

# Interpretation of the USDA Quarterly Hogs and Pigs Report

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# Interpretation of the USDA Quarterly Hogs and Pigs Report

*This publication is designed to help market and research analysts, educators, pork producers or other market participants understand the USDA Quarterly Hogs and Pigs Report, how inventory numbers are analyzed and affect market prices, and how pre-release trade estimates influence interpretation of the report. It also includes topics such as seasonality and trends that have been occurring in hog inventory numbers. The paper ends with a brief discussion of the Canadian hogs and pigs report and its implications for market price changes in the United States. Please note that although this paper focuses solely on USDA's Quarterly Hogs and Pigs Report, it is not the only determinant of market hog prices.*

The Quarterly Hogs and Pigs Report published by USDA's National Agricultural Statistics Service (NASS) provides survey-based estimates of the total swine herd inventory in the United States. The report is released at 2 p.m. Central Time on Friday near the end of March, June, September and December (the first month of each quarter) and presents inventory data as of the first day of the month of release and for previous and future quarters. For example, the March Quarterly Hogs and Pigs Report provides the March 1 inventory estimates, as well as information for the December to February, March to May, June to August, and September to November quarters. NASS's calendar of release dates for the Hogs and Pigs Report and other NASS publications are available at <http://www.nass.usda.gov/Publications/index.asp>.

The report provides quarterly inventory estimates for the 17 major hog producing states that account for nearly 95 percent of the total U.S. inventory. These states include Arizona, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas and Wisconsin. The report also aggregates the remaining 33 states (labeled Oth Sts) to comprise the U.S. total. State and national figures are reported for the breeding herd, market hog inventory (by weight category) and farrowings data (sows farrowing, pigs per litter, pig crop and farrowing intentions). The Quarterly Hogs and Pigs Report can be accessed directly from USDA's Web site at <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1086>.

The data reported in Hogs and Pigs is collected through a random sample of approximately 9,300 U.S. pork producers by state (Quarterly Hogs and Pigs Report, March 2007). NASS uses a list of known pork producers from the NASS list frame as well as using an area frame (two frames are used for a more complete

list of producers) to configure their sample. The operations from the frames are then stratified based on size of the operation. Each size category is then systematically sampled to insure producers in each size category are included in the survey. The NASS state data are then aggregated into the complete U.S. Hogs and Pigs Report.

The report disaggregates the All Hogs and Pigs inventory number into the breeding herd and market hog categories. These two categories are then subdivided further to include a range of weight groups of market hogs and data reflecting breeding, farrowing and production efficiency in the breeding sector. This data provides valuable information to pork producers, grain producers and feed processors, meat packers and processors, commodity traders, exporters, warehouse and storage companies, retailers, analysts, traders, and others in the industry. The inventory data in the report provides one of the most comprehensive, publicly available estimates of current and future hog supplies. With knowledge of typical carcass cut-out ratios, estimates of pork supplies can be made with the Hogs and Pigs Report data. Market participants use this current and future supply information to anticipate price changes and position their business operations accordingly. For example, an increase in market hog inventory would indicate future increases in hog slaughter and pork supplies. This would cause prices to decrease, everything else held constant. Producers might react to this information by reducing farrowing intentions or using some type of risk management tool to hedge against declining prices. Packers and processors would make plans to increase capacity through additional operating hours, etc. Market analysts can use the information in the report related to breeding herd inventory and average litter size to make long-term price forecasts based on expected expansions and contractions in pork production.

## Explanation of Pre-Release Estimates

Many hog market participants and analysts use private information and knowledge of previous Hogs and Pigs data to forecast inventory numbers and subsequent price moves before NASS releases the report. Dow Jones Newswires and other financial and market reporting services typically publish these pre-release trade estimates from key industry analysts approximately one week before the USDA-NASS report is released. These pre-release estimates are used to form price expectations, which are then bid into hog prices before the actual report is released. Thus, the market's response to a report is often relative to the average pre-release estimate. Market reactions fol-

lowing the report reflect differentials between the actual reported numbers and the industry's expectation. The market impact of the pre-release estimates will be discussed in more detail throughout this publication.

There have been a number of studies conducted concerning the value of the information provided by NASS's Hogs and Pigs Report versus that of private information. Collin and Irwin found that futures market prices do bid in expected information regarding the supply of hogs before the report is released. They also found that the market does respond to unanticipated information offered in the report. Similarly, Mann and Downen as well as Aradhya et al. concluded that the report does contain

information not forecasted prior to the report's release. To address the issue of expected and unanticipated information, this publication includes an explanation of how pre-release estimates are interpreted and affect the market and how the market moves after the Hogs and Pigs Report is released relative to pre-release estimates.

## Overview of the Report

The Quarterly Hogs and Pigs Report contains all of the data for the United States for the quarter just ended, as well as quarterly data for the previous two years. *Table 1* shows the first tables presented in the Hogs and Pigs

