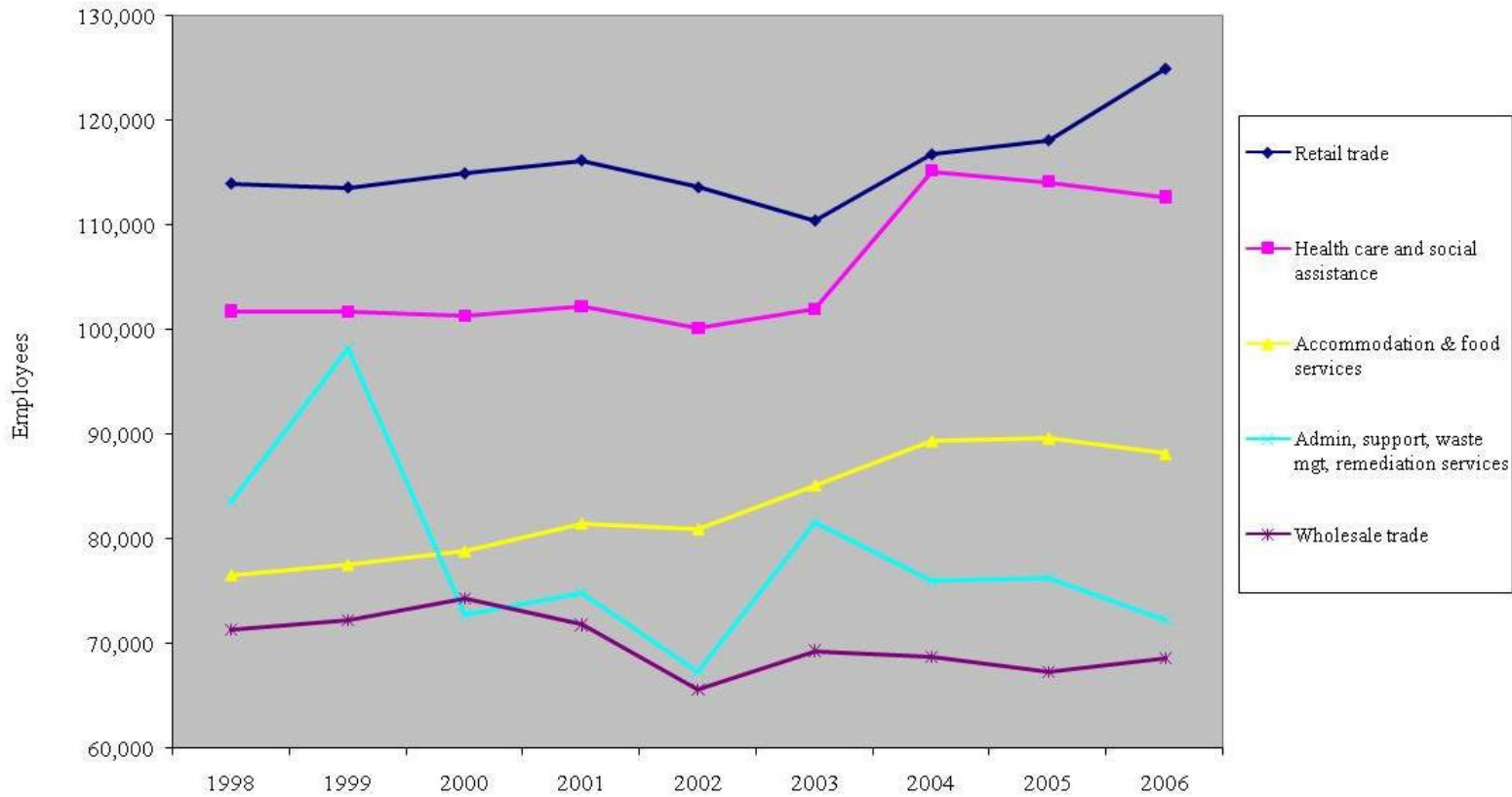
**Chart 4**  
**Sectoral Share of Total Employment in Miami-Dade County**  
**1998 and 2006**



Source: U.S. Department of Commerce, U.S. Bureau of the Census, County Business Patterns, 1998, 2006, Florida. Miami-Dade County, Department of Planning and Zoning, Research Section.

