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# U.S. Pork Production Rises on a Smaller Base of Breeding Animals

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Approved by the World Agricultural Outlook Board.

Between 2000 and 2012, U.S. federally inspected pork production increased by almost 24 percent, even as the U.S. inventory of breeding animals decreased by more than 9 percent (fig. 1). The key factor that explains this phenomenon is the gain in production resulting from a rapid increase in litter rates, i.e., the number of pigs per litter. But there are other factors contributing to this trend as well: namely, heavier slaughter weights and strong imports of Canadian swine for finishing in the U.S. These three factors have enabled greater pork output on a lower base of capital investment in the form of breeding animals.

Growth in litter rates makes it possible for the U.S pork industry to produce the same or greater numbers of pigs with fewer sows (fig. 2). From December 1999 to February 2007, the annual growth in quarterly litter rates, according to NASS, averaged about 0.5 percent. From March 2007 to August 2011, this growth rate increased dramatically to 2.0 percent. The rise was mostly attributable to advances in breeding herd genetics and improvements in the management and care of sows during gestation and farrowings. Since 2007, the hog industry has enhanced its selective breeding methods to develop sows that produce and nurture more piglets. In addition, specialized vaccines were developed to combat swine diseases—swine circovirus, in particular—that increased the mortality of sows and piglets. In the same period, there has been growing use of swine housing innovations and labor practices, improving the comfort and survivability of sows and their piglets and contributing to larger hog production.

It appears, however, that this growth in litter rates is beginning to slow, averaging just 1.2 percent between September 2011 and August 2012. This could signal that the industry is exhausting the gains from new technology adoption. It is also possible that high feed costs reduce producer incentives to save weaker newborn pigs.

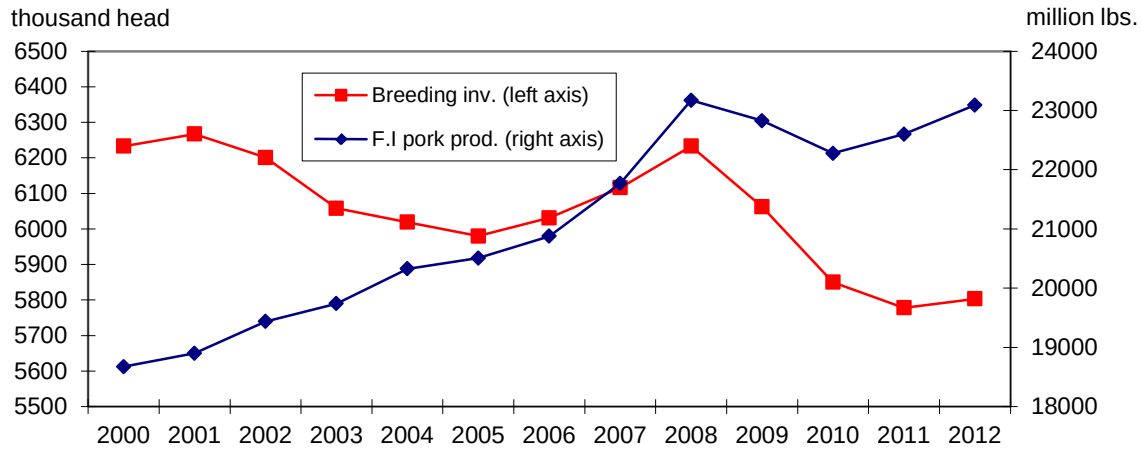
Other factors have also enabled producers to increase pork production with a smaller inventory of breeding sows. Among these is a steady increase in average dressed weights of hogs slaughtered in federally inspected processing facilities (fig. 3). Average dressed weights increased from 194 lbs in 2000 to almost 206 lbs in 2012. The increase in slaughter weights over time indicates that producers respond to processor premiums paid for heavier

animals. Processors pay premiums for heavier animals to lower fixed processing costs and, thus, total average processing costs. Heavier carcasses contribute to production increases per unit of production and processing inputs.

The development and use of ractopamine, a beta-agonist, is a technical innovation that serves to accelerate the development of lean (meat) rather than fat—and therefore of carcass weights. Ractopamine is widely used by U.S. hog producers as a ration additive late in the animal's life, functioning to direct feed conversion to lean tissue rather than to storage as fat. Ractopamine usage allows animals to achieve optimal slaughter weights faster, resulting not only in savings on feed but also in environmental benefits such as reduced production of manure and methane. However, despite the adoption of Maximum Residue Limits (MRL's) for ractopamine by the Codex Alimentarius Commission (a U.N food standards-setting body) in 2012, its use is prohibited in countries in the European Union and in China and Russia.

