Production Plants as Appropriate Units of Analysis

We used a plant-level productivity analysis to evaluate the performance of mergers and acquisitions. There are two primary reasons for adopting a plant-level approach. First, many times it is impossible to distinguish acquiring firms from selling firms. A buying firm could buy another firm in its entirety, or some of a firm's plants in one or more industries, or single plants. Similarly, a selling firm could sell all or just some of its plants. Finally, a firm can be both a buyer and a seller, buying plants in one or more industries while also selling plants in one or more industries. These various possibilities mean that measures of firm-level labor productivity may differ markedly from plant-level measures, yet only plants are involved in the transactions. A plant-level analysis avoids this problem because the unit of analysis—the plant—is clearly defined.

Second, in cost-driven industries, firm labor productivity is a composite of the productivities of all of its plants, i.e., the average performance of all of a firm's plants. Yet a firm could have plants that perform superbly and others that fare poorly, making some plants more highly valued assets and others less important. Plants, on the other hand, are stand-alone units with no ambiguity over labor productivity, yielding a clear performance measure.

A recent transaction clarifies this point about the importance of a plant-level analysis. ConAgra sold some of its meat and poultry plants, but the company still produces turkeys and some other meat and poultry products and remains an independent company. In our framework, ConAgra is a seller of plants, but it also may be a buyer, and it remains an independent firm.

Plant-level analysis does not ignore the firm. The firm remains the ultimate decisionmaker, with the capacity to shift resources among the industries that it regards most profitable, and always has the option of selling itself completely. This means that, if we want to know whether a merger was a complete or partial acquisition (only one plant or all plants of the firm are sold), all of the plants owned by firms must be evaluated.

Those plants include:

1) plants within a selected food industry, e.g., meatpacking plants;
2) food plants outside the eight industries we examine but that are owned by a firm that produces within one of the eight industries, e.g., a plant that produces candy and is owned by a firm that owns a meatpacking plant; and
3) plants producing nonfood goods but owned by a firm that also owns plants in one of the eight food industries in our study, e.g., plants that produce cans but are owned by a firm that also owns a meatpacking plant.[2]

[2]Census disclosure rules prevented us from disclosing information about partial and complete divestitures (the sale of some or all of a firm's plants); thus, we had to remove all empirical analyses of divestitures from this report.