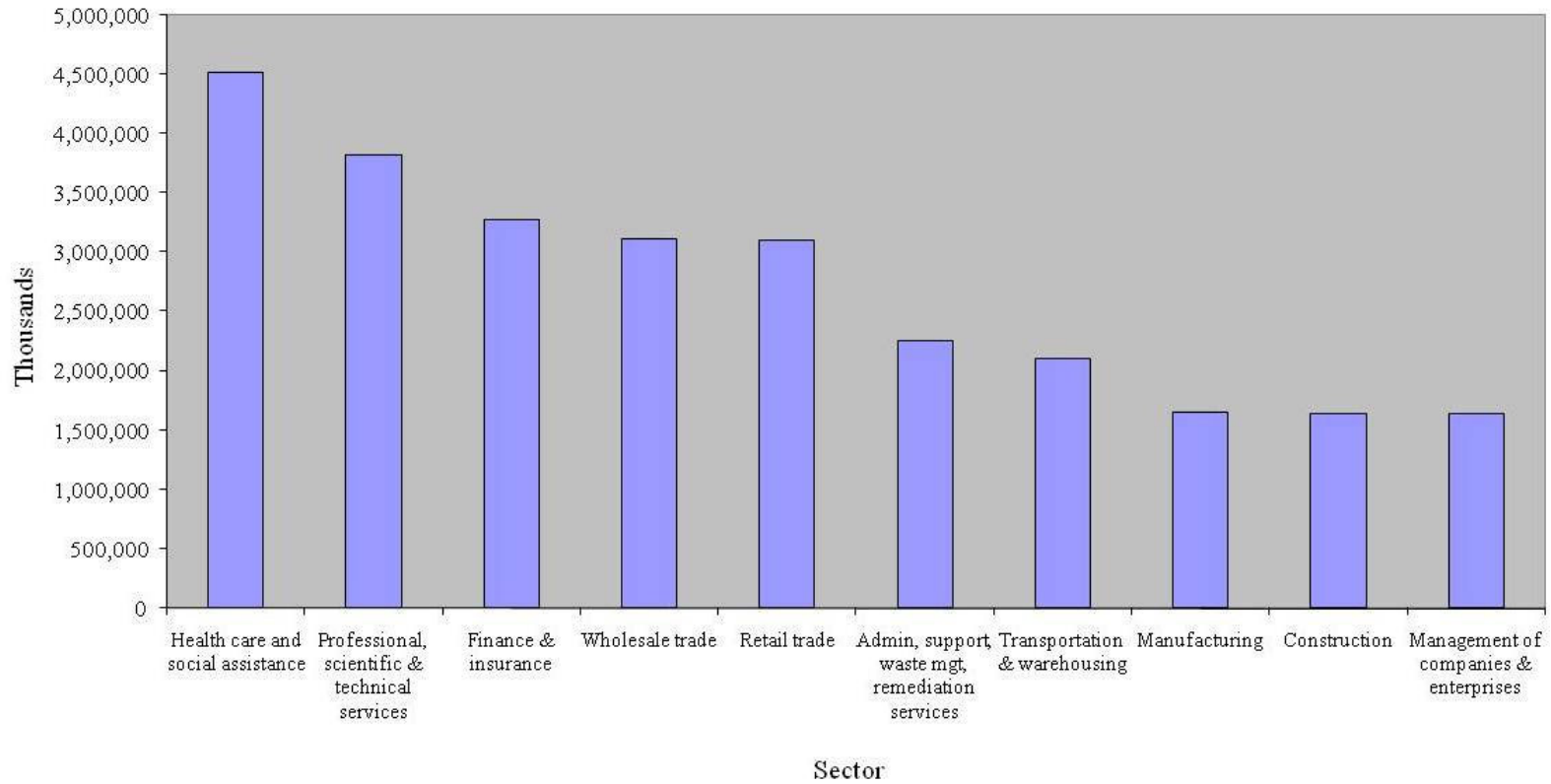
**Chart 5**  
**Employment in Top Five Sectors**  
**Miami-Dade County, 1998-1996**

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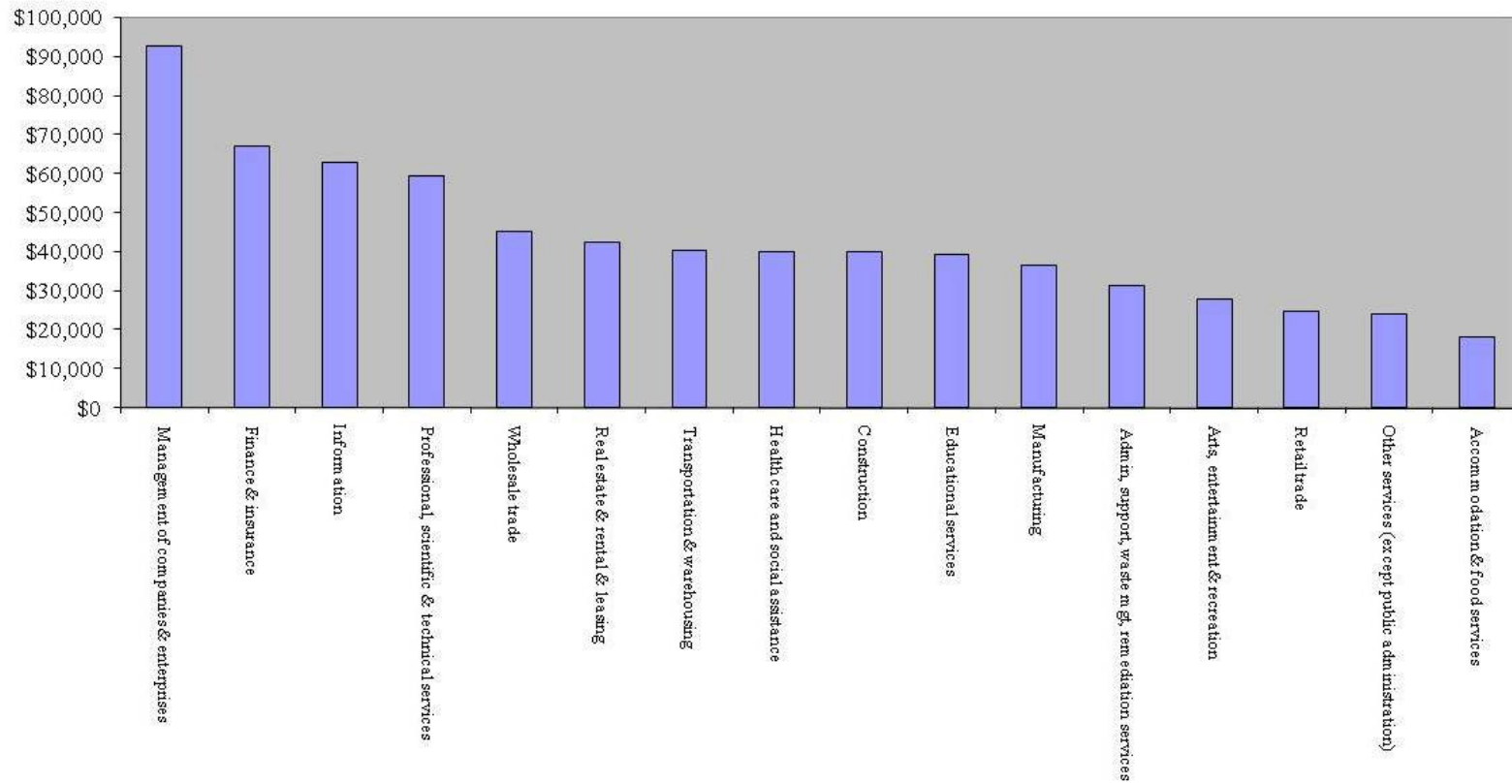
Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 1998, 2006, Florida. Miami-Dade County, Department of Planning and Zoning Research Section

