

## Measuring Growth Momentum, Part II: Total Wages

Last month, we introduced a new measure of employment growth for Indiana industries that we called growth momentum (*IN Context* Vol. 2, Issue 5, May 2001). To calculate employment growth momentum for an industry during a specific time period, multiply the change in employment during the period (similar to mass) by the growth rate for that industry (similar to velocity). For industry sectors experiencing decline in employment the momentum is multiplied by negative one, resulting in negative momentum values for these sectors.

The result is a simple employment growth momentum measure that incorporates both numeric change and percent change.

Let's apply the idea to total wages instead of employment. Now we are trying to identify high wage growth industries in the state: those that have experienced the largest growth in total wages paid between first quarter 1995 and first quarter 2000.

Table 1 illustrates total nominal wages for first quarter 2000, change and percent change in nominal wages between 1995 and 2000, and the growth momentum measure for a

**Table 1: Wage Growth Measures, Covered Employment and Wage Data, 1995:1 to 2000:1**

SIC	INDUSTRY • <b>Bold: Top 10 in Numeric Change</b> • <i>Italicized: Top 10 in Percent Change</i>	Total Wages 2000:1	Numeric Change 1995 to 2000	Percent Change 1995 to 2000	Growth Momentum
799	<i>Misc. Amusement, Recreation Services</i>	135,289,546	102,049,246	307.0	31,329,586,704
<b>737</b>	<b>Computer and Data Processing Services</b>	<b>248,813,207</b>	<b>139,499,389</b>	<b>127.6</b>	<b>17,802,030,784</b>
<b>283</b>	<b>Drugs</b>	<b>515,544,891</b>	<b>223,575,442</b>	<b>76.6</b>	<b>17,120,276,946</b>
451	<i>Air Transportation, Scheduled</i>	140,256,455	90,126,982	179.8	16,203,786,712
621	<i>Security Brokers and Dealers</i>	139,959,815	88,789,935	173.5	15,406,822,446
<b>371</b>	<b>Motor Vehicles and Equipment</b>	<b>1,498,784,255</b>	<b>403,468,041</b>	<b>36.8</b>	<b>14,862,051,527</b>
794	<i>Commercial Sports</i>	80,211,384	55,468,965	224.2	12,435,348,695
<b>736</b>	<b>Personnel Supply Services</b>	<b>289,792,381</b>	<b>137,201,341</b>	<b>89.9</b>	<b>12,336,378,317</b>
671	<i>Holding Offices</i>	39,825,928	30,509,693	327.5	9,991,604,623
<b>821</b>	<b>Elementary and Secondary Schools</b>	<b>1,226,036,540</b>	<b>267,947,902</b>	<b>28.0</b>	<b>7,493,678,073</b>
<b>822</b>	<b>Colleges and Universities</b>	<b>610,619,378</b>	<b>151,653,812</b>	<b>33.0</b>	<b>5,011,024,878</b>
<b>581</b>	<b>Eating and Drinking Places</b>	<b>512,363,668</b>	<b>135,196,834</b>	<b>35.8</b>	<b>4,846,180,066</b>
<b>806</b>	<b>Hospitals</b>	<b>945,996,111</b>	<b>183,108,608</b>	<b>24.0</b>	<b>4,394,981,199</b>
<b>801</b>	<b>Offices &amp; Clinics of Medical Doctors</b>	<b>500,801,527</b>	<b>122,053,627</b>	<b>32.2</b>	<b>3,933,246,327</b>
<b>919</b>	<b>General Government, NEC</b>	<b>458,158,895</b>	<b>113,415,211</b>	<b>32.9</b>	<b>3,731,180,782</b>
011	<i>Cash Grains</i>	15,047,126	11,293,754	300.9	3,398,247,747
961	<i>Admin. of General Economic Programs</i>	27,638,709	17,878,263	183.2	3,274,771,336
482	<i>Telegraph &amp; Other Communications</i>	737,768	656,289	805.5	528,621,180
024	<i>Dairy Farms</i>	2,844,041	1,945,765	216.6	421,474,183
421	<i>Trucking &amp; Courier Services, Except Air</i>	458,503,533	39,087,384	9.3	364,273,906
622	<i>Commodity Contracts Brokers, Dealers</i>	759,541	509,853	204.2	104,109,962
331	<i>Blast Furnace and Basic Steel Products</i>	481,576,282	17,895,480	3.9	69,066,522

Source: Indiana Business Research Center and Indiana Department of Workforce Development

subset of industry sectors. The subset of sectors includes any industry that ranks in the top 10 in total wages, change in wages between 1995 and 2000, percent change in wages or growth momentum for wages.