**Table 1. Hogs and Pigs Inventory, March 1, 2007, Hogs and Pigs Report**

<i>Hogs and Pigs: Inventory Number by Class, Weight Group, and Quarter, United States, 2005-2007<sup>1</sup></i>						
<i>Item</i>	<i>Number</i>			<i>2007 as % of</i>		
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2005</i>	<i>2006</i>	
	----- 1,000 Head -----			Percent		
<b>March 1 Inventory</b>						
All Hogs and Pigs	59,699	60,326	61,103	102	101	
Kept for Breeding	5,941	6,025	6,081	102	101	
Market	53,757	54,301	55,022	102	101	
<b>Market Hogs and Pigs by Weight Groups</b>						
Under 60 Pounds	19,667	19,988	20,265	103	101	
60-119 Pounds	13,087	13,006	13,086	100	101	
120-179 Pounds	11,360	11,434	11,423	101	100	
180 Pounds and Over	9,644	9,874	10,248	106	104	
<b>June 1 Inventory</b>						
All Hogs and Pigs	60,732	61,687				
Kept for Breeding	5,977	6,060				
Market	54,754	55,627				
<b>Market Hogs and Pigs by Weight Groups</b>						
Under 60 Pounds	20,423	20,808				
60-119 Pounds	13,376	13,692				
120-179 Pounds	11,143	11,485				
180 Pounds and Over	9,813	9,643				
<b>September 1 Inventory</b>						
All Hogs and Pigs	61,846	62,914				
Kept for Breeding	5,972	6,079				
Market	55,873	56,835				
<b>Market Hogs and Pigs by Weight Groups</b>						
Under 60 Pounds	20,764	20,708				
60-119 Pounds	13,876	14,231				
120-179 Pounds	11,404	11,685				
180 Pounds and Over	9,830	10,212				
<b>December 1 Inventory</b>						
All Hogs and Pigs	61,449	62,149				
Kept for Breeding	6,011	6,088				
Market	55,438	56,061				
<b>Market Hogs and Pigs by Weight Groups</b>						
Under 60 Pounds	20,055	20,262				
60-119 Pounds	13,524	13,788				
120-179 Pounds	11,293	11,274				
180 Pounds and Over	10,567	10,737				

<sup>1</sup>May not add due to rounding.

Report from the March 2007 report. This table contains three categories (i.e. all hogs and pigs, kept for breeding and market) that will be discussed in the following sections.

### All Hogs and Pigs Inventory

All Hogs and Pigs inventory is an estimate of the total number of hogs and pigs, regardless of purpose (i.e., breeding or slaughter) or size, on the indicated date. All Hogs and Pigs is the sum of the Kept for Breeding and Market inventory numbers. For example, in *Table 1*, the March 1, 2007, Kept for Breeding number of 6.081 million plus the 55.022 million Market number is equal to the All Hogs and Pigs number of 61.103 million (difference may exist due to rounding). *Table 1* also reports percentage changes in the current year's data relative to the same quarter in each of the last two years. These percentage changes from year to year are used to show supply changes and can be used to explain price movements relative to past years. It is generally more appropriate to make comparisons to the same date in previous years rather than previous quarters due to seasonal changes in hog inventories. In *Table 1*, All Hogs and Pigs as of March 1, 2007, is reported to be 102 and 101 percent of 2005 and 2006 inventory, respectively. This means that the 2007 inventory is 2 percent higher than 2005 and 1 percent higher than in 2006. A 2 and 1 percent increase in inventory numbers would be slightly bearish to the hog market as more supply suggests lower prices. Conversely, a decrease in All Hogs and Pigs inventory number generally indicates tighter supplies and translates into higher prices.

#### Reaction Relative to Pre-Release Estimates

In addition to comparing current-year numbers to previous years to understand impacts on future prices, it is also important to compare the actual numbers (i.e., the numbers in the report) to average pre-release trade estimated numbers. For example, if the pre-release estimates surveyed and averaged by Dow Jones Newswire predicted that the All Hogs and Pigs number would be larger (say 102 percent of a year ago) and the number reported by NASS is lower (say 98 percent of a year ago), prices would increase and the reported number would be considered bullish. The reason prices would increase following the report's release is because traders would have sold Lean Hog futures contracts ahead of the report in anticipation of a future supply increase. When the report shows less inventory than expected, these short positions are reversed. The amount prices would increase or decrease varies by the amount the pre-release estimates differed from the reported numbers. Contrarily, if the average pre-release estimate was for a lower supply number than a year

ago and the report showed the opposite, prices would decrease because supplies were larger than expected. If pre-release estimates closely reflect actual numbers, there will be little market impact. *Table 2* summarizes the relationship between the actual and estimated numbers.

**Table 2. Market Reaction to All Hogs and Pigs Number**

<i>Reported All Hogs and Pigs Number Relative to the Average Pre-Release</i>	
<i>Trade Estimate</i>	<i>Market Response</i>
Larger	Bearish
Same	Neutral
Smaller	Bullish

### Seasonal Trends

Due to technology and the efficiency in the breeding and finishing sectors of the pork industry, seasonal patterns in hog inventories have been reduced in recent decades. However, some seasonal trends are still evident. *Figure 1*, from the March 1, 2007, Quarterly Hogs and Pigs Report, shows that swine inventory is seasonally lowest in March and highest in September. *Figure 2* shows that the majority of sows farrow in the spring and summer months and the number of sows farrowed decreases from June to December (Quarterly Hogs and Pigs Report, March 2007). Since market hogs can be finished to slaughter weight in approximately six months, it can be concluded that those farrowed in the early spring and summer months would be slaughter-ready in the early fall and winter months. Quarterly slaughter data indicates that fewer barrows and gilts are slaughtered from April through September, while more are slaughtered from October through March. Therefore, with more hogs coming into the production cycle from March through June, inventories will increase over the next six months. They exit inventory as slaughter hogs in October through December.

#### Kept for Breeding (Breeding Inventory)

The Kept for Breeding, or Breeding Inventory, category, a subcategory of All Hogs and Pigs, is an estimate of all the sows, gilts (both bred and open) and boars that comprise the breeding stock. As of March 1, 2007, 6.081 million hogs comprised the breeding herd (*Table 1*). This quantity was 102 and 101 percent of 2005 and 2006 March 1 inventories, respectively. Although this increase may not have an impact on nearby market prices, it is bearish to the deferred hog market, as more gilts are being retained for breeding. This will in turn yield more litters in the future, thus increasing the supply of market hogs that would be readily placed on feed and eventually marketed.

