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Grist for the Mills—New Opportunities in the U.S. Flour Milling Sector

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The recent merger of Horizon Milling and ConAgra Milling to form Ardent Mills has created the largest structural change in the history of the U.S. flour milling industry. Major drivers of consolidation in the U.S. flour milling sector are:

- **changes in consumer preferences**
- **consolidation in the bakery sector**
- **the drive to cut costs through improvements in efficiencies**
- **changing business strategies**

The recent consolidations do not spell doom for the remaining players; rather they create opportunities for these companies to compete by identifying niche products, geographic advantages, and strategic customers and partners.

Introduction

The U.S. flour milling industry has traditionally been a stable business with high volume, low growth and tight margins. Until recently, the structure of the industry saw very little change despite consolidation in the downstream bakery sector (e.g. Bimbo purchasing Sara Lee, liquidation of IBC), changes in consumers' tastes, and active M&A activity in the wider food and agriculture sector.

These recent and significant changes in the industry will impact wheat producers, flour buyers and the remaining industry players.

- Despite all the changes, wheat producers will have the same number of mills in which to sell their wheat. However, new mill owners and entities will be anxious to prove that they can be price-competitive to producers.

- Flour buyers will have fewer flour millers to buy from after the merger of ConAgra and Horizon into Ardent, and the coming together of Pendleton Flour Mills, Milner Milling and Cereal Food Processors into Grain Craft. There is incentive for flour buyers to shop their flour requirements where possible, which in turn provides opportunities for other flour millers.

- The post-merger/acquisition environment will challenge the remaining players to compete. There are a number of ways to do so: identify post-merger orphan customers, expand milling capacity, acquire a competitor, develop a strategic partnership, vertically integrate your mill, and/or identify new niche products such as ancient or multi-grain flours.

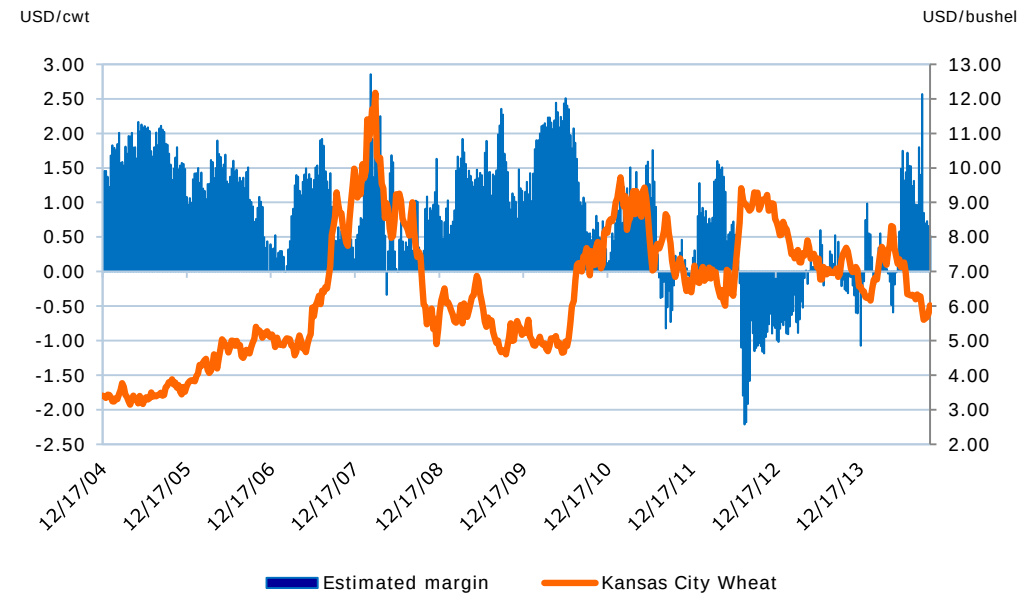
The attention gained from the recent mergers and acquisitions in the flour milling sector will stimulate those in and out of the industry to consider further mergers and acquisitions, strategic partnerships and possibly expansion. However, the cost of entering the sector has increased, with more assets in stronger hands and the remaining sector players seeing the value of their mill(s) increased, and wanting to be compensated accordingly.

