

# Understanding and Misunderstanding Retail Multipliers

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December 2009

## Background

Iowa's retailers are counting on decent holiday sales to carry them through a brutal recessionary year. Merchants and economic development officials often talk about a "multiplier effect" to be associated with local sales or local job generation. It is commonly assumed that local sales multiply-through the local economy in a predictable and robust manner. Another word for this is dollar-turnover. That is, a multiplier implies how many times a given dollar spent in an economy literally turns-over or otherwise results in other local transactions. That over-simple assumption, however, misses the crux of retail multipliers and their overall value to local economies and to the state overall.

Multipliers are a bit tricky to understand, and they do not reduce to basic rule of thumb conclusions about their value, whether in a rural area, a metro area, or at the statewide level. It is not surprising that many folks misunderstand or mischaracterize them. This exercise is intended to assist planners and community boosters to understand the statewide multiplier values of different aspects of retail sales.

## Some Basic Terminology

Let's begin with a local transaction of some kind, not necessarily a retail one. It can be farm, manufacturing, retail, or service sector sales, as examples. There are two ways those sales have a multiplier effect locally. The first is when the selling or what we also call the **direct sector** that I just listed buys inputs locally, whether they are raw commodities, transportation goods, or business services. Because their sales link to regionally-provided supplies, those firms have a mutual dependence upon one-another. Jobs in the supplying sectors depend in part on the level of sales in the sectors that they supply. All of these suppliers are called the **indirect sector**.

The second way that our group of businesses has a multiplier effect happens when the workers in those industries, plus the workers that they indirectly support in the supplying industries, take their paychecks and convert them into household purchases regionally. In so doing, they induce another round of job creation and local sales as those paychecks buy goods and services to satisfy household consumption needs. We call these activities the **induced sector**.

When we add all of these sectors together we get the **total economic value** of activity associated with the industry that we are interested in, whether it is farming, manufacturing or retail trade. The ratio of the total economic activity to the direct economic activity is the multiplier. We produce multipliers for

each particular industry based on its unique relationship to regional suppliers and the ability of its workers and its supplying sector workers to induce additional regional sales. Separate multiplier values are produced from total sales, labor income, and for jobs, as common examples. There is, in short, more than one multiplier.

Multipliers for retail activity are some of the most misunderstood among all industrial types. There is a common conclusion that they are quite robust when, in fact, they are quite weak. We read reports occasionally in which a consultant, a university researcher, or a trade group will claim that a dollar's worth of state or local retail sales results in at least another dollar's worth of sales in the local economy. The implication is that there is at least a multiplier of 2.0 to be attached to retail activity.

Let's investigate the probability of our hypothetical 2.0 multiplier occurring in the state of Iowa. To do that we need to first characterize the components of a traditional dollar (or \$1,000 or \$1,000,000) in sales.

First, when you are buying something at the retail level, the product you are purchasing was manufactured and transported to you, not created on-site. Therefore, a large part of that initial dollar has to pay for the good to be sold. That money must immediately leave the retail economy and be counted in the industries where the actual production and distribution took place. The merchant has purchased the good, or to put it another way, this purchase makes the merchant whole for the goods that she purchased and is selling. The cost of goods deficit has been satisfied. There is therefore yet to be any more money or output generated in the economy.

Second, all retailers purchase inputs from regional suppliers. They buy, as examples, shop space, utilities, professional services, and advertizing. This does leave money in the local economy in so far as those inputs are supplied by local firms. Last, all retailers must pay themselves and their help, who of course spend their paychecks regularly.

So our initial retail sale has a potential impact in the selling sector, that is, our store merchant, and impact for suppliers, and an impact for all of the other stores that take care of workers' household needs.

### **Retail Multipliers**

To measure our retail multipliers for Iowa, \$ 1 million of retail sales were spread equally across 11 retail sectors in an input output model of the Iowa economy using 2008 data.\* Of that \$1 million in purchases by Iowa householders, these are some of the direct data – the economic information to be associated with our retail firms:

- \$671,182 represented the total estimated cost of goods that were sold,
- The firms required collectively another \$108,244 in goods and services that would be counted as overhead,
- They made \$220,574 in payments to value added, of which payments to all labor, including the store owners, were \$147,327, and
- Those sales required 6 jobs.