**Chart 6**  
**Annual Payroll in Top Ten Sectors**  
**Miami-Dade County, 2006**



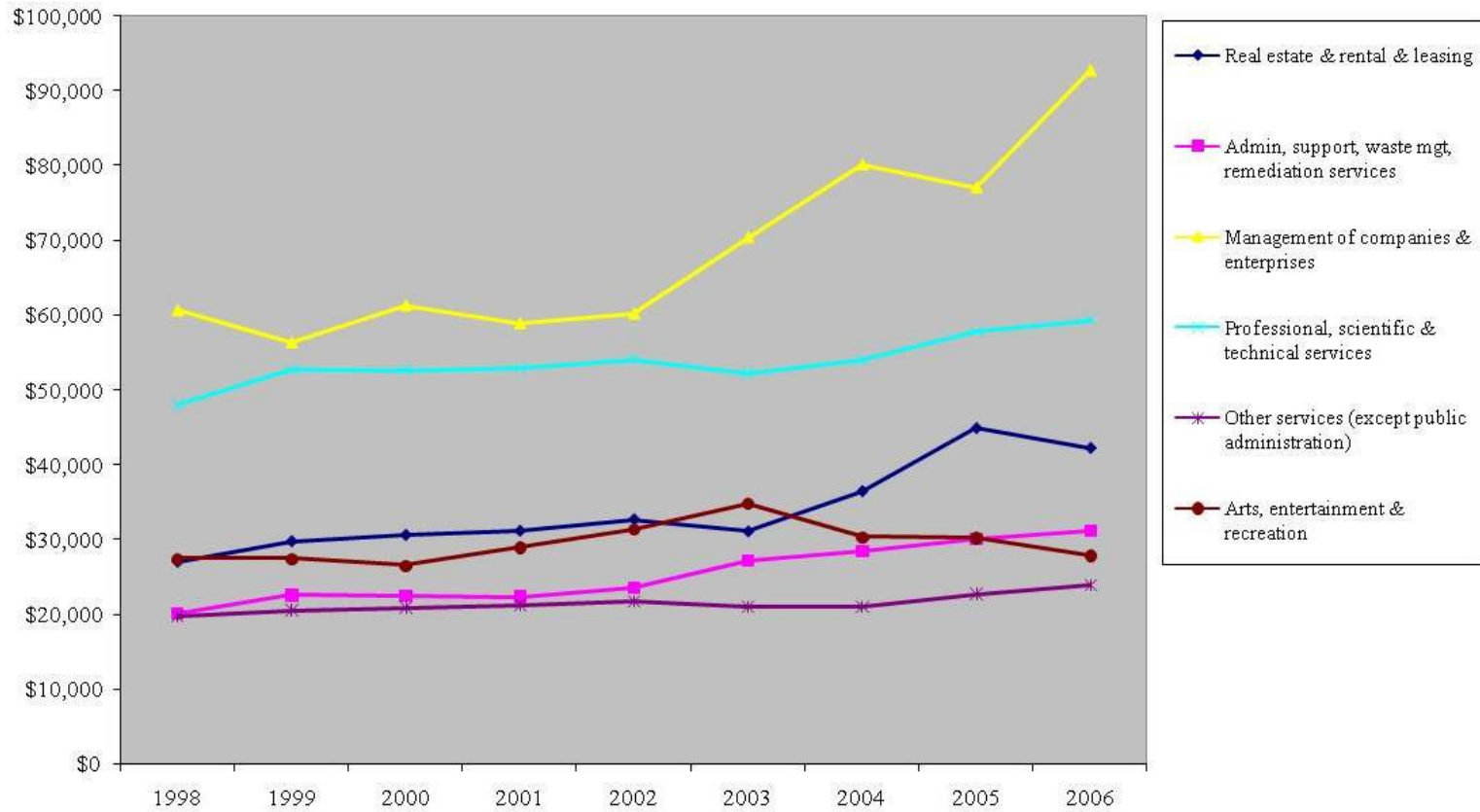
Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 2006, Florida. Miami-Dade County, Department of Planning and Zoning Research Section.

**Chart 7**  
**Payroll per Employee by Sector**  
**Miami-Dade County, 2006**



Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns 2006, Florida. Miami-Dade County, Department of Planning and Zoning, Research Section.

**Chart 8**  
**Payroll per Employee for Selected Sectors**  
**Miami-Dade County, 1998-2006**



Source: U.S. Department of Commerce, U.S. Census Bureau, County Business Patterns, 1998, 2006, Florida. Miami-Dade County, Department of Planning and Zoning Research Section.

## Changes at the 3-Digit Level

The previous section reported on analysis, which was done at the 2-digit NAICS level. It showed, for the eight-year period between 1998 and 2006, an economy becoming more oriented toward services than it traditionally had been, led by expansion within service sectors such as *Professional, scientific, and technical services* and to a lesser extent, *Health care and social assistance*. In this part of the study, we focus on the more refined data at the 3-digit NAICS level. At this level of detail, we use establishments and employment as the basic measures.