The Evolution of the Industry Continues

The changing landscape of the U.S. flour milling industry is unique in that there have been a relatively large number of changes in a short period of time, and the subsequent upheaval provides opportunities. The formation of Ardent Mills is a game-changer for the industry, but certainly doesn't limit the opportunities for the remaining players. ADM still has a dominant presence in some regions, with a national presence that extends to all the major U.S. wheat-producing areas. Smaller players have been in the former big three's backyard for years and will continue to have opportunities. As with Nisshin moving into the U.S. market, there is likely to be additional offshore interest in the U.S. flour milling sector. There are several factors driving foreign interest in the U.S. flour milling sector:

U.S. flour milling insiders report that margins have improved, and it is a good time to be in the flour milling business. The volatile and high wheat prices of the last several years have eaten into flour millers' margins, but as wheat prices have come down, estimated gross margins have increased and stabilized *(see Figure 1)*. Wheat prices are the single largest factor influencing milling margins.

Figure 1: Estimated Gross Flour Milling Margins Are Becoming More Attractive, 2004-2013



Source: Rabobank, 2014

Interest in the U.S. food and agriculture sector is not confined to the U.S., as evidenced by Nisshin's purchase of Miller Milling and Chinese interest in the food supply chain. As developing countries move up the food chain and the demand for food increases, countries and companies will be reaching out to acquire assets to meet global food demand.

There are ten flour milling companies in the U.S. that have six or fewer mills which would be attractive merger or acquisition targets. While not as large as Ardent Mills or ADM, they are large enough to have both regional and, in some cases, national distribution and good market penetration in the primary markets they serve.

No Need to Write Off Industry Opportunities

Recent consolidation does concentrate more flour milling capacity in fewer and stronger hands. Sellers and buyers alike will have larger companies to deal with. At the same time, the number of mills has remained the same, and with entry of Nisshin into the U.S. market, the actual number of players has only been reduced by two. While smaller milling companies will experience challenges competing with new and larger entities, the larger consolidated mills will face the task of managing a larger enterprise and combining old corporate cultures. These internal challenges are likely to create opportunities for smaller players. Larger milling companies first face the hurdle of proving themselves in the marketplace to both wheat producers and flour buyers by being price-competitive, bringing corporate cultures together, and by standardizing sales and customer service. The clear advantage of larger milling companies is their national footprint, which will give them a competitive edge in sourcing wheat, being able to reach more customers, spreading costs over a large number of mills and bringing a larger number of products to the table.

Smaller, more regional flour millers will have to face the challenge of competing in a new landscape. Access to buyers can be addressed with quality, product variety and a smaller footprint to spread costs through increased efficiency. A competitive advantage of smaller milling businesses is flexibility when reacting to customer requests and changes in the market within specific geographies. Some of the opportunities and strategies that smaller flour mills can pursue to be competitive in this new landscape include:

- Acquiring customers lost in the process of consolidating. For whatever reason, if customers are not doing business with the new consolidated entity, regional millers are likely to have an opportunity to gain new customers.

- Smaller mills can identify potential niche markets—either in geography or products—that are left unfilled. The growing interest in ancient grains or multi-grain baked goods could be a product line used to expand their business.

- Smaller mills can take a page from Ardent's playbook and choose to expand, either through existing mill capacity or building a new mill. This strategy requires significant capital and time; therefore, target markets for any additional production should be clearly identified and understood in advance of expansion.

- Merger and acquisition remains a viable path to growth, especially in specific geographic regions or product types with lower levels of consolidation. This strategy can bring together expertise with more capital, thereby enhancing efficiency. Careful strategic planning is required to identify an acquisition target that fits the company's capabilities, as well as its geographic and long-term product strategy. While opportunities for merger and acquisition are available, ongoing consolidation will continue to further limit options and drive up the price of a future acquisition.