Table 2 contains the rankings for each growth measure for these industries. The industry sectors are listed in descending order of momentum in both tables.

The top 10 sectors in terms of wage growth momentum have numeric wage growth figures that range from \$30 million (holding offices) to \$400 million (motor vehicles and

equipment). Total wage growth rates range from 28% (elementary and secondary schools) to more than 300% (holding offices and misc. amusement and recreation services). Examples of the types of establishments found in each of the top 10 wage growth momentum sectors can be found in Table 3 on page 8.

Using the same analogy as last month, each sector can be pictured as a snowball, growing as it rolls down a hill. The sectors that are experiencing the largest amounts of numeric growth in total wages paid are the ones that are adding the most snow. The sectors

with the highest growth rates are moving the fastest.

Figure 1 on page 8 shows numeric growth and percent change in nominal wages between 1995 and 2000 for each of the top 10 wage growth momentum sectors. There appears to be an inverse relationship between change in wages and percent change in wages for these top 10 industries. The snowballs that are moving the fastest are not the ones that are adding the most snow.

Fastest-moving sectors are holding offices, misc. amusement and recreation services, and commercial *(continued on page 8)*

**Table 2: Ranks of Wage Growth Measures, Covered Employment and Wage Data, 1995:1 to 2000:1**

SIC	INDUSTRY • <b>Bold: Top 10 in Numeric Change</b> • <i>Italicized: Top 10 in Percent Change</i>	Total Wages 2000:1	Numeric Change 1995 to 2000	Percent Change 1995 to 2000	Growth Momentum
799	<i>Misc. Amusement, Recreation Services</i>	15	11	3	1
<b>737</b>	<b>Computer and Data Processing Services</b>	<b>12</b>	<b>6</b>	<b>11</b>	<b>2</b>
<b>283</b>	<b>Drugs</b>	<b>5</b>	<b>3</b>	<b>13</b>	<b>3</b>
451	<i>Air Transportation, Scheduled</i>	13	12	9	4
621	<i>Security Brokers and Dealers</i>	14	13	10	5
<b>371</b>	<b>Motor Vehicles and Equipment</b>	<b>1</b>	<b>1</b>	<b>14</b>	<b>6</b>
794	<i>Commercial Sports</i>	16	14	5	7
<b>736</b>	<b>Personnel Supply Services</b>	<b>11</b>	<b>7</b>	<b>12</b>	<b>8</b>
671	<i>Holding Offices</i>	17	16	2	9
<b>821</b>	<b>Elementary and Secondary Schools</b>	<b>2</b>	<b>2</b>	<b>19</b>	<b>10</b>
<b>822</b>	<b>Colleges and Universities</b>	<b>4</b>	<b>5</b>	<b>16</b>	<b>11</b>
<b>581</b>	<b>Eating and Drinking Places</b>	<b>6</b>	<b>8</b>	<b>15</b>	<b>12</b>
<b>806</b>	<b>Hospitals</b>	<b>3</b>	<b>4</b>	<b>20</b>	<b>13</b>
<b>801</b>	<b>Offices &amp; Clinics of Medical Doctors</b>	<b>7</b>	<b>9</b>	<b>18</b>	<b>14</b>
<b>919</b>	<b>General Government, NEC</b>	<b>10</b>	<b>10</b>	<b>17</b>	<b>15</b>
011	<i>Cash Grains</i>	19	19	4	16
961	<i>Admin. of General Economic Programs</i>	18	18	8	17
482	<i>Telegraph &amp; Other Communications</i>	22	21	1	18
024	<i>Dairy Farms</i>	20	20	6	19
421	<i>Trucking &amp; Courier Services, Except Air</i>	9	15	21	20
622	<i>Commodity Contracts Brokers, Dealers</i>	21	22	7	21
331	<i>Blast Furnace and Basic Steel Products</i>	8	17	22	22

Source: Indiana Business Research Center and Indiana Department of Workforce Development

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(continued from page 7)

sports. These sectors are smaller snowballs that are rolling quickly (total wage growth rates over 200%) but not adding the largest amounts of snow.

