Packer’s Perspective of Heavier Carcass Weights

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- Overview

The trend to heavier weights is well documented. Like most/all trends, there are solid economic rationale behind the trend with empirical data from the producer, packer, and integrator’s perspective.

But why stop at even the more recent heavy weights? Are there financial reasons to push weights even higher?

The following discussion provides a brief overview of some of the economics, emphasizing the packer's perspective. Two cautions: much of the data has been drawn from both Canadian as well as U.S. sources and may be presented as such. Fortunately economic theory isn’t restricted to borders or languages (or currencies).

Second we must realize the customer/consumer is the final arbitrator in terms of value. We offer the following expression that, in effect, notes the total value consideration of cost, quality, and service.

\[
\text{Value} = \frac{\text{quality} + \text{service}}{\text{Cost}}
\]

- Hog Weight History

Over time weights as measured by almost any metric have risen. Figure 1 depicts the trend with the obligatory OLS line. The reasons for the trend are many, but technology including genetics, pharmaceuticals, management, etc. all has played an important role.
Figure 1. Over time weight have risen???

Hog Weights, Dressed

The USDA weights illustrated above aren’t the only metric that is helpful as well as interesting. What the business is really pursuing is total efficiency, simply defined as:

\[
\text{Efficiency} = \frac{\text{Output}}{\text{Input}}
\]

Where **Output** = total pork tonnage produced; **Input** = number of sows

Adjusting for timing and lining up the data produces Figure 2. Note that the trend line here has an average rise of 3%, more than the simple weight increase of about 1.5%. That’s because this metric includes more than just weight.
The Economics of VOLUME

Firstly let’s look at cost. In any firm including packing plants, costs may be defined as:

Total costs (TC) = Total Fixed Costs (FC) + Total Variable Costs (VC)

The respective definitions are somewhat obvious in those items that vary with volume. For Figure 3, costs were estimated for Canadian plants in the west. Note that unit per head costs are reduced with larger volumes. But also note that most of the economies are achieved at about 30,000 head weekly. The slope of TC is largely dictated by the mixture of fixed and variable costs.
But what about weights as a vehicle for improved returns? The most obvious metric is fixed costs that don’t change with volume. With heavier weights, packers merely add more output to the fixed shackles. Therefore the following savings for volume around 20,000 head weekly with various weights are noted (Figure 4).

Figure 4. Fixed cost savings, Canada, accumulative to base
Finally the net value for the packer at various weights is noted. With the definition of value here, the impact of yields at various weights as well as fixed cost at alternative weights are captured. For this expression the net revenue is noted as:

$$\text{Value} = (\text{Primal yields} \cdot \text{price}) - \text{Cost}$$

**Figure 5. Estimated net value to packer for heavier weights**

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**Summary**

The devil is in the details. But if firms are willing to improve and change, then a compelling economic case for heavier weights can be made. Essentially, plants are forever pursuing improvements, including cost saving projects oriented to efficiencies. For most firms, this is an ongoing process. The notion of increasing output with little change in input costs is a normal part of business.

But we don’t underestimate the challenge to customers and consumers. When product in any form changes, the consumer impact must be considered. That’s why all firms have a sales department. And it’s separate but hopefully related to operations.