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by

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In 1990, the Upjohn Company employed 7,500 individuals in Kalamazoo County on an average annual basis, or 5.9 percent of Kalamazoo County's total employment.¹ In addition, the company paid \$362.6 million in wages and salaries to its county's workers and an estimated \$7.7 million in dividends payments to stockholders residing in the county. In total, the company provided 8.6 percent of the county's estimated total personal income in 1990.

The total direct economic impact of the Upjohn Company on Kalamazoo County is not confined to just its county payroll and the earned dividends of county stockholders. The Upjohn Company also invested \$161 million in capital expenditures in the county, paid \$19.8 million in taxes to local governments in the county (excluding the state's Single Business Tax), and purchased \$170.2 million worth of goods and services from county suppliers in 1990. As shown in Table 1, the company's total direct economic impact on Kalamazoo County reached \$852.8 million in 1990.

¹ Total employment includes wage and salary workers, self-employed, and agricultural workers. Total personal income generated by the Upjohn Company in the county includes wages and salaries to county's employees and dividends earnings to local stockholders.

TABLE 1
 THE DIRECT ECONOMIC IMPACT OF THE
 UPJOHN COMPANY ON KALAMAZOO COUNTY
 1990

(Millions of Dollars)

Wages and Salaries.....	\$362.6
Benefits (excluding workers' compensation, social security or unemployment payments) .	127.8
Taxes (local).....	19.8
Dividends.....	7.7
Capital Expenditures.....	161.0
Goods and Services ²	170.2
Contributions and Association Support.....	3.7
 Total direct economic impact	 \$852.8

² Includes auto rentals, hotels, air travel, and airport fuel flowage fees.

The direct economic impact of the Upjohn Company on Kalamazoo County, as measured above, increased 3.3 percent in 1990, in spite of a 9.6 percent reduction in employment. Total pay and benefits increased just 1.2 percent from 1989 to 1990, well below the annual average change in consumers prices of 5.4 percent. On the other hand, the company's expenditures for locally supplied goods and services increased 11.6 percent in real terms in 1990, indicating stronger economic ties to the local business community.

The total economic impact of the Upjohn Company on the county is much greater than the number of individuals it employs or the size of its payroll. In addition to the above direct economic impacts, the company generates an even larger indirect economic impact on Kalamazoo County. This indirect economic impact can be measured in employment or income. The company's indirect employment impact includes workers employed by its suppliers located in Kalamazoo County and individuals employed in firms which depend upon the consumption expenditures of Upjohn employees. Indirect income includes the earnings of these indirect workers. Moreover, the company's indirect impact includes the third, fourth, and higher order employment and income effects. For example, Upjohn's indirect employment impact includes individuals employed in firms which are dependent upon the consumer expenditures of individuals employed in producing goods or services for the Upjohn Company or its workforce.

The Upjohn Institute's econometric model of the Kalamazoo County is especially designed to accurately measure the total economic impact of changes in economic activity in the county. The model captures all the

employment and income impact discussed above and further estimates changes in relative production costs, population, and a host of other economic variables.

The total employment impact of the Upjohn Company on Kalamazoo County is 22,680, according to our econometric model. As shown in Table 2, the company's total employment impact on the county can be broken down into both its direct effect (7,500 Upjohn Company employees) and the indirect effect (15,180 jobs created outside the company). Similarly, the total economic impact of Upjohn on Kalamazoo County with respect to income is \$687 million, which is the sum of the \$370.3 million of direct income to Upjohn employees and county stockholders, plus the \$316.7 million of income created in the county, but outside of the company.

In total, an estimated 17.9 percent of the county's total employment depended upon the Upjohn Company, directly or indirectly in 1990. Furthermore, 15.9 percent of the county's total personal income was directly or indirectly dependent upon the Upjohn Company.

Often these total impacts are stated as ratios with respect to their corresponding direct impacts and called employment or income multipliers. The Upjohn Company's employment multiplier was 3.02 ($22,680/7,500$) in 1990, meaning that each job at the company created 2.02 other jobs locally. 1990's employment multiplier was higher than 1989's multiplier of 2.51 due to the company's increased economic ties to the county's business community. The 1990 income multiplier was 1.86 ($\$687.0 \text{ million}/\370.3 million), meaning

that every dollar of income earned through Upjohn added another 86 cents of income locally. 1990s income multiplier, however, was slightly below 1989s income multiplier of 1.97.³

TABLE 2

DIRECT, INDIRECT AND TOTAL ECONOMIC IMPACTS
OF THE UPJOHN COMPANY ON KALAMAZOO COUNTY

	DIRECT	INDIRECT	TOTAL
Jobs.....	7,500	15,180	22,680
		(millions)	
Income*.....	\$370.3	\$316.7	\$687.0

*Includes wages, salaries, and dividends paid to local residents

In 1990, the total economic impact of the Upjohn Company on Kalamazoo County was \$1.21 billion. The total economic impact of the company is the total value of all goods and services produced in the county because of the Upjohn Company alone, minus the cost of all raw and intermediate materials used in the county to produce these goods and services. In economic terms,

³ The difference between the 1990 and 1989 income multipliers may be caused by a slight change in the Institute's econometric model of the county. In the newer model, income and population change lag slightly behind employment change. Hence, the full income multiplier effect of the Upjohn Company is now spread over several years.

it is the portion of the county's total value added or gross regional product which is generated by the Upjohn Company. The total economic impact of the Upjohn Company in 1990 was 18 percent lower than its 1989 estimate of \$1.47 billion.

Methodological Notes

The company's total economic impact on Kalamazoo County was calculated by, first, estimating the total value of all goods and services sold in the county due to the presence of the company in 1990. Included in this sum are retail sales to company workers, as well as, the sales of goods and services directly to the company by area suppliers. Many of these goods and services were totally or partially produced outside the county, however. The cost of all raw and intermediate materials used in the production of these goods and services was subtracted from total sales to yield the estimated company's economic impact on the county.

In determining the company's total economic impact, the company's direct economic impact of \$852.8 million was not used because it unavoidably overstates the company's net impact on the county. This figure is a company cost figure (outlays for wages, benefits, capital expenditures, etc.) and includes the purchases of goods and services produced outside of the county. These out-of-county produced goods and services do not contribute to the economic activity of the county directly and, hence, should be excluded from the company's direct impact. Since it is not possible to exclude the portion of the company's capital expenditures that

do not contribute to county's regional product, the inclusion of the company's total outlays of \$161 million for capital equipment overstates the company's direct impact. For this reason we relied upon our model's estimate of the company's direct economic impact on the county in determining its total economic impact.

As last year, the economic impact of the Upjohn Company was generated using a 463 industrial-sector input/output model conjoined with a 53 industrial sector simulation and forecasting model. Unlike in previous years, this year's impact estimates are comparable to those of the year before.