- Small millers may want to identify strategic partners that align from a geographic and product base, and allow increased efficiency or access to markets. Such potential partners may be found at any point in the supply chain—from sourcing and logistics to end-product distribution. Partners to provide capital can also be identified, both domestically and internationally. Identifying potential partners early allows for more dexterity to capture opportunities with new customers or niche markets.

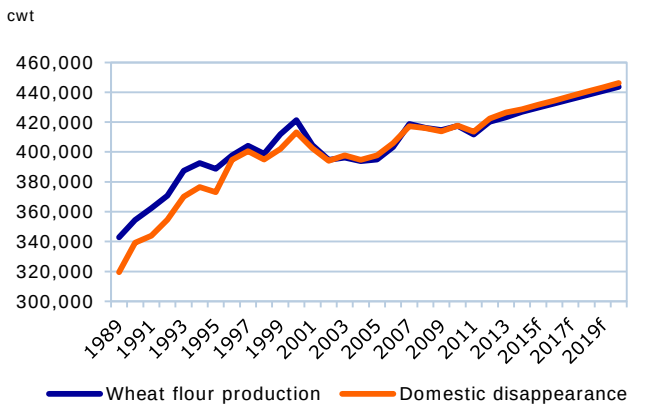
- Similar to identifying an acquisition partner, smaller flour millers, flour buyers or wheat producers could combine forces to form a vertically integrated company that would have the advantages of supply, processing and customer(s) in one entity. This model is illustrated in the New Zealand dairy industry, where the demise of the New Zealand Dairy Board allowed new processors to capture niche markets. Several of the new businesses are large dairy farmers who vertically integrated their operations to capture margins from niche markets.

Long-term Changes and Consumer Demand Are Shaping the Flour Milling Industry

The flour milling and baking industries have weathered changing diets, consolidation and rationalization due to falling demand, all in the past decade. Growth in flour consumption in the U.S. can best be described as modest, and that trend is not expected to change. Rabobank projects that production and domestic disappearance will continue to increase at a modest rate, driven primarily by population growth. Since stagnating in the early part of this century, flour production and domestic disappearance has been slowly increasing *(see Figure 2)*. Historically, production and disappearance have been in balance, so there are no flour stocks other than what is in inventory. However, consumer trends may temper domestic disappearance/demand, and consequently production—based on our current projections of less than 1 percent growth per year—to as little as 0.5 percent per year.

[1] Please see Breaking Bread, Cooking Up Success in U.S. Bakery, Rabobank Industry Note #456 – September 2014.

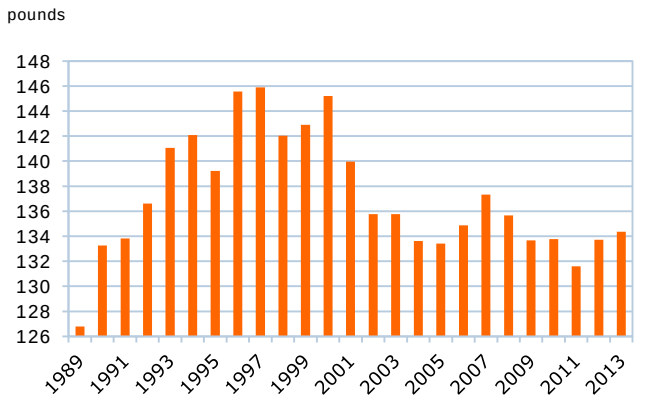
Figure 2: U.S. Flour Production and Domestic Disappearance, 1989-2019f



Source: USDA-ERS, Rabobank, 2014

Likewise, per capita consumption has shown modest growth in the past several years *(see Figure 3)*. Per capita consumption of flour hit a low point in 2004 and 2005, when the Atkins diet was at the height of its popularity. Since then, it has stabilized, as the Atkins diet went out of fashion and consumer acceptance of whole-grain foods has increased. However, the increased diagnosis of celiac disease (intolerance to gluten), the growing popularity of gluten-free diets, as well as an upsurge in the negative perception of simple carbohydrates (e.g. white bread flour) among consumers are all likely to temper significant increases in per capita wheat flour consumption over the next several years.