### U.S. Quarterly Hogs and Pigs Inventory March 1

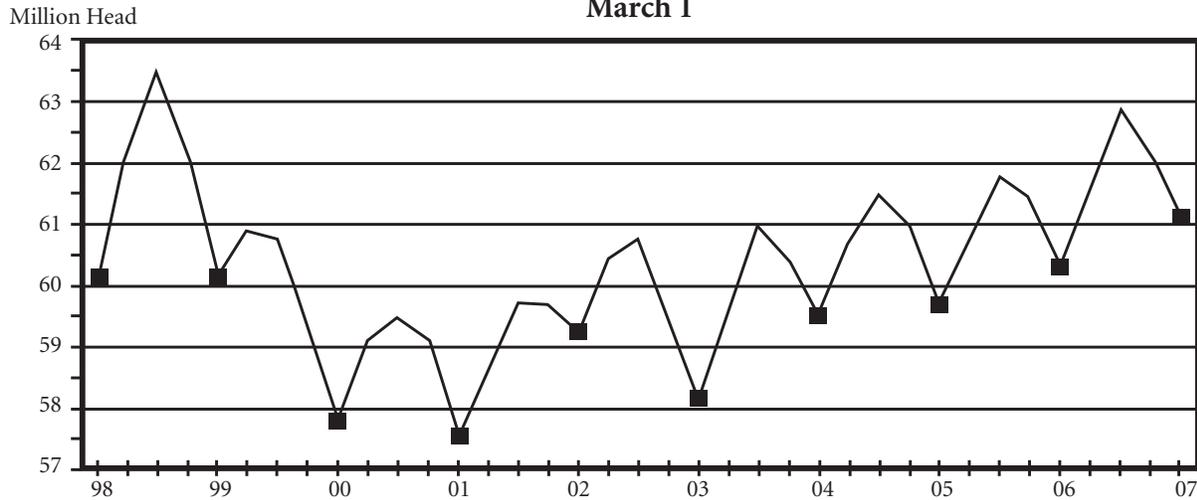


Figure 1. Quarterly Hogs and Pigs Inventory, March 1, 2007, Hogs and Pigs Report

### U.S. Quarterly Sows Farrowed December-February

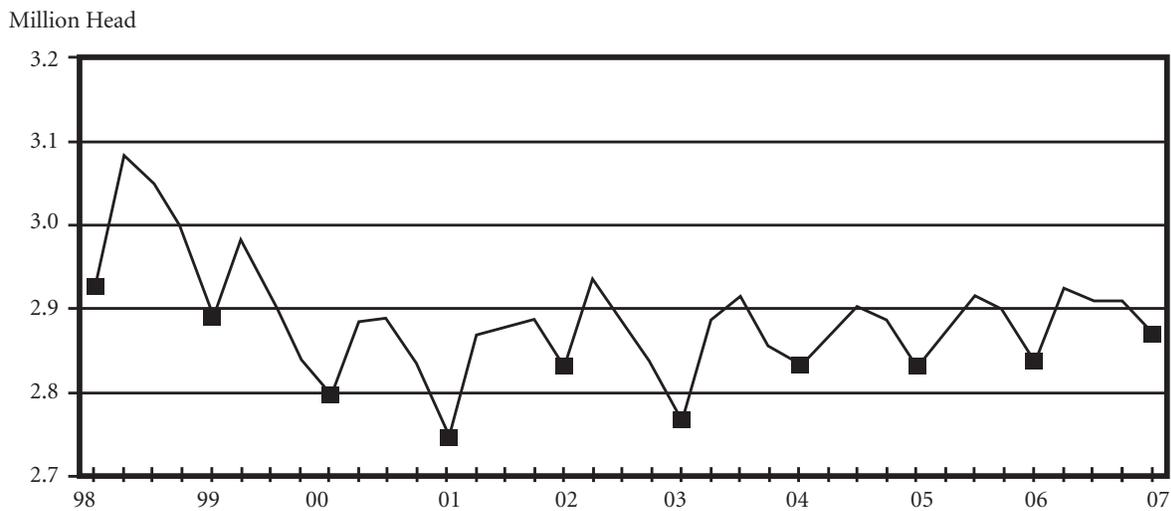


Figure 2. Quarterly Sows Farrowed, March 1, 2007, Hogs and Pigs Report

#### Reaction Relative to Pre-Release Estimates

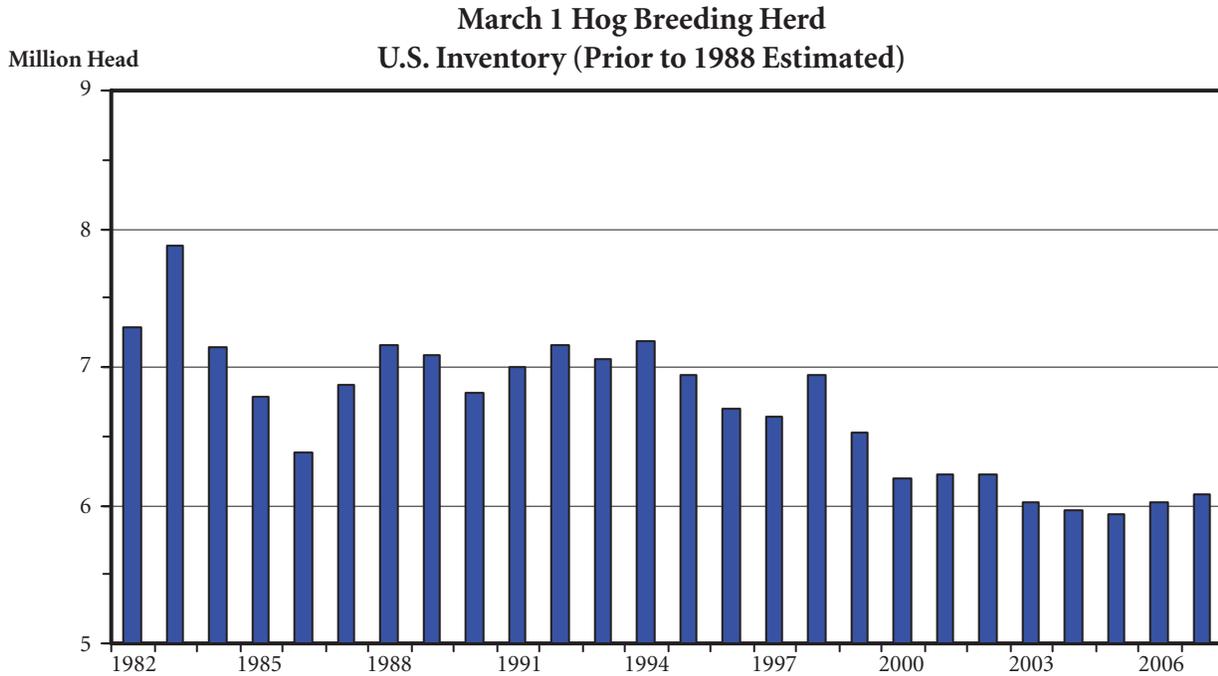
While comparing to previous years' numbers are useful, it also is likely that market price impacts after the report's release may be more attributable to the average pre-release trade estimates. Suppose for example the average of traders' pre-release trade estimates is for the Kept for Breeding number to be larger. If the NASS actual Kept for Breeding number is smaller than the pre-