As mentioned earlier, this 3-digit group composed of 86 industries or subsectors in Miami-Dade in 2006, represented a slight increase from 82 in 1998.<sup>4</sup> However, a detailed examination of the classification data reveals that this modest change over the eight-year period was not necessarily the result of four industries moving in to Miami-Dade County but rather due to the newly designated four additional NAICS subsectors within the *Wholesale trade* sector (one subsector) and the *Information* sector (three subsectors).<sup>5</sup> Therefore, in essence, the same number of 3-digit industries existed in the County in both 1998 and 2006. It is also to be mentioned here that four sectors at the 2-digit level are identical to and called with the same name as their 3-digit counterparts. These are *Utilities, Professional, scientific, and technical services, Management of companies and enterprises, and Educational services*.

To the extent that there were no “incoming” or “outgoing” industries in Miami-Dade during the 1998-2006 period, other than the aforementioned newly designated subsectors, it can be concluded that the industrial makeup of the County’s economy has not significantly altered by the “ins” and “outs” industries between those years. A much more important influence is the differential growth rates of industries in terms of establishments, as well as employment, which were in the County over the entire period.

### *Establishment Changes*

Over the period under review, a total of 43 industries (3-digit) had positive establishment changes. The large percentage increase in the number of establishments has been in industries that initially had a high number of establishments, while the largest percent declines in the same measure has been among industries that had a low number of establishments. All subsectors with changes larger than 25 percent in terms of number of establishments were considered.

Among the largest gainers that became more dominant in terms of number of establishments, the *Professional, scientific, and technical services* subsector was clearly the leader. This subsector increased its number of establishments by 35.4 percent from 8,368 in 1998 to 11,334 in 2006. Among the top gainers but with lower absolute values than the former in terms of establishments, we also have the *Real estate*, and the *Credit intermediation and related activities* subsectors with growth of 58.2 percent and 41.7 percent each, respectively.

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<sup>4</sup> There were actually 83 industries in the beginning year but the *Pipeline transportation* sector was excluded as there are none present locally.

<sup>5</sup> Again, this is the result of the two different classification systems (1997 and 2002 NAICS) on the basis of which the data in the source document have been tabulated.

Also with a relatively high number of establishments in 1998 and growing over the period studied to more than 500 establishments are the following subsectors with their respective growth rates: *Social assistance* (52.6 percent), *Securities intermediation and related activities* (56.2 percent), *Educational services* (32.6 percent), *Truck transportation* (40.1 percent), as well as *Performing arts, spectator sports, and related industries* (61.9 percent).

Among the subsectors with a size of more than 300 but less than 500 establishments in 2006, we also have industries that have experienced significant net gains in establishments during the same period. These industries with their respective growth rates are: *Nursing and residential care facilities* (28.3 percent), *Nonstore retailers* (36.1 percent), *General merchandise stores* (36.4 percent), as well as *Motion picture and sound recording industries* (26.0 percent).

Finally, to round up the subsectors that saw significant growth over the period studied, we have the following group of gainers at a size of up to 200 establishments in 2006 with their respective growth rates: *Transit and ground passenger transportation*, (25.8 percent), *Warehousing and storage* (82.6 percent), *Hospitals* (35.9 percent), *Museums, historical sites, and similar institutions* (44.4 percent), as well as *Mining, except oil and gas* (50.0 percent).

On the other hand, among the initially weak subsectors that continued to lose establishments we have *Apparel manufacturing*, (-60.8 percent), *Leather and allied product manufacturing*, (-51.6 percent), *Textile product mills*, (-28.3 percent), and *Textile mills* (-38.5 percent). All of these subsectors belong to the traditional mainstays of Miami-Dade's *Manufacturing* sector, which engage to a large extent in the production of apparel, textiles, and footwear. The number of establishments in these subsectors declined substantially along with similar declines in several others including some producing instruments and related products such as in the *Machinery manufacturing* subsector (-36.3 percent). Many of these industrial losses were due to product obsolescence, changes in consumer preference, shifting markets, technological advances, company consolidations, and foreign competition. More than 55.0 percent of all departing establishments were in manufacturing. It appears that no significant offsetting gains in other industries within the *Manufacturing* sector replaced the losses.

Moreover, losses in terms of establishments also occurred in several non-manufacturing subsectors in Miami-Dade over the period. The list includes subsectors from a variety of sector-groups ranked in order of their representation locally in 2006; *Administrative and support services*, *Accommodation*, *Support activities for transportation*, *Miscellaneous store retailers*, *Gasoline stations*, as well as *Sporting goods, hobby, book, and music stores*. It is worth mentioning yet that all of these subsectors, with the exception of the last one, had only single-digit percentage declines between 1998 and 2006. Thus, these findings give evidence that the Miami-Dade economy was experiencing a widespread shift in the number of establishments in many subsectors.

### *Employment Changes*

With respect to employment, a total of 34 industries (3-digit) had positive employment changes.<sup>6</sup> The gains in employment, for the most part, were closely correlated with the areas

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<sup>6</sup> It is noteworthy that the number of 3-digit subsectors, for which employment data was available, is smaller than the number of subsectors where establishments were concerned, due to lack of complete data caused by disclosure restrictions.

of establishment growth. Again, all subsectors with changes larger than 25 percent in employment gains were considered.

There were seven subsectors which added more than 5,000 employees each. Four of these were also among the top ten in establishment growth; *Professional, scientific, and technical services*, *Educational services*, *Real estate*, as well as *Clothing and clothing accessories*. Among these four subsectors, the first was the top gainer in employment with 19,300 additional employees, or a 42.8 percent increase over the period. Number two on the list of the “5,000 plus” net gainers is *Educational services* with 6,268 additional employees, or 29.2 percent growth, followed by *Real estate* and *Clothing and clothing accessories* with net additions of 5,682 employees (43.6 percent growth) and 5,133 employees (33.4 percent growth) each, respectively.