We can run all of this information through the 2008 Iowa input output model to determine what would be the expected state level multipliers for this combination of retail activity. The first impact that we look at, then, is the total number of indirect activity supported in Iowa. Above, it was noted that our retailers needed \$108,224 in total inputs. That model found:

- \$71,300 in Iowa supplied goods and services output was generated from our retail firms,
- Those firms needed 6/10<sup>th</sup> of a job to supply those services to our 11 retail types, and
- \$23,600 in labor income was paid to that fraction of a job.

Now we need to look at the induced or household impacts. Our combined retailers needed 6 jobs to sell a \$1 million in goods, and the supplying sector boosted that by 6/10<sup>th</sup> of a job. Their combined labor incomes were \$170,927. Accordingly, those first two rounds of economic activity induced:

- \$116,731 in total output in Iowa's economy,
- Providing \$34,905 in labor income to
- 1.1 jobs

Coming up with all of our relevant multipliers requires simple addition. Our \$ 1 million in sales at the household level resulted in:

- $\$71,300 + \$116,731 = \$188,042$  in additional economic output in Iowa. The multiplier to be assigned to a dollar's worth of retail sales (as measured at the cash register) for the state of Iowa is **1.188** ( $\$ 1 \text{ million} + \$.188042 \text{ million}$ ). Every dollar that you spend results in \$.188 in industrial output (mostly sales) in the rest of the economy.
- $6 \text{ direct jobs} + 6/10^{\text{th}} \text{ indirect jobs} + 1.1 \text{ induced jobs} = 7.7 \text{ jobs}$ . The jobs multiplier from \$1 million in retail is  $7.7 / 6 = \mathbf{1.28}$ .
- $\$147,327 \text{ in direct labor income} + \$23,600 \text{ in indirect labor income} + \$34,905 \text{ in induced labor income} = \$205,829$ . The labor income multiplier is  $\$205,829 / \$147,327 = \mathbf{1.40}$ .
- The average labor income for all jobs is **\$26,731**.

It is evident that the sales multiplier of 1.188 is nowhere near the sometime-assumed value of 2.0, or even the more conservative, but still common assumption of 1.5. Just \$.188 in additional output occurs in the state of Iowa as a consequence of a \$1 worth of retail sales at the cash register. In addition, these values were all calculated at the statewide level where linkages among suppliers and consumers are

much more developed. Were the same exercise conducted at the local economy level, the multipliers would all be lower.

There is another way in which we can summarize our \$1 million in household level retail purchases, and it gets us away from depending on multipliers that many people really do not understand well. Per \$ million of retail sales in Iowa:

- \$1.188 million in total economic activity takes place
- Providing \$205,829 in labor incomes
- To 7.7 workers

## Conclusions

Misunderstanding all manner of industrial multiplier is endemic in Iowa ranging from value added agriculture proposals, manufacturing, to retail. There are instances of multiplier hyperbole in every industrial sector. This exercise was designed to help people understand the generally muted multiplier effect retail has on the remaining Iowa economy.

*Additionally: At Iowa State University we have conducted several research investigations of the localized economic impacts of broad-based “buy-local” campaigns. Those research activities look at not just household spending locally, but also the procurement of production goods and services inputs from local suppliers. That research demonstrates clearly that when communities engage in a concerted buy-local effort to stem sales leakages, the local economy can grow substantially. Persons interested in exploring the possibility of a comprehensive buy-local study for their area, to include the whole economy, not just retail, are encouraged to contact the author.*

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\* When we measure retail activity in input-output models, we have to treat retail and wholesale completely differently than other industries. As retail adds no value to a commodity, the cost of goods sold (or purchased) has already been accounted in the economy. To prevent double-counting, national income and product accounts therefore “margin” retail activity. This means that the industrial output of the retail sector only counts its overhead and payment to value added, not the cost of goods sold.

In this exercise, however, this accounting rigmarole has been modified to make the actual multiplier point as it is discussed among economic developers, merchants, and regional boosters. Those persons are not talking about “margined” sales, they are talking about total sales. Accordingly, I have calculated multipliers based on sales totals, which are also called sales at the household level or sales at the cash-register level.