release estimate, deferred hog prices most likely would increase because future supplies of market hogs would be smaller. A bearish market for deferred months would be more likely if the pre-release average indicated a smaller breeding supply and the actual number showed more breeding hogs. Little to no market impact would be expected if the estimated and actual numbers did not significantly differ from each other.

**Table 3. Market Reaction to Kept for Breeding Number**

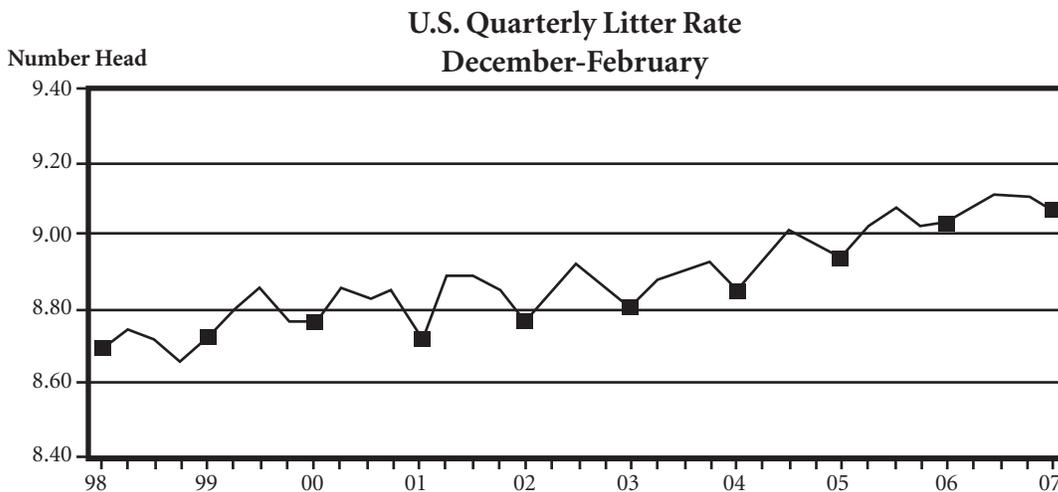
Reported Kept for Breeding Number Relative to the Average Pre-Release Trade Estimate	Market Response
Larger	Bearish in deferred months
Same	Neutral in deferred months
Smaller	Bullish in deferred months

The hog breeding herd has decreased substantially throughout the last two decades (*Figure 3*). Despite the breeding herd decreasing, the number of pigs per litter has increased steadily as shown in *Figure 4*. Further, the number of litters per sow has increased dramatically as well. These changes are due to greater efficiency in reproductive capabilities. Better genetics, coupled with better nutrition, also has been a factor in improving efficiency. With this efficiency, more market hogs and pork are



Livestock Marketing Information Center  
Data Source: USDA/NASS

**Figure 3. Breeding Hog Inventory, Livestock Marketing Information Center**



**Figure 4. Quarterly Litter Rate, March 1, 2007, Hogs and Pigs**

being produced per sow, so a smaller breeding herd produces a relatively stable level of pork production.

## Market Hog Inventory

Another component of the All Hogs and Pigs inventory, Market Hog inventory represents the number of barrows and gilts intended for slaughter (not breeding). The March 1, 2007, market hog estimate of 55.022 million head was 2 percent higher than in 2005 and 1 percent higher than 2006 (*Table 1*). This slightly higher market hog supply would be considered bearish to market hog prices.

### Reaction Relative to Pre-Release Estimates

As with the breeding herd, market analysts and traders form expectations for the Market Hog number in the Quarterly Hogs and Pigs Report and generally bid their expectations into market prices before the release of the report. If the actual Market Hog number released by NASS is larger than the average pre-release trade estimate, deferred and/or nearby hog prices would decline because the supply of market hogs is greater than expected. Then again, if the actual number was smaller than the pre-release number, tighter-than-expected supplies would prompt an increase in market price. *Table 4* summarizes this relationship between the pre-release and report numbers. Note that the Market Hog number impacts both nearby and deferred hog prices because it encompasses all weight categories of slaughter hogs.

**Table 4. Market Reaction to Market Hog Number**

Reported Market Number Relative to the Average Pre-Release Trade Estimate	Market Response
Larger	Bearish
Same	Neutral
Smaller	Bullish

### Market Hogs and Pigs by Weight Category

To better understand and predict where market hog supplies are at in the production process and when they will affect prices, the Market Hog inventory is disaggregated into the following four weight categories: Under 60 Pounds, 60 to 119 Pounds, 120 to 179 Pounds, and 180 Pounds and Over (*Table 1*). Pigs weighing less than 60 pounds will be slaughtered in 120 to 180 days. Those weighing 60 to 119 pounds will reach market weight in about 90 days and those at 120 to 179 pounds will be ready in approximately 60 days. Market hogs weighing over 180 pounds will be slaughtered in the next 30 to