Two other subsectors in the top ten by employment, *Social assistance* and *Performing arts, spectator sports, and related industries* added just under 4,000 employees each with percentage gains of 36.7 (3,970 workers) and 90.2 (3,705 workers), respectively. The remaining four subsectors in the list of the top ten gainers in employment are found in *Electronics and appliance stores*, (2,010 workers, or 25.4 percent growth), *Water transportation*, (1,807 workers, or 48.6 percent growth), *Warehousing and storage*, (1,504 workers, or 122.8 percent growth), as well as *Securities intermediation and related activities* (1,466 workers, or 33.4 percent growth).

No manufacturing subsector was represented in the top ten gainers in employment although one, *Chemical manufacturing* came very close. Over the period reviewed, this subsector added 1,050 employees translating to a 48.0 percent growth. While its gains in employment were in contrast to the losses in most of the other subsectors within the *Manufacturing sector*, its performance in terms of establishments did not quite match the former measure as it recorded just two additional units, or a 2.2 percent increase over the period.<sup>7</sup>

### Impacts of Changes on Wage Structure

As mentioned earlier, the average annual payroll per employee in Miami-Dade was \$38,902 in 2006. This figure compares to \$28,560 in 1998. In order to determine the impact of the changes by sector in the Miami-Dade’s wage levels, a structural mix analysis was performed separately on the top ten fastest growing sectors in terms of employment. Since nine of these are also among the top ten gainers in terms of establishments, there will be a great deal of correlation within that measure.<sup>8</sup> It turns out that of 18 subsectors, 10 were below the County average for all industries. What is of importance, however, is that nearly 55.8 percent of the employment gains came from subsectors that have above average pay levels (53,739 employees). This occurred despite the inclusion of such low paying subsectors as *Food services and drinking places*, *Food and beverage stores*, and the large segment of *Personal and laundry services* that is low paying.

Given that a large portion of the employment growth was found to be in subsectors with

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<sup>7</sup> It is not possible to accurately explain this variation due to disclosure rules.

<sup>8</sup> The structural mix analysis was accomplished by first determining what subsectors constituted the previously identified sectors. Then, within the top ten sector gainers, the average payroll per employee in each of the three largest subsector contributors was calculated for 2006.

above average pay levels, it can be initially concluded that the qualitative impact of structural changes in the County's wage levels was positive. This approach, however, is rather simple and does not capture the full effect of the dynamics of the industry shift process.

In order to identify the industry mix effect on pay levels, a more detailed and illuminating approach was also utilized. There were 82 industries at the 3-digit level for which comparable data was available. The procedure involves computing the 2006 average annual pay per employee, by industry, and applying this to the 1998 employment in that industry.

The resulting dollar values are summed across all industries and the aggregate divided by total 1998 employment. The value derived is an economy wide average salary at 2006 pay rates but weighted by the 1998 employment mix. This figure was \$36,674. Comparing this to the actual 2006 average provides a determination of the mix effect on wages and salaries. The actual 2006 figure was \$37,571 which indicates that the changing mix of employment, by itself, had the effect of raising the average pay level by \$897 or about 2.4 percent.

Thus, the results derived from utilizing this method provide another piece of evidence to our initial conclusion that the structural changes had a positive effect on average pay levels. Simultaneously, as is apparent from the positive difference between the actual and the "reconstructed" 2006 average pay, these results give a degree of support to our speculation that the "industry mix effect", as measured in that year, had a positive contribution to pay levels.

Finally, a different way to test the validity of our conclusion is provided by examining the changes in the average annual pay using the data reported in the source document, *County Business Patterns* for the two years. Doing so allows the calculation of an average which includes all industries because it is done at the aggregate level. For 1998 the value is \$28,560 and for 2006 it is \$38,902. These figures compare to 27,190 and 37,571 which are derived from the 3-digit industries. The two sets are extremely close and there is consistency in that the analytical values are both lower than their counterparts based on complete data. For 1998 the ratio is .952 and for 2006 it is .966. Thus the change between the two years is also close; 36.2 percent for the "all data" pair and 38.2 percent for the "mix" pair. When these changes are compared to the change in the Miami-Fort Lauderdale CPI between 1998 and 2006, which stands at 27.0 percent, both measures show improvements. Over the period, the average wage rate advance was 11.2 percentage points above the CPI increase.

### Conclusion

In summation, it can be said that the structural changes and the continued shift to trade and services in the Miami-Dade economy over the 1998-2006 period did generally have a positive effect on average pay levels. It should be noted, however, that this improvement over the period was, at best, modest. Moreover, in 2006, the Miami-Dade overall average wage of \$38,902 was 2.7 percent below the U.S. average of \$39,965 even though it grew faster than the national rate; 36.2 percent versus 30.6 percent from 1998 to 2006. Among the 25 largest U.S. Metropolitan areas in 2002, Miami-Dade ranked 22<sup>th</sup> and among all such areas (324) it ranked number 66. Continued efforts aimed at expanding higher paying industries are certainly warranted.

## The International Trade and Commerce Activity

A segment of the local economy which is of special interest is that related to international trade and commerce. It is not possible to isolate this activity since the classification data are not assembled in a fashion conducive to that. There is only one NAICS industry with a distinct “foreign” marker that could be exclusively associated with the international trade and commerce activity; that industry is *Deep sea freight transportation* (NAICS 483111). There are a number of other industries at the subsector level (3-digit) for which it can be surmised that a portion of their business is in fact international, some to a very large extent, but to ascertain just how much is beyond the scope of this study. Table 1 list these subsectors, including the 6-digit NAICS industry, and show the change in employment and number of establishments during the 1998-2006 period. Among the industries listed most are within the *Transportation and warehousing* sector, one within the *Wholesale Trade* sector, and two within the *Administrative and support and waste management and remediation services* sector. Even though this is a simple quantification, it still gives some indication of the importance of the activity in Miami-Dade.

