

Seasonal Hog Price Patterns

File B2-14

Hog prices have historically shown a somewhat predictable seasonal pattern from month to month that repeats itself annually. Because the pattern is relatively predictable, it can be useful in making production, marketing or pricing decisions.

Seasonal Price Patterns

Two types of information are presented in the seasonal price patterns shown here.

Average Price Index

The first is an average price index for each month. This shows the average relationship of prices in a particular month to the average for all months in the years included in the index calculation. The index primarily reflects the seasonal variation in price, since the calculation procedure eliminates most of the price variation caused by other factors.

Variability Factor

The other kind of information presented is a variability factor that provides an indication of the reliability of the price index for a particular month. It is based on the variability of prices for a given month during the years included in the index calculation. Specifically, the points on the charts that are above and below a particular monthly index indicate the range where the index for that month could be expected to fall 68% of the time. The 68% range statistically represents the average plus or minus one standard deviation.

Use Figure 1 as an example. The February seasonal index value is 95, and the variability range is as high as 106% or as low as 85% of the annual average. Historically, prices fall in this range approximately two-thirds of the time. The smaller the variability factor (the closer the points are to the index value) the more reliable the monthly index is. Later in this article we describe how to use the seasonal index to forecast prices.

Patterns by Type of Hogs

The following material presents information on seasonal price patterns for various classes and types of hogs, as well as an indication of the reliability of these patterns from year to year. Different hog classes have somewhat different seasonal price patterns.

The figures in this report reflect the monthly average indexes with the variability range indicated by points above and below the index values. Actual monthly index numbers and the variability factors are shown in Table 1.

Barrows and Gilts

The seasonal price index of monthly average prices for barrows and gilts for the Iowa/Minnesota market area is presented in Figure 1. On average, for the 2010-2019 period, prices were below the yearly average during the months of January through March and September through December. They were near average in April and above average May through August. Variability was the widest in March, April, and July through October.

Supply factors - Tendency for prices to show seasonal weakness during the fall and winter, results in part from larger pork production during these periods than during the summer months. Although sow farrowings are more evenly distributed throughout the year, hog slaughter remains largest in the fourth quarter than in the other months of the year.

Demand factors - Seasonal price variations may also be influenced by changes in consumer demand for particular fresh and processed cuts of pork and by seasonal tendencies of pork processors to either place pork into cold storage or to reduce inventories. Demand for hams, for example, tends to be strong prior to the Christmas and Easter holidays and is usually weaker in the summer months. However, demand for fresh pork

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cuts is typically stronger in the fall and winter months. There is often net movement of pork into cold storage during the fall and late winter when supplies are seasonally large and prices are more likely to be under pressure. Net out-movement from storage is more likely in the late spring and summer as prices trend up seasonally.

Sows

Prices for cull sows sold for slaughter show a somewhat different seasonal pattern than barrows and gilts, as shown in Figure 2. Prices trended upward in the summer, then declined in the fall. Prices were above average for the year from April through August and again in November. They were at or below the annual average during the remaining months. Highest prices were later in the summer (specifically August), and lowest prices were in January.

These seasonal price tendencies are influenced in part by changes in the volume of sows slaughtered in different time periods, as well as by seasonal differences in total slaughter and production of pork. The actual price differential between barrows and gilts and sows is normally narrower during the fall and wider in the summer when barrow and gilt prices increase.

Feeder Pigs

Prices of 40 pound feeder pigs show fairly strong seasonal variation (Figure 3). On average during the 2010-2019 period, prices were above average January through May and again in December. Prices declined seasonally from April through September. Prices were below the annual average in the summer and fall. Stronger prices in the spring reflect expectations that there will be seasonal summer strength in slaughter hog prices for feeder pig finishers. By contrast, relatively low feeder pig prices during the summer result from expectations of seasonally low slaughter hog prices during the fall. The wide variability in feeder pig prices – almost a 60 percentage point swing from March to September – is due to feeder pig demand being driven by expected profits, which are

influenced by corn prices and expected hog prices and are susceptible to wider fluctuations than the finished hog market.