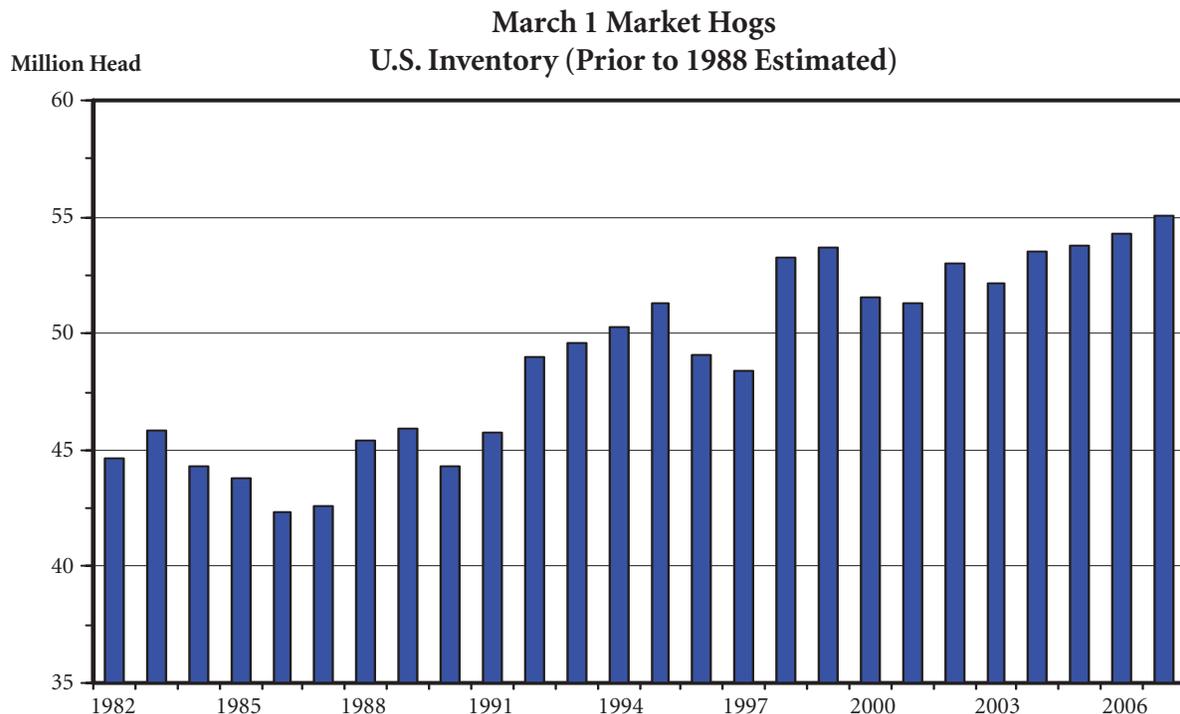
45 days. Because all groups of hogs will reach slaughter weight at different time periods, nearby and deferred markets will be impacted differently according to supply changes in each weight category. For example, an increase in the number of lighter weight hogs (Under 60 Pounds and 60 to 119 Pounds) would cause a downward price movement in more deferred months. This is the result of more hogs being available for slaughter three to six months from the time the report is released. Opposite of this, a decrease in heavier weight hogs (120 to 179 Pounds and Over 180 Pounds) would impact nearby markets more, causing nearby hog prices to increase, as less supply would be available in the next one to two months. Furthermore, if the number of heavier market hogs were larger relative to lighter weight hogs, price would simultaneously decrease in the nearby months and increase in the deferred months. It also is important to note that if hogs are marketed at heavier weights than normal, pork supply will increase and prices will decrease. Pre-release estimates also are available for each weight category included in the quarterly report. The market reaction relative to the average pre-release estimate is interpreted the same as for aggregate market hog inventory.

Throughout the last 20 years, there has been a steady increase in the quantity of market hogs available for slaughter (*Figure 5*). This is partially due to the fact that litter sizes have increased, as mentioned before. The increase also can be explained by better genetics and more efficiency in feeding.

### Slaughter as a Percentage of Market Hog Inventory and/or Pig Crop

Historical relationships between slaughter and either market hog inventory or pig crop<sup>1</sup> can be used to forecast future hog slaughter levels. Although slaughter as a percentage of the market hog inventory is not actually reported in NASS's Hogs and Pigs Report, it can be calculated by dividing the two successive quarters of hog slaughter data by the market hog inventory (from the Hogs and Pigs Report) at the beginning of those two quarters. By knowing the historical relationship between market hog inventory and slaughter, the slaughter level for the next six months can be predicted using that historical percentage and the market hog inventory number from the current Hogs and Pigs Report. For example, the March 1, 2007, market hog inventory was reported at 55.022 million head (*Table 1*). Accessed from another source, the five-year average slaughter as a percentage of market hog inventory, in this example, uses slaughter data from the March through August period for each of the last five years (2002-2006). Each year's slaughter

<sup>1</sup>See pig crop section for further explanation of this specific category.



Livestock Marketing Information Center  
Data Source: USDA/NASS

**Figure 5. Market Hog Inventory, Livestock Marketing Information Center**

data (2002-2006) is divided by its associated March 1 market hog inventory. Each of the calculated percentages (slaughter as a percentage of market hog inventory) for the last five years are then averaged to yield an estimate of 93.9 percent. Thus, March through August 2007 slaughter could be expected to approximate 51.668 million head (55.022 million head times 93.9 percent). Knowing slaughter hog numbers for this time period helps in forecasting prices for market hogs and retail pork. Note that when calculating this ratio, no slaughter data is available in the Quarterly Hogs and Pigs Report; thus, the data must be accessed from another USDA source. A similar ratio of slaughter to pig crop can be calculated by dividing quarterly slaughter numbers by the pig crop from six months prior. Although it can be useful, slaughter as a percentage of pig crop is not as accurate of a measure relative to slaughter as a percentage of market hog inventory due to production issues such as death loss (Schwager, 1984).