**Table 1**

Trade Related Industries  
Miami-Dade County  
1998 and 2006

NAICS Code	Industry Description	Establishments			Employment		
		1998	2006	Change 1998-2006	1998	2006	Change 1998-2006
423	Merchant wholesalers, durable goods	1,103	922	-181	7,839	6,984	-855
481	Air transportation	175	178	3	12,201	5,490	-6,711
483	Water transportation	23	26	3	5,726	7,804	2,078
483111	Deep sea freight transportation	27	27	0	1,150	821	-329
484	Truck transportation	521	730	209	14,714	5,189	-9,525
487	Scenic & sightseeing transportation	19	15	-4	123	53	-70
488	Support activities for transportation	1,085	1,008	-77	14,708	16,467	1,759
492	Couriers & messengers	308	275	-33	7,708	5,916	-1,792
493	Warehousing & storage	69	126	57	1,225	2,729	1,504
561	Administrative & support services	476	456	-20	10,660	9,130	-1,530
562	Waste management & remed. services	35	40	10	797	1,054	257
	<b>Totals</b>	<b>3,841</b>	<b>3,803</b>	<b>-33</b>	<b>76,851</b>	<b>61,637</b>	<b>-14,953</b>

Note: Data shown in NAICS industries 423, 483, 487, 488, 561, and 562 represent only portions of the actual data. There have been changes in NAICS industry 561 from "NAICS 1997" to "NAICS 2002".

Source: U.S. Department of Commerce, U.S. Bureau of the Census, County Business Patterns, 1998 and 2006, Florida. Miami-Dade County, Department of Planning and Zoning, Research section.

Four of these 3-digit industries added establishments; collectively, however, the overall number declined slightly during the study's eight-year period. Likewise, this special set of industries experienced losses in employment in seven of these subsectors during the same period. At least two of these subsectors lost significant employment with *Air transportation* and *Truck transportation* declining by 6,711 workers and 9,525 workers, respectively. Even so, these trade-related industries accounted for 7.1 percent of total employment in 2006. Considering that international trade related employment is also to be found in several other industries, it is apparent that this type of activity was quite important to the Miami-Dade economy.

With respect to average pay, the trade related industries acquit themselves rather well. In 2006, most of these subsectors exceeded the industry wide average of \$38,902 per employee. One of these of course, was the *Air transportation* subsector with an average of \$44,274 due to the high pay of pilots and other airline personnel. Despite its decline in employment, this one subsector accounted for almost 10.6 percent of the total employment within the *Transportation and warehousing* sector. But even if this subsector is removed, over one third of the remaining employment is in industries with above average levels.

Only two subsectors with significant amounts of employment are below average pay-wise. These are *Administrative and support services* and *Support activities for transportation*. They had, respectively, average annual pay per employee of \$30,839 and \$30,891; both about 20 percent below the overall average of \$38,902. Clearly, this group of industries in Miami-Dade County has been highly beneficial and its continued growth should be pursued. A useful extension of the discussion on trade related activity reported here could be the subject for further research.

In terms of the importance of all industries associated with international trade and their contribution to the Miami-Dade's economy, a recent study concluded that this activity accounted for approximately 7.6 percent of total employment in Miami-Dade County in 2006 and workers directly employed in this activity typically earned 31 percent more than the average annual compensation for all workers in the County.<sup>9</sup>

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<sup>9</sup> *The Jay Malina International Trade Consortium (ITC) The Economic Impact of International Merchandise Trade in Miami-Dade County*, StratInfo (Dec. 2006). The estimate of 105,000 jobs attributed to international trade includes persons directly or indirectly employed by international trade activity, and compensation includes both salaries and employer provided benefits.