Weaned Pigs

Prices of weaned pigs, approximately 10-12 pounds, also exhibit a strong seasonal pattern (Figure 4), but with the high coming earlier in the year. On average during the period, prices were above average January through April and again November through December. Prices declined seasonally from February through August. Prices were below the annual average in the summer and early fall. Stronger prices in the early spring reflect expectations that there will be seasonal summer strength in slaughter hog prices for pig finishers. By contrast, relatively low weaned pig prices during the summer result from expectations of seasonally low slaughter hog prices during the fall. The price variability is not as wide as that of 40 pound pigs, being less than 50 percentage points from seasonal high to low.

Causes of Seasonal Patterns

Seasonal price changes can result from changes in the supply of hogs and pork, changes in the demand from consumers for pork products, or some combination of these factors. Seasonal variations in sow farrowings and hog slaughter are less pronounced now than they were in earlier years. With more of the production from larger commercial operations, sow farrowings are more evenly distributed throughout the year, but the fourth quarter remains the largest period of hog slaughter. In spite of changes in facilities and production practices, there is still enough month-to-month variation in production to bring significant seasonal changes in price levels. Consumer demand for pork and for particular products also varies somewhat from one period of the year to another.

Changes In Seasonal Patterns

Seasonal price patterns may change over time if there are changes in production technology, industry structure or other factors that affect

production patterns or demand. In addition, prices in any given year may differ from the seasonal pattern due to changes from the norm. Some examples are extreme weather conditions, unusual feed price relationships, and demand factors such as short-term export opportunities. While the geographical point of the market, such as Iowa and Southern Minnesota, is not the same for all areas, the general price trend will be similar in other regions.

Forecasting Hog Prices

The seasonal price patterns or indexes can be used very easily by producers to forecast hog prices. Because the patterns are predictable, they provide a reasonably accurate forecast of what prices will do. To use the index, divide the current monthly average market price for barrows and gilts by the current month's index, and then multiply that result by the future month's index to get a forecast of that future month's price.

$$\frac{\text{Current Price}}{\text{Current Month Index}} \times \text{Future Month Index} = \text{Forecast Price}$$

This forecast of selling price could be used when bidding on feeder pigs or when determining whether to hedge pigs at the current futures market price. For example, if the resulting forecast price is below the observed futures price adjusted for basis, the producer may choose to hedge at the existing futures price.

Similar procedures can be used for feeder pigs and cull sows by using the appropriate index numbers for each of those classes of livestock. It is important to note that this is for average prices during the month and not a specific price within the month. The monthly indexes can be used as indicators of the most likely trend in prices over the next few weeks or months. The variability factors can then be used to make some further judgment about the probability of prices being close to the level indicated by the index. The actual conditions in any given year need to be considered, however, in using seasonal indexes.

The usual pattern could be altered by a turnaround in the hog production cycle or by some other development. A shift from expansion to cutback, for example, might temper or eliminate the normal fall price decline in a particular year.

Evaluating Pricing Alternatives

In addition to forecasting, a producer can use seasonal price indexes to evaluate forward pricing alternatives. If a producer with barrows and gilts to sell in October observes a futures price adjusted for basis of \$65 for October delivery, and his/her forecast using the seasonal price indexes projects barrow and gilt prices for October to be \$62, then the forward pricing opportunity would be more profitable than staying in the cash market, provided the forecast is correct.

Probability of Hog Price Changes

The actual pattern of short-term price movements over a period of years is another potentially useful guide to seasonal price changes. *AgDM Information File B2-15, [Hog Price Changes by Two-Week Periods](http://www.extension.iastate.edu/agdm/livestock/pdf/b2-15.pdf)*, www.extension.iastate.edu/agdm/livestock/pdf/b2-15.pdf, summarizes information on price changes of slaughter barrows and gilts by two-week periods throughout the year. The percentage of years that prices increased and decreased in the observed period provides an indication of the probability of particular short-term price movements. The average percentage increase or decrease gives some idea of the possible magnitude of price change. For example, the data indicate there is a high probability that prices will decrease between the third week of December and the first week of January. But there is a high probability of price strength from the third week of January to the first week of February.

This information can be especially useful in decisions about the weight at which hogs should be marketed at a particular time. It can help with decisions on whether to market a bit lighter than normal or to carry hogs an additional week or so before marketing.