### Farrowings

Table 6 shows a table in the Hogs and Pigs Report that represents information related to reproduction and reproduction efficiency. The three categories included in this section of the report are Sows Farrowing, Pig Crop and Pigs per Litter. For each of the three categories, quarterly data are reported (note that the quarters are again

report release months, not calendar quarters). In addition to the current year's data, the two previous years' data are included for the three categories. As before, percentage changes comparing the current year with the two previous years are included.

### Sows Farrowing

Sows Farrowing provides an estimate of the number of sows that previously gave birth or are expected to give birth in the specified time period. It can be used to estimate an expected number of hogs that will be ready for slaughter in the next three to nine months, depending on when farrowing actually occurs. The sows farrowing section includes six different time periods: December to February, March to May, a combination of the two (December to May), and June to August, September to November, and a combination of the two (June to November). (Note these are December numbers from the preceding year.) The December to May number is the sum of December to February and March to May numbers and the June to November number is the total of June to August and September to November numbers. (This is the same for the pig crop and pigs per litter numbers.) The March 2007 report shows that the sows that farrowed in December to February 2007 was 1 percent higher than in 2005 and 2006. This suggests that market hog inventory would increase by about 1 percent in three to six months.

Note that depending on when the report is released, some of the sows farrowing numbers reported include sows that have not yet farrowed, but that producers are intending to farrow. For instance in the March Hogs and Pigs Report, the numbers reported in the March to May and June to August time periods actually are farrowing intentions (Table 6). Farrowing intentions are the number of sows expected to give birth in that future time period. This number is important because it acts as the best indicator for hog supplies farthest in the future. However, it is a number that has variability associated with it because the sows have not yet given birth and production and market price risks may alter farrowing intentions. It is important to remember that farrowing intentions would have the most impact on deferred months. Farrowing intentions are updated and revised when a new report is released. For example, in the June Hogs and Pigs Report, the sows farrowing for the time period of March to May will be an actual number, and an updated intentions number will be reported for the June to August period, as well as a current year estimate for farrowing intentions for September to November.

## Reaction Relative to Pre-Release Estimates

Pre-release estimates from traders and analysts also are available for sows farrowing and farrowing intentions. Pre-release reports generally are available for the sows farrowing for the previous quarter and the farrowing intentions for the next two upcoming quarters. If actual farrowings numbers are lower relative to the average pre-release numbers, market prices for deferred months will increase. This situation is viewed bullish because future supply will be smaller than expected. When pre-release estimates are lower than actual farrowings reported, market prices generally decrease (Table 5).

**Table 5. Market Reaction to Farrowings and Farrowing Intentions**

<i>Reported Farrowings and Farrowing Intentions Number Relative to the Average Pre-Release Trade Estimate</i>	<i>Market Response</i>
Larger	Bearish in deferred months
Same	Neutral in deferred months
Smaller	Bullish in deferred months

**Table 6. Farrowings, March 1, 2007, Hogs and Pigs**

<i>Farrowings: Number of Sows, Pig Crop, and Pigs per Litter, United States, 2005-2007<sup>1</sup></i>						
<i>Item</i>	<i>Number</i>			<i>2007 as % of</i>		
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2005</i>	<i>2006</i>	
	<i>----- 1,000 Head -----</i>			<i>Percent</i>		
<b>Sows Farrowing</b>						
Dec-Feb <sup>2</sup>	2,835	2,840	2,874	101	101	
Mar-May <sup>3</sup>	2,882	2,927	2,913	101	100	
Dec-May <sup>2,4</sup>	5,716	5,767	5,787	101	100	
Jun-Aug <sup>3</sup>	2,918	2,912	2,917	100	100	
Sep-Nov	2,900	2,910				
Jun-Nov	5,818	5,823				
<b>Pig Crop</b>						
Dec-Feb <sup>2</sup>	25,343	25,661	26,084	103	102	
Mar-May	25,986	26,579				
Dec-May <sup>2</sup>	51,330	52,240				
Jun-Aug	26,449	26,518				
Sep-Nov	26,187	26,501				
Jun-Nov	52,635	53,019				
	<i>----- 1,000 Head -----</i>			<i>Percent</i>		
<b>Pigs per Litter</b>						
Dec-Feb <sup>2</sup>	8.94	9.03	9.08	102	101	
Mar-May	9.02	9.08				
Dec-May <sup>2</sup>	8.98	9.06				
Jun-Aug	9.06	9.11				
Sep-Nov	9.03	9.11				
Jun-Nov	9.05	9.11				

<sup>1</sup>May not add due to rounding.

<sup>2</sup>December preceding year.

<sup>3</sup>Intentions for 2007.

<sup>4</sup>Actual farrowings for December 2006–February 2007 plus intentions for March–May 2007.

## Pig Crop

Pig Crop refers to the number of pigs born and saved<sup>2</sup> in a given time period. Again, the pig crop data is reported for the same time periods as the farrowings data. *Table 6* shows the number of pigs born in December 2006 through February 2007 as 26.084 million head and reports that the pig crop is 3 percent greater than in 2005 and 2 percent greater than in 2006. This increase is considered bearish to deferred hog markets as more feeder pigs would be available for finishing and eventually slaughter in future months. A decrease in the pig crop relative to previous years would suggest an increase in deferred hog prices compared to those years.

### Reaction Relative to Pre-release Estimates

Comparing the pre-release estimated and actual pig crop may yield a more precise indication of market price moves in deferred months than comparing year-ago numbers. When the actual pig crop reported by NASS is higher than the pre-release estimate, deferred hog prices generally would decrease because of greater supply than originally expected. However, if the actual pig crop is lower than expected, the lower supply would generally equate to increased prices for deferred months. *Table 7* summarizes these relationships.

**Table 7. Market Reaction to Pig Crop**

<i>Reported Pig Crop Number Relative to the Average Pre-Release Trade Estimate</i>	<i>Market Response</i>
Larger	Bearish in deferred months
Same	Neutral in deferred months
Smaller	Bullish in deferred months

## Pigs per Litter

Pigs per Litter represents the number of pigs born and saved per sow. It is a component comprised of both the pig crop and sows farrowing and can be calculated by dividing the pig crop by sows farrowing for the same time period. Used as an efficiency measure, more pigs per litter represents more supply being produced with the same amount of input (breeding sows). As *Figure 4* shows, the litter rate has increased from years past. This further supports the idea that technological advancements have made the pork industry increasingly more efficient.

