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Total Economic Impact of The Upjohn Company
on Kalamazoo County, 1988

by

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The total economic impact of the Upjohn Company on Kalamazoo County can be broken down into two components: direct and indirect. The direct impact of Upjohn on Kalamazoo County is measured either by the number of its employees working in county (8,417 in 1988) or the total wages and salaries paid to its county employees (\$330.4 million), plus total dividend payments to county residents (\$6.2 million).

Upjohn's indirect economic impact, likewise, can be measured in jobs or in area income. Upjohn's indirect employment impact includes workers employed by its suppliers located in Kalamazoo County and individuals employed in firms which depend upon the consumer expenditures of Upjohn employees. Indirect income includes the earnings of these workers. However, the indirect impact is more than this; it also measures the third, fourth, and higher order employment and income effects of Upjohn on the county. For example, Upjohn's indirect employment impact also 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 direct, indirect and total economic impacts of the Upjohn Company on Kalamazoo County, as measured in jobs or area income, are shown in Table 1.

TABLE 1
DIRECT, INDIRECT AND TOTAL ECONOMIC IMPACTS
OF THE UPJOHN COMPANY ON KALAMAZOO COUNTY

	DIRECT	INDIRECT	TOTAL
Jobs.....	8,417	10,188	18,605
Income*.....	\$336.6	(millions) \$255.5	\$592.1

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

As shown, the total economic impact of Upjohn on Kalamazoo County with respect to jobs is the sum of the direct effect (8,417 Upjohn Company employees) and the indirect effect (10,188 jobs created outside the company) for a total of 18,605 jobs. Similarly, the total economic impact of Upjohn on Kalamazoo County with respect to income is \$592.1 million, the sum of the \$336.6 million of direct income to Upjohn employees and county stockholders, plus the \$261.7 million of income created outside the company.

The Upjohn Company, by itself, accounts for 7.0 percent of the county's total employment (including self-employed individuals and agricultural workers) and 9.7 percent of the county's total personal income in 1988. In total, however, an estimated 15.4 percent of the county's total employment depends upon Upjohn, directly or indirectly. Furthermore, 17.1 percent of the county's total personal income is directly or indirectly dependent upon the Upjohn Company.

Often these total impacts are stated as ratios with respect to the direct jobs or income, generally known as employment or income multipliers. Upjohn's employment multiplier is 2.21 (18,605/8,417), meaning that each Upjohn job creates 1.21 other jobs locally, while the income multiplier is 1.76 (\$592.1 million/\$336.6 million), meaning that every dollar of income at Upjohn adds another 79 cents of income locally.

Methodological Notes

This year's employment and income multiplier estimates are slightly higher than last year's multiplier estimates and are not comparable, due to significant upgrading of our regional modelling capabilities. In 1987, Upjohn's employment multiplier was estimated to be 1.88 and its income multiplier, 1.59. This past year the Upjohn Institute obtained a new regional simulation and forecasting model which contains a 463 industrial-sector input/output model conjoined with a new 53 industrial sector simulation and forecasting model. In previous years, the estimates were carried out on a much smaller 14 industrial-sector model which did not include a detailed input/output component.

In preparing the 1988 estimates of the indirect and total impacts of Upjohn on Kalamazoo County, care was taken to avoid double-counting and other possible errors. Annually, the Upjohn Company reports its measures of direct economic impact on Kalamazoo in its 1988 Facts and Figures, which are shown in Table 2.

There is a significant overlap between the direct effect that is presented in Table 2 and the indirect effect shown in Table 1. Specifically, Upjohn's \$125.8 million in expenditures on goods and services produced in Kalamazoo County is a significant share of the company's indirect effect, as the production of these goods and services generate new jobs and income in the county.

TABLE 2
 THE UPJOHN COMPANY IN KALAMAZOO COUNTY
 1988 FACTS AND FIGURES

Wages, Salaries, estimated fringe benefits, and development program.....	\$465.9
Taxes (local).....	15.6
Dividends.....	6.2
Capital Expenditures.....	135.0
Goods and Services ¹	125.8
Contributions.....	2.6

I continue to recommend that Upjohn maintains the current method of reporting direct spending because these expenditures are generally based on verifiable data, whereas my estimates are approximations.

¹Includes auto rentals, hotels, air travel, and airport fuel flowage fees within total goods and services.

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ADDENDUM TO THE

Total Economic Impact of the Upjohn Company

on Kalamazoo County, 1988

In previous reports prepared by the Upjohn Institute on the economic impact of the Upjohn Company on Kalamazoo County, a total impact estimate was given. In 1987, for example, the estimated total economic impact of the Upjohn Company was \$1.0086 billion. These estimates were determined by taking the direct economic impact reported in Upjohn's Facts and Figures statement and subtracting the amount of purchases of goods and services from county firms. This figure is added to an indirect impact generated by our computer model to derive the total economic impact of Upjohn.

Using the same methodology for 1988, the total economic impact of the Upjohn Company on Kalamazoo County is estimated to be \$1.33 billion as shown below.

	Millions
Direct Economic Impact (Source: <u>1988 Facts and Figures</u>)	\$751.1
- Purchases of Local Goods and Services	- 125.8
Adjusted direct economic impact	<u>\$625.3</u>
Indirect Economic Impact (Institute's Regional Model)	+ 704.1
TOTAL ECONOMIC IMPACT	\$1,330.1

This estimate is fairly difficult to interpret because the direct economic impact is a company cost figure (outlays for wages, benefits, capital expenditures, etc.) while the indirect economic impact is a sales figure (estimated sales of other local firms contributed to Upjohn's presence in the county). Even if the direct impact is considered an estimate of the value added generated by Upjohn in the county, it is still not comparable to the indirect economic impact, since indirect impact

Addendum - Total Economic Impact - 1988
Upjohn Company on Kalamazoo County

estimates total sales (value added plus cost of materials) of area firms excluding Upjohn.

Because of the above definitional problem, the total economic impact estimate was excluded in this year's final report. In addition, as mentioned in the final report, the 1988 estimate of the total economic impact is not comparable to 1987's since an improved, more detailed model was used.