Sectors in the next group are not moving as quickly as those above, but are still experiencing total wage growth rates between 90% and 180%. These fast-moving intermediate size

snowballs are scheduled air transportation, security brokers and dealers, computer and data processing services, and personnel supply services.

Large snowballs that are adding the most snow but moving more slowly are elementary and secondary schools, motor vehicles and equipment, and drugs. Each of these industries added at least \$223 million to its payroll between 1995 and 2000. Growth rates

are more moderate for these industries, between 28% and 77%, compared with 33% for the overall state average during the same time period.

Next month, we will conclude this three-part series with a look at top momentum industries with respect to both employment and wages. In other words, we will identify industries that have experienced high growth in both employment and total wages.

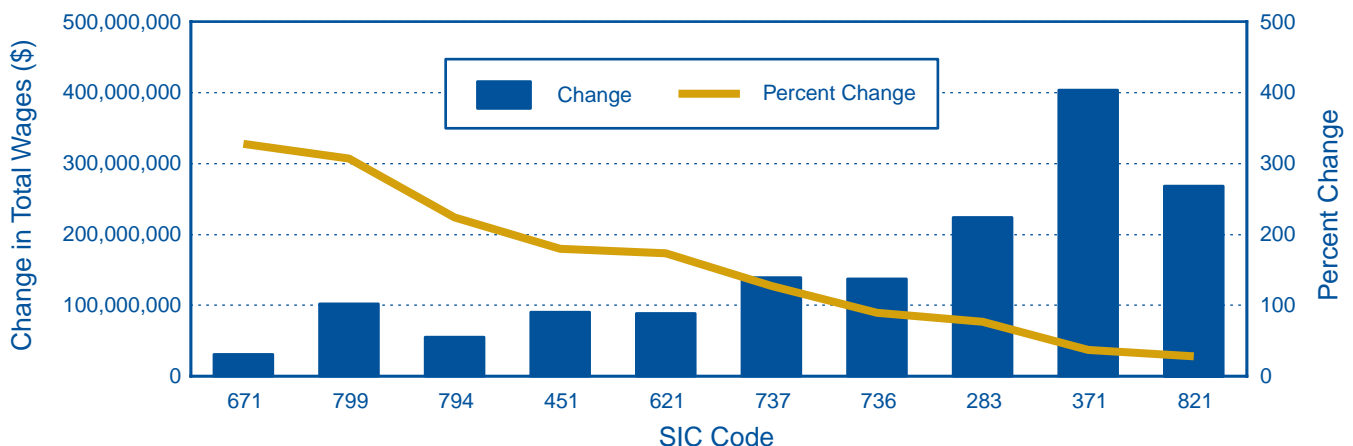
**Table 3: Top 10 Sectors in Wage Growth Momentum**

SIC	Sector	Examples of Types of Establishments
799	Misc. Amusement, Recreation Services	Riverboat casinos, amusement parks, public golf courses
737	Computer and Data Processing Services	Programming, design and development of software, systems
283	Drugs	Medicinal chemicals, pharmaceutical preparations
451	Air Transportation, Scheduled	Air passenger and cargo carriers, courier services
621	Security Brokers and Dealers	Investment bankers, security brokers and dealers
371	Motor Vehicles and Equipment	Motor vehicles, car, truck and bus bodies, parts and accessories
794	Commercial Sports	Professional sports clubs and promoters, racing
736	Personnel Supply Services	Employment agencies, temporary and office help
671	Holding Offices	Bank holding companies, other holding companies
821	Elementary and Secondary Schools	Schools, academies, boarding schools

Source: Standard Industrial Classification Manual, 1987

**Figure 1: Total Wage Growth Momentum: Top 10 Industries**

Change and percent change in wages, 1995 to 2000



Source: Indiana Business Research Center and Indiana Department of Workforce Development