Figure 1. Barrows and Gilts (IA-Southern Minnesota) Seasonal Price Index, 2010-2019

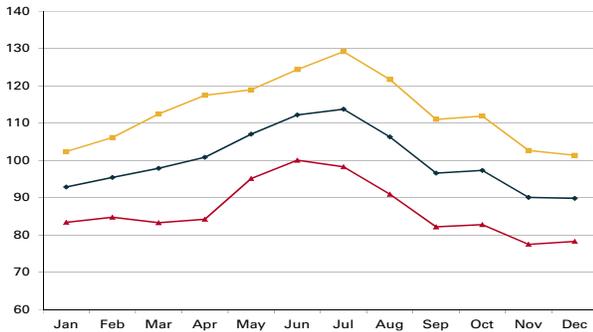


Figure 3. 40 Pound Feeder Pigs Seasonal Price Index, 2010-2019

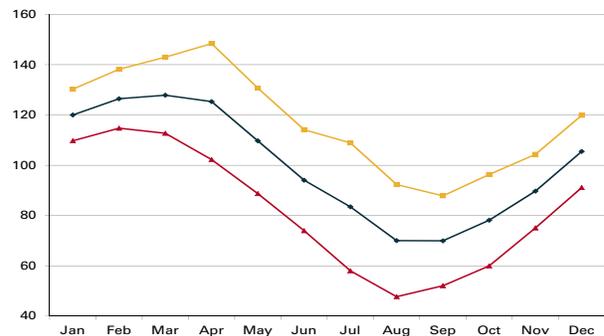


Figure 2. Sow (National) Seasonal Price Index, 2010-2019

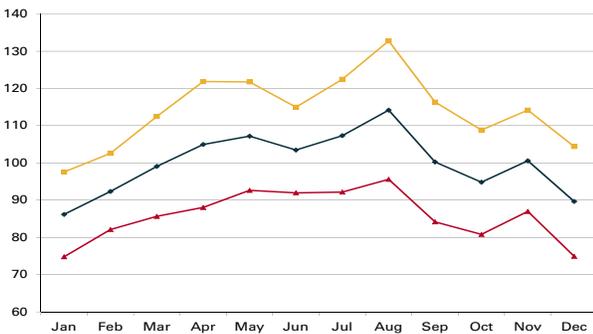
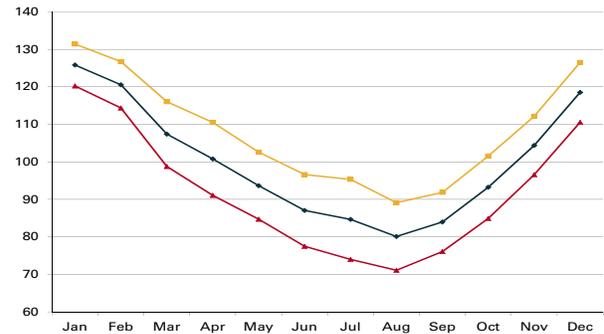


Figure 4. Early Weaned Pigs Seasonal Price Index, 2010-2019



◆ Price Index ■ Plus 1 Standard Deviation ▲ Minus 1 Standard Deviation

Table 1. Price index variability by type of hogs

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Barrows & Gilts (Iowa-Southern Minnesota)												
Seasonal Price Index	93	95	98	101	107	112	114	106	97	97	90	90
Variability	9.5	10.7	14.6	16.6	11.9	12.1	15.4	15.4	14.4	14.5	12.6	11.5
Sows (National)												
Seasonal Price Index	86	92	99	105	107	103	107	114	100	95	101	90
Variability	11.4	10.2	13.4	16.9	14.6	11.5	15.2	18.6	16.1	14.0	13.6	14.7
40 Pound Feeder Pigs												
Seasonal Price Index	120	126	128	125	110	94	83	70	70	78	90	105
Variability	10.3	11.7	15.2	23.1	21.0	20.1	25.5	22.3	17.9	18.2	14.6	14.4
Early Wean Pigs												
Seasonal Price Index	126	121	107	101	94	87	85	80	84	93	104	119
Variability	5.6	6.2	8.6	9.7	8.9	9.6	10.7	9.0	7.9	8.3	7.8	8.0

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