<sup>2</sup> Saved refers to the pigs that did not die in the birthing process and are expected to enter into either the market or breeding herd in the future.

## Pigs per Litter by Sizes of Operation

Pigs per Litter is also expressed by size of operation in another table in the Hogs and Pigs Report. Size categories in the report are 1-99, 100-499, 500-999, 1,000-1,999, 2,000-4,999 and more than 5,000 head. The pigs per litter by size of operation depicts the ability and efficiency of different sized operations to produce hogs. Smaller operations tend to have smaller litter sizes and larger operations that are more efficient produce larger litters. Values for both the previous year and last quarter are listed by size categories for the United States.

### State and National Data

In order to give users a better understanding of geographic differences in hog inventories, all the information provided in the Quarterly Hogs and Pigs report discussed earlier is disaggregated by state for the current and three previous quarters. In addition, the final section of the report includes the number of sows farrowing, pigs per litter and the pig crop by month, as opposed to quarterly (when surveyed, producers are asked to report monthly data so this information can be included in the report). This information can be used to understand monthly supply levels and may actually be used to predict prices as discussed earlier with monthly level precision. Because only 17 states are reported individually, the other 33 states are identified as one entry (Oth Sts). Data from the previous year and most current year are provided in these sections of the report (the farrowing section also includes this year's farrowing intentions).

### Revisions

NASS employs the use of a balance sheet that takes into account previous inventory, births, imports, slaughter, exports and death in order to reach an estimate of hog inventory. To ensure accurate data from quarter to quarter, revisions are made to previously reported data and released in successive reports. Report numbers are verified using slaughter numbers and check-off receipts. Every December, the quarterly reports for the year are reviewed. Numbers are reviewed for the final time when the five-year agricultural census information becomes available (Quarterly Hogs and Pigs Report, March 2007).

## Canadian Hogs and Pigs

International trade between Canada and the United States influences hog supplies in both countries. Therefore, to better predict hog supply and its influence on prices, it is important for U.S. market participants also to consider Canadian supply levels. This can be done by us-

ing Canadian supply information only or a combination of supply estimates from Canada and the United States.

Statistics Canada provides a quarterly publication, called Hog Statistics, that reports the hog and pig supply for the past seven years in addition to the current year. The report can be accessed through the Statistics Canada Web site at <http://www.statcan.ca/>. Statistics Canada reports data on a calendar quarter basis; therefore, data is provided as of the beginning of January, April, July and October. Surveys are used to gather the estimates, and survey participants are identified by a list frame created from the Canadian Census of Agriculture.

In addition to reporting breeding and market hog inventories, farrowings, and other data NASS reports in the U.S. Hogs and Pigs Report, Hog Statistics also reports pig supply and demand, number of farms reporting, average number of pigs per farm reporting, prices in Ontario and Manitoba, the hogs and pigs number by class in the U.S. and Canada, as well as supply and disposition of red meat in Canada. The report includes data from all the provinces in Canada. Province estimates are then aggregated into two regions, East and West. The East region is comprised of Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario. The West region is made up of Manitoba, Saskatchewan, Alberta and British Columbia. The main categories the publication focuses are the Pigs on Farm and Sows Farrowed, Pigs Born and Farrowing Intentions.

Table 8 represents the first table in the Canadian report, Pigs on Farm is similar to the hogs and pigs inventory portion of the U.S. report. This table is divided into a breeding section and an "all other pig" section. The breeding section reports the number of sows and bred gilts and boars six months and older. The "all other pigs" section reports the number of pigs under 20 kg, 20-60kg, and over 60kg<sup>3</sup> for all provinces and their respective regions for the current and last seven years. If breeding inventory numbers are higher than in years past, it might suggest herd expansion and gilt retention that would consequently result in lower prices for market hogs in deferred months. If these numbers are lower than past years, it would suggest higher prices farther out in the future. As outlined before, the weight categories give an indication of when supplies will reach the slaughter market and prices will be affected. A lighter weight hog (20 kg) will take longer to finish than a heavier weight hog (60kg). Thus, if heavier weight hog supplies are higher than lower weight hog supplies, then nearby prices will be lower than deferred months. Conversely, if there were fewer heavier hogs than lighter hogs, prices may be higher in the nearby months and lower in the deferred months. Comparisons also can be made from year to year with the same weight ranges. For instance, if lighter hog supplies are higher than in the past few years, deferred prices would be expected to be lower than before. However, if lighter weight hog supplies are smaller than in the past prices would be expected to increase. The same is true for heavier weight market hogs.

<sup>3</sup>1 kilogram is equivalent to 2.2 pounds.