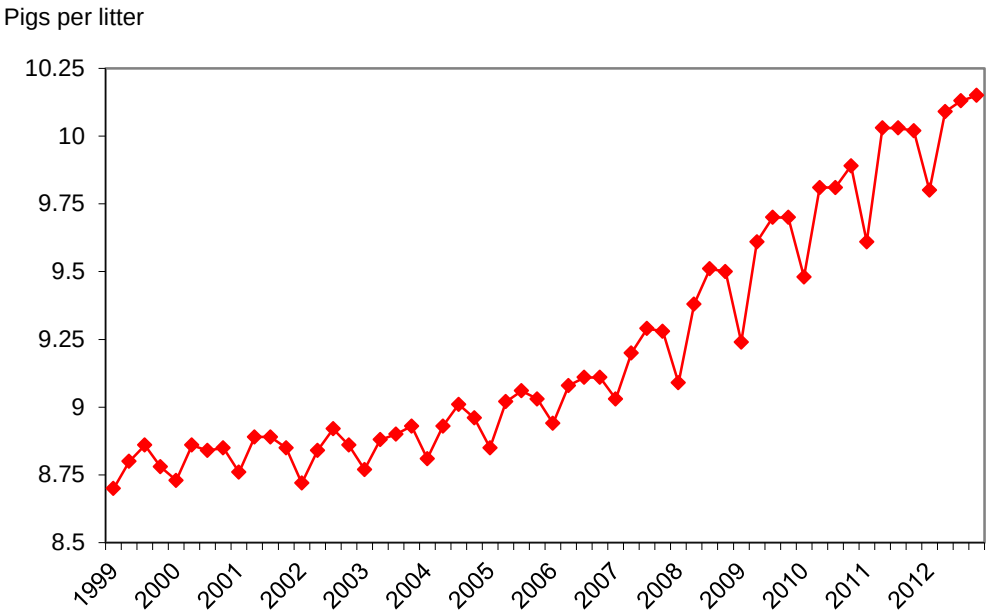
A final factor contributing to rising U.S. pork production as breeding inventories decline is the large number of swine imports from Canada (fig. 4), which more than doubled between 2000 and 2007 before declining to about 6 million head by the end of the decade. Last year, almost 6 million head of live swine were imported from Canada, 85 percent of them young animals for finishing. Finishing animals are housed mainly in barns located in Corn Belt States where U.S. feed production and slaughter facilities are concentrated. Variations in swine imports are partially attributable to exchange rate fluctuations and a smaller supply of Canadian hogs. However, Canada remains an important source of finishing animals and slaughter hogs, last year accounting for 6 percent of U.S. hog slaughter.

**Figure 1. U.S. pork production vs. Dec. 1st inventory of breeding animals, 2000-2012**



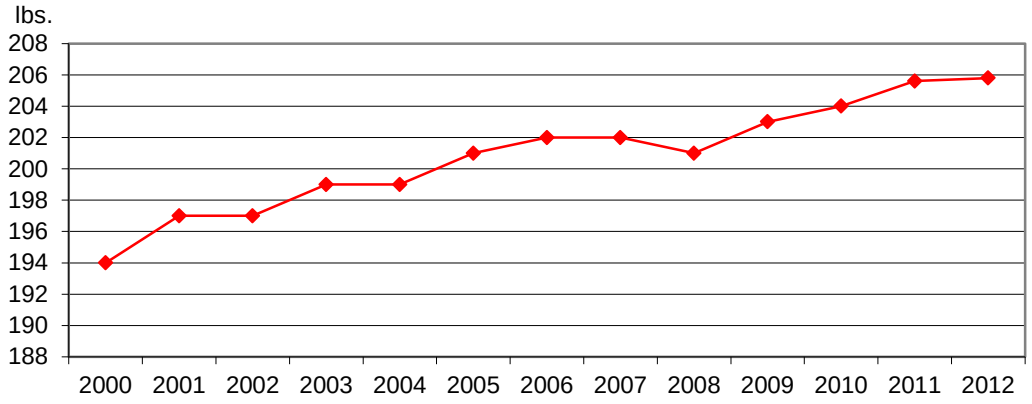

Source: USDA\NASS. http://quickstats.nass.usda.gov/

**Figure 2. Quarterly U.S. litter rates, 1999-2012**



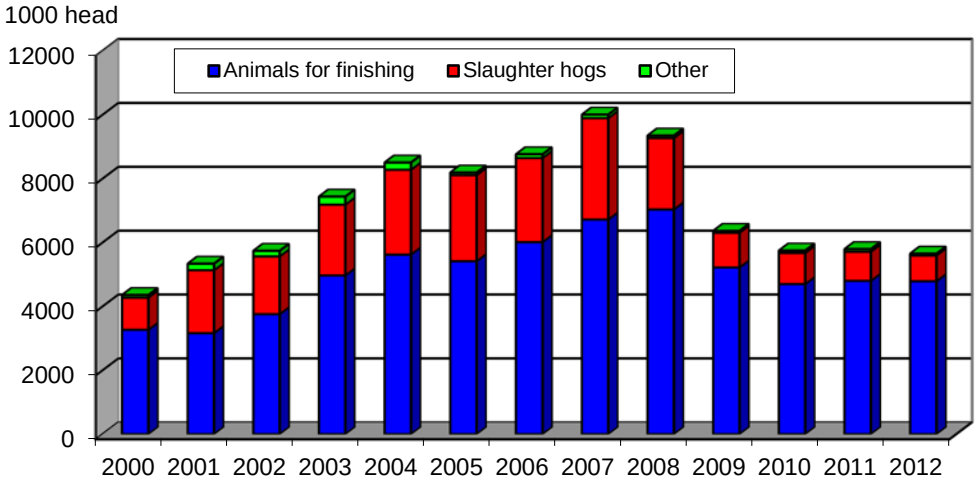

Source: USDA/NASS. http://quickstats.nass.usda.gov/.

**Figure 3. Average dressed weights of F.I. slaughtered hogs, 2000-2012**




Source: USDA\NASS. http://quickstats.nass.usda.gov/

**Figure 4. US imports of Canadian swine, 2000-2012**




Source: USDA ERS. http: www.ers.usda.gov data-products livestock-meat-international-trade-data.aspx