## APPENDIX

Table A1

**Establishments, Paid Employees, and Annual Payroll by Industry  
Miami-Dade County 1998 and 2006**

NAICS <sup>1</sup>	Industry	Establishments		Paid Employees		Annual Payroll (in '000s)	
		1998	2006	1998	2006	1998	2006
	<b>Total for all sectors</b>	<b>67,042</b>	<b>75,599</b>	<b>835,903</b>	<b>868,560</b>	<b>23,873,282</b>	<b>33,788,690</b>
<b>11</b>	<b>Forestry, fishing &amp; hunting, &amp; ag support services</b>	<b>41</b>	<b>39</b>	<b>w</b>	<b>w</b>	<b>w</b>	<b>w</b>
113	Forestry & logging	2	1	w	w	w	w
114	Fishing, hunting & trapping	4	7	w	w	w	w
115	Support activities for agriculture & forestry	35	31	w	w	w	w
<b>21 c</b>	<b>Mining</b>	<b>19</b>	<b>29</b>	<b>390</b>	<b>1,009</b>	<b>18,237</b>	<b>56,597</b>
211	Oil and gas extraction	3	6	w	13	w	384
212	Mining, except oil and gas	12	18	344	961	15,374	54,430
213 c	Support activities for mining	4	5	w	35	w	1,783
<b>22</b>	<b>Utilities</b>	<b>27</b>	<b>26</b>	<b>w</b>	<b>w</b>	<b>w</b>	<b>w</b>
221	Utilities	27	26	w	w	w	w
<b>23 c</b>	<b>Construction</b>	<b>3,833</b>	<b>4,906</b>	<b>32,924</b>	<b>41,092</b>	<b>950,256</b>	<b>1,640,995</b>
233 *	Building, developing & general contracting	1,289		8,748		274,566	
234 *	Heavy construction	167		4,355		139,605	
235 *	Special trade contractors	2,377		19,821		536,085	
236 **	Construction of buildings		1,353		10,534		494,832
237 **	Heavy and civil engineering construction		381		5,629		293,680
238 **	Specialty trade contractors		3,172		24,929		852,483
<b>31-33</b>	<b>Manufacturing</b>	<b>2,995</b>	<b>2,324</b>	<b>62,468</b>	<b>45,168</b>	<b>1,539,498</b>	<b>1,647,394</b>
311	Food mfg	302	277	4,906	4,683	115,814	136,902
312	Beverage & tobacco product mfg	36	19	1,055	497	28,698	18,800
313	Textile mills	65	40	1,701	493	42,255	13,242
314	Textile product mills	106	76	2,167	1,056	41,247	24,050
315	Apparel mfg	393	154	10,031	2,313	150,110	49,647
316	Leather & allied product mfg	31	15	2,046	91	38,988	2,194
321	Wood product mfg	49	59	915	911	20,684	31,539
322	Paper mfg	34	28	1,298	866	38,312	33,686
323	Printing & related support activities	434	341	5,448	4,190	142,424	140,383
324	Petroleum & coal products mfg	6	3	108	56	3,070	1,002
325	Chemical mfg	89	91	2,187	3,237	83,286	166,990
326	Plastics & rubber products mfg	100	93	2,210	2,578	49,730	76,090
327	Nonmetallic mineral product mfg	103	105	2,284	2,824	68,257	115,681
331	Primary metal mfg	20	20	489	362	15,125	15,141
332	Fabricated metal product mfg	245	220	5,875	5,289	146,787	170,338
333	Machinery mfg	135	86	2,496	1,414	76,431	51,522
334	Computer & electronic product mfg	76	59	2,605	1,434	80,112	60,800
335	Electrical equipment, appliance, & component mfg	46	31	1,181	754	26,267	23,313
336	Transportation equipment mfg	114	86	3,860	2,599	110,683	101,835
337	Furniture & related product mfg	312	272	4,092	3,028	85,155	85,437
339	Miscellaneous mfg	299	249	5,514	6,493	176,063	328,802
<b>42 c</b>	<b>Wholesale trade</b>	<b>8,829</b>	<b>8,432</b>	<b>71,394</b>	<b>68,624</b>	<b>2,396,158</b>	<b>3,103,931</b>
421 *	Wholesale trade, durable goods	5,715		40,619		1,402,110	
422 *	Wholesale trade, nondurable goods	3,114		30,775		994,048	
423 **	Durable goods merchant wholesalers		4,726		35,817		1,703,681
424 **	Nondurable goods merchant wholesalers		2,634		29,975		1,288,802
425 **	Wholesale electronic markets and agents and brokers		1,072		2,832		111,448

Table A1 (Continued)

NAICS <sup>1</sup>	Industry	Establishments		Paid Employees		Annual Payroll (in '000s)	
		1998	2006	1998	2006	1998	2006
<b>44-45</b>	<b>Retail trade</b>	<b>9,736</b>	<b>10,377</b>	<b>114,044</b>	<b>125,025</b>	<b>2,114,544</b>	<b>3,092,490</b>
441	Motor vehicle & parts dealers	947	1,097	13,665	15,246	424,015	659,023
442	Furniture & home furnishings stores	572	622	3,938	4,558	82,459	142,028
443	Electronics & appliance stores	471	532	3,720	5,527	88,173	149,574
444	Building material & garden equipment & supplies dealers	540	573	6,651	7,296	162,264	234,554
445	Food & beverage stores	1,255	1,325	25,601	26,115	348,793	480,502
446	Health & personal care stores	1,056	1,160	11,514	13,036	196,779	315,043
447	Gasoline stations	664	622	3,651	3,524	50,081	63,504
448	Clothing & clothing accessories stores	2,096	2,265	15,365	20,498	250,238	392,311
451	Sporting goods, hobby, book, & music stores	505	436	4,146	3,725	65,637	69,757
452	General merchandise stores	264	360	16,337	16,123	262,041	378,162
453	Miscellaneous store retailers	1,067	978	5,861	5,464	95,290	111,764
454	Nonstore retailers	299	407	3,595	3,913	88,774	96,268
<b>48-49</b>	<b>Transportation &amp; warehousing</b>	<b>2,646</b>	<b>2,814</b>	<b>64,177</b>	<b>51,927</b>	<b>2,061,256</b>	<b>2,099,792</b>
481	Air transportation	175	178	12,201	5,490	389,357	243,064
483	Water transportation	57	61	7,904	9,914	308,007	614,064
484	Truck transportation	521	730	14,714	5,189	579,087	184,583
485	Transit & ground passenger transportation	128	161	1,952	2,223	45,767	71,540
487	Scenic & sightseeing transportation	48	38	315	136	5,676	3,471
488	Support activities for transportation	1,340	1,245	18,158	20,330	483,851	628,023
492	Couriers & messengers	308	275	7,708	5,916	223,100	261,281
493	Warehousing & storage	69	126	1,225	2,729	26,411	93,766
<b>51 c</b>	<b>Information</b>	<b>1,055</b>	<b>1,383</b>	<b>21,526</b>	<b>21,454</b>	<b>910,869</b>	<b>1,347,190</b>
511	Publishing industries (except Internet)	196	221	4,477	4,194	197,577	282,839
512	Motion picture & sound recording industries	269	339	2,252	2,174	67,686	83,631
513 *	Broadcasting & telecommunications	441		12,694		560,073	
514 *	Information & data processing services	149		2,103		85,533	
515 **	Broadcasting (except Internet)		109		5,193		382,816
516 **	Internet publishing & broadcasting		30		272		11,473
517 **	Telecommunications		454		7,773		486,114
518 **	Internet service providers, web search portals, & data processing		202		1,660		91,883
519 **	Other information services		28		188		8,434
<b>52</b>	<b>Finance &amp; insurance</b>	<b>3,797</b>	<b>4,927</b>	<b>44,730</b>	<b>48,776</b>	<b>2,083,412</b>	<b>3,268,444</b>
521	Monetary authorities - central bank	1	1	w	w	w	w
522	Credit intermediation & related activities	1,595	2,260	22,641	28,220	920,711	1,623,311
523	Securities intermediation & related activities	651	1,017	4,393	5,859	428,441	825,351
524	Insurance carriers & related activities	1,517	1,623	17,250	14,360	719,947	803,849
525	Funds, trusts, & other financial vehicles (part)	33	26	w	w	w	w
<b>53</b>	<b>Real estate &amp; rental &amp; leasing</b>	<b>3,477</b>	<b>5,167</b>	<b>18,964</b>	<b>23,910</b>	<b>512,656</b>	<b>1,011,897</b>
531	Real estate	2,865	4,533	13,041	18,723	361,145	841,772
532	Rental & leasing services	598	619	5,865	5,105	147,173	165,372
533	Lessors of nonfinancial intangible assets (exc copyrighted works)	14	15	58	82	4,338	4,753