Figure 3: U.S. Flour Per Capita Disappearance Has Stabilized, 1989-2013

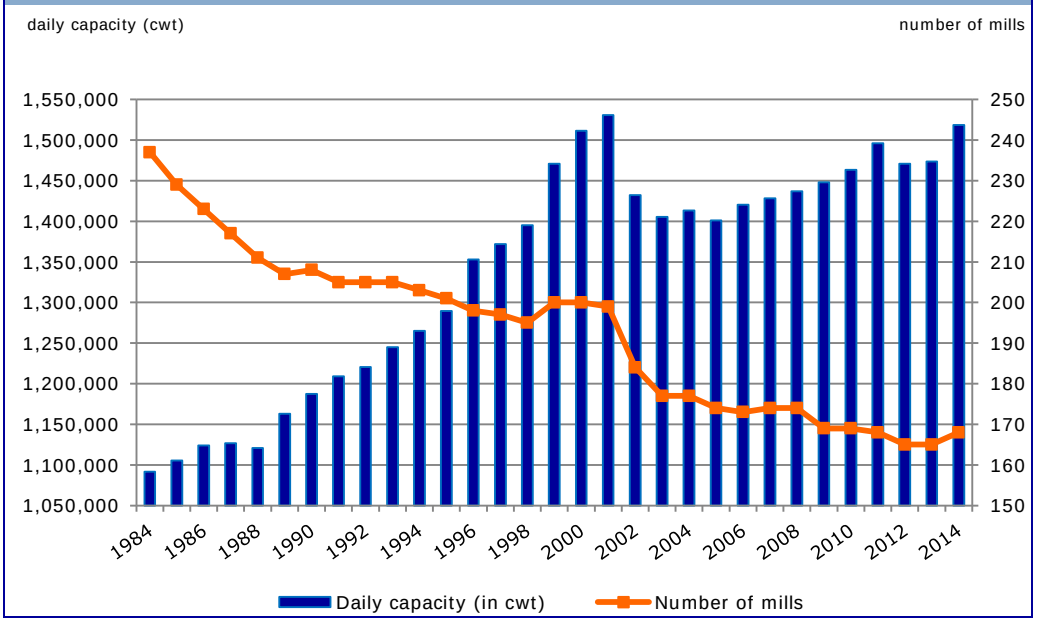


Source: USDA-ERS, Rabobank, 2014

Since 1984, the number of flour mills in the U.S. has declined by nearly one-third, while daily capacity has almost rebounded to the record level reached in 2001 *(see Figure 4)*. While mill numbers were affected by changing consumer preferences and diet, which lowered demand, a number of other factors also contributed to the decrease in the number of mills:

In the 1990s and early 2000s, consolidation among wholesale bakeries reduced both the number of bakery companies and the total number of bakeries (e.g. the acquisition of Earthgrains by Sara Lee or the demise of IBC). Consequently, flour millers reduced the number of mills and increased the capacity of the remaining mills to better match up with the fewer, but bigger bakeries remaining. Following deregulation of the railroads in the early 1980s and the increased use of unit trains for wheat delivery, better transportation networks reduced the need to have flour mills scattered across major wheat-growing areas. Wheat could now be transported to a more centralized location for milling. The flour milling industry closed older, inefficient mills and expanded capacity in existing mills, while simultaneously increasing automation, thereby reducing the cost of flour per cwt.

Figure 4: Increasing Mill Capacity Despite Declining Mill Numbers, 1984-2014



Source: Grain and Milling Annual (Sosland), 2014

As a result of bakery consolidation and improved transportation systems, investment in larger, more efficient mills is standard in the industry. This is evidenced by the fact that the remaining 168 U.S. mills (15.5 percent fewer than in 2000) have the capacity to produce nearly as much flour as was being produced by all mills together in 2000.