Table 8. Pigs on Farm, April 1, 2007, Hog Statistics

Table 1 Pigs on farms														
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	East	Man.	Sask.	Alta.	B.C.	West	Canada	
	'000 head													
<i>January 1, 2007</i>													<i>2007/2006</i>	
														%
Breeding stock	0.3	11.3	8.4	12.1	404.3	430.8	867.2	383.2	137.3	215.4	20.8	756.7	1,623.9	99.0
Sows and bred gilts	0.3	11.0	8.0	11.8	399.0	420.7	850.8	378.0	133.0	209.4	20.2	740.6	1,591.4	99.0
Boars, 6 months plus	0.0	0.3	0.4	0.3	5.3	10.1	16.4	5.2	4.3	6.0	0.6	16.1	32.5	97.6
All other pigs	2.0	104.5	90.6	94.9	3,680.7	3,104.2	7,076.9	2,576.8	1,162.7	1,749.6	139.2	5,628.3	12,705.2	97.1
Under 20 kg	0.6	31.1	28.0	37.0	1,298.6	1,055.9	2,451.2	1,065.0	315.2	574.6	54.2	2,009.0	4,460.2	101.9
20 to 60 kg	0.8	38.1	33.6	29.9	1,230.7	1,138.6	2,471.7	716.3	364.3	605.4	39.3	1,725.3	4,197.0	94.4
Over 60 kg	0.6	35.3	29.0	28.0	1,151.4	909.7	2,154.0	795.5	483.2	569.6	45.7	1,894.0	4,048.0	94.9
Total	2.3	115.8	99.0	107.0	4,085.0	3,535.0	7,944.1	2,960.0	1,300.0	1,965.0	160.0	6,385.0	14,329.1	97.3
<i>April 1, 2007</i>													<i>2007/2006</i>	
														%
Breeding stock	0.2	11.0	8.2	12.0	403.8	426.2	861.4	380.2	136.5	213.4	20.8	750.9	1,612.3	98.4
Sows and bred gilts	0.2	10.6	7.8	11.8	398.6	416.4	845.4	375.0	132.3	207.5	20.2	735.0	1,580.4	98.5
Boars, 6 months plus	0.0	0.4	0.4	0.2	5.2	9.8	16.0	5.2	4.2	5.9	0.6	15.9	31.9	97.0
All other pigs	2.2	105.0	89.8	93.6	3,646.2	3,063.8	7,000.6	2,509.8	1,143.5	1,716.6	138.2	5,508.1	12,508.7	96.7
Under 20 kg	0.8	29.8	28.0	36.9	1,267.9	1,122.3	2,485.7	1,094.5	302.9	574.1	69.4	2,040.9	4,526.6	102.7
20 to 60 kg	0.8	39.0	31.8	29.3	1,163.1	995.4	2,259.4	706.1	367.5	570.1	36.2	1,679.9	3,939.3	89.5
Over 60 kg	0.6	36.2	30.0	27.4	1,215.2	946.1	2,255.5	709.2	473.1	572.4	32.6	1,787.3	4,042.8	97.9
Total	2.4	116.0	98.0	105.6	4,050.0	3,490.0	7,862.0	2,890.0	1,280.0	1,930.0	159.0	6,259.0	14,121.0	96.9

**Table 9. Sows farrowed, Pigs born and Farrowing Intentions, April 1, 2007, Hog Statistics**

Table 2 Sows farrowed, pigs born and farrowing intentions														
2007		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	East	Man.	Sask.	Alta.	B.C.	West	Canada
<b>Sows farrowed</b>														
January to March 2007	'000	0.2	5.5	4.5	5.8	206.4	227.5	449.9	237.7	74.1	106.1	9.0	426.9	876.8
	2007/2006 %	100.0	94.8	95.7	95.1	96.8	96.0	96.4	100.8	102.1	97.5	98.9	100.1	98.2
<b>Pigs born</b>														
January to March 2007	'000	1.6	55.3	46.2	59.3	2,167.6	2,324.0	4,654.0	2,443.1	747.9	1,084.9	90.4	4,366.3	9,020.3
	2007/2006 %	94.1	93.3	95.5	94.0	97.0	96.0	96.4	100.8	101.9	97.7	99.1	100.2	98.2
<b>Farrowing intentions</b>														
April to June 2007	'000	0.1	5.5	4.5	5.9	204.5	220.0	440.5	244.0	75.0	108.0	9.1	436.1	876.6
	2007/2006 %	100.0	98.2	100.0	98.3	98.8	99.6	99.2	101.9	106.7	100.9	92.9	102.2	100.7

The second table in Hog Statistics includes sows farrowed, pigs born and farrowing intentions. Sows farrowed and pigs born are reported for each province and region. Again the data includes estimates for the current and past seven years with each year divided into their four respective quarters. The current year also reports farrowing intentions. For example, the April 1, 2007, report would include April to June farrowing intentions (Table 9). These numbers would be analyzed the same as those in the Quarterly Hogs and Pigs report produced by NASS.

### United States and Canadian Hogs and Pigs

Because of requests from United States pork industry participants, a joint publication from NASS and Statistics Canada has been released every February, April, August and October since April 2005. The report can be accessed at <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1624>. The United States and Canadian Hogs and Pigs Report contains tables reporting all hogs and pigs inventory, breeding herd, market hogs, sows farrowed and pig crop for the current year and past five years for each quarter. The current year also is stated as a percentage relative to last year's values. The report includes tables with each country's individual inventory estimates and a table summing both countries' aggregate hog supply. In order to determine an aggregate estimate between the two countries, some adjustment must be made because each country uses a different quarter reporting system. The reported March inventory for both countries is found by adding the United States March 1 inventory with the Canadian April 1 inventory. The June inventory is determined by summing the U.S. June 1 inventory and the Canadian July 1 inventory. September and December aggregate estimates are calculated similarly.

The combined report also contains information regarding estimates of breeding stock and market hogs by weight for each province for the previous and current year. These estimates are listed as of the first day of the month the report is released. For instance, if the report was released April 2007, this portion of the report would contain tables with the specified data as of April 1, 2006, and April 1, 2007. The breeding stock segment reports the number of sows and bred gilts and boars six months or older. The market segment labeled "All Other Pigs" reports the number of pigs under 20 kg, 20-60 kg and those over 60 kg, similar to the first table in Statistics Canada's Hog Statistics report. A total is then determined and reported for each province. Supply expectations and resulting price impacts can be determined using the same intuition as that described earlier for the NASS Quarterly Hogs and Pigs Report.

### Conclusion

USDA-NASS's Quarterly Hogs and Pigs Report provides hog inventory information to nearly every sector of the pork industry. Used as a way to monitor supply numbers, market participants and analysts are able to utilize the information in order to forecast future price moves. By reporting numbers concerning both market inventory and breeding inventory, specific information involving different sectors of the industry may be analyzed and examined. This publication can aid users of the report to better interpret and understand the data in order to make more educated decisions that will affect their position in the hog market.

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