Table A1 (Continued)

NAICS <sup>1</sup>	Industry	Establishments		Paid Employees		Annual Payroll (in '000s)	
		1998	2006	1998	2006	1998	2006
<b>54</b>	<b>Professional, scientific, &amp; technical services</b>	<b>8,368</b>	<b>11,334</b>	<b>45,105</b>	<b>64,405</b>	<b>2,165,914</b>	<b>3,822,376</b>
541	Professional, scientific, & technical services	8,368	11,334	45,105	64,405	2,165,914	3,822,376
<b>55</b>	<b>Management of companies &amp; enterprises</b>	<b>267</b>	<b>291</b>	<b>14,635</b>	<b>17,578</b>	<b>888,131</b>	<b>1,630,173</b>
551	Management of companies & enterprises	267	291	14,635	17,578	888,131	1,630,173
<b>56 c</b>	<b>Administrative &amp; support &amp; waste management &amp; remediation service</b>	<b>3,726</b>	<b>3,588</b>	<b>83,560</b>	<b>72,300</b>	<b>1,675,863</b>	<b>2,253,945</b>
561 c	Administrative & support services	3,658	3,510	81,997	70,233	1,631,961	2,165,895
562	Waste management & remediation services	68	78	1,563	2,067	43,902	88,050
<b>61</b>	<b>Educational services</b>	<b>565</b>	<b>749</b>	<b>21,435</b>	<b>27,703</b>	<b>638,499</b>	<b>1,085,900</b>
611	Educational services	565	749	21,435	27,703	638,499	1,085,900
<b>62</b>	<b>Health care &amp; social assistance</b>	<b>6,598</b>	<b>8,011</b>	<b>101,798</b>	<b>112,674</b>	<b>3,103,686</b>	<b>4,513,074</b>
621	Ambulatory health care services	5,527	6,461	37,434	42,630	1,317,827	1,893,118
622	Hospitals	39	53	41,035	40,117	1,382,037	1,926,726
623	Nursing & residential care facilities	321	412	12,517	15,145	238,375	384,221
624	Social assistance	711	1,085	10,812	14,782	165,447	309,009
<b>71</b>	<b>Arts, entertainment, &amp; recreation</b>	<b>671</b>	<b>957</b>	<b>9,027</b>	<b>13,797</b>	<b>247,565</b>	<b>384,798</b>
711	Performing arts, spectator sports, & related industries	315	510	4,108	7,813	154,655	257,911
712	Museums, historical sites, & similar institutions	27	39	742	956	17,462	29,824
713	Amusement, gambling, & recreation industries	329	408	4,177	5,028	75,448	97,063
<b>72</b>	<b>Accommodation &amp; food services</b>	<b>3,775</b>	<b>4,183</b>	<b>76,530</b>	<b>88,189</b>	<b>1,006,072</b>	<b>1,578,000</b>
721	Accommodation	397	390	22,246	24,098	376,733	557,309
722	Food services & drinking places	3,378	3,793	54,284	64,091	629,339	1,020,691
<b>81</b>	<b>Other services (except public administration)</b>	<b>5,668</b>	<b>5,856</b>	<b>37,031</b>	<b>40,202</b>	<b>733,193</b>	<b>958,161</b>
811	Repair & maintenance	2,096	2,042	10,486	8,925	260,050	245,027
812	Personal & laundry services	1,916	2,070	11,446	12,646	179,922	246,570
813	Religious/grantmaking/civic/professional & similar org	1,656	1,744	15,099	18,631	293,221	466,564
<b>95 *</b>	<b>Auxiliaries (exc corporate, subsidiary &amp; regional mgt)</b>	<b>77</b>		<b>9,972</b>		<b>547,214</b>	
<b>99 c</b>	<b>Industries not classified</b>	<b>872</b>	<b>206</b>	<b>1,211</b>	<b>w</b>	<b>22,720</b>	<b>w</b>

Note: 1 Data for 1998 is Classified based on the 1997 NAICS, while data for 2006 is classified according to 2002 NAICS.

\* Belongs exclusively to 1997 NAICS

\*\* Belongs exclusively to 2002 NAICS

c Data for 1998 and 2006 are not 100% compatible due to changes in NAICS definitions between 1997 NAICS and 2002 NAICS.

w Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, County Business Patterns, 1998 and 2006, Florida.  
Miami-Dade County, Department of Planning and Zoning, Research Section.