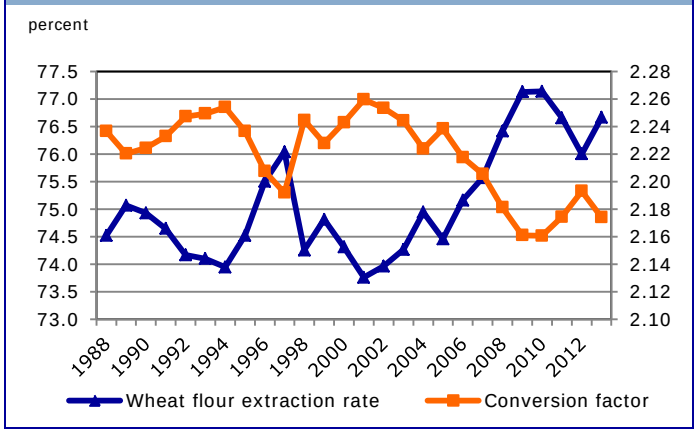
The Drive to Lower Costs Is Also Driving Consolidation

Similar to other agribusiness sectors, millers are under constant pressure to drive costs out of their operations. While this improves profitability of their mills, the key factor is pressure from customers to keep prices competitive and at continually lower levels. Millers have to understand their costs in order to maintain a competitive price advantage in the marketplace. This is particularly important considering how flour is purchased.

Buyers can price flour through the miller-set flat price (USD/CWT, FOB the flour mill) or buyer-priced component pricing. Flat-price buyers are generally smaller buyers who purchase flour in bags instead of bulk. Large flour buyers generally buy in bulk as component buyers. Under either pricing system, lowering costs through efficiencies is crucial. However, component buying, which makes up the majority of flour purchasing, requires millers to ensure constant process improvement to remain competitive. This is primarily because the buyer establishes the price of wheat, the basis for delivery and the value of an animal feed credit from the milling by-products (millfeed or middlings). The miller supplies only the milling capacity to process the buyer's wheat and is paid based on a formula containing a conversion factor which represents the extraction rate of flour from wheat. Under a component-buying agreement, the mill makes a profit from capturing excess flour generated by improving the actual extraction rate over the contract rate (i.e. below 2.3).

The national average conversation factor and/or extraction rate is better than the generally accepted industry conversation rate of 2.3 *(see Figure 5)*. For this reason, the trend toward whole wheat flour could be very profitable for the industry, as the extraction rate is 100 percent since the entire kernel is used (while typical bread flour is in the 70 percent to 75 percent kernel usage range). Buyers are driven to negotiate a better conversation factor or extraction rate with the miller due to the type of flour or volume, thereby cutting into the miller's margin potential and driving the trend toward increasing efficiency. In response, flour millers will make investments in their mills to increase efficiency or close older, more inefficient mills, as evidenced by the downtrend in mill numbers from 2000 and the corresponding increase in extraction rates.

Figure 5: Wheat Flour Extraction Rate Vs. Conversion Factor, 1988-2013



Source: USDA-ERS, Rabobank, 2014

Several factors are contributing to these improvements in efficiencies. Better processes for cleaning and conditioning have improved the efficiency of wheat milling and produced consistently higher-quality flour. Another factor driving efficiencies is the increased extraction rate, stemming from the increased demand for whole-grain flour. Since 2007/08, whole-grain flour production has increased 32 percent, as documented by World Grain magazine. Over the past two years, the rate of annual growth in whole wheat flour consumption has slowed, thereby reducing the rate of growth in extraction rates. As the demand for whole-grain foods levels out, Rabobank expects the national average extraction rate to level out in the 76 percent area. Lastly, the reduction of downtime and longer production runs are driving efficiencies higher. Downtime can be due to many different events, including equipment failure, maintenance shutdowns, accidents and switchovers in production. Downtime can be minimized through efficient production scheduling, regular planned maintenance, and consolidation of product lines into larger and more efficient mills.

In order to compete in this new environment, improving mill efficiency—and therefore driving costs out of the supply chain—is essential, requiring highly skilled management and capital for improvements. This is being accomplished chiefly by consolidating milling assets in wheat producing areas through acquisition, buying new equipment and assembling a highly skilled work force. These are the key factors that will continue to drive consolidation in the flour milling industry.

It Is Not All about Being the Biggest

The current round of consolidation has also been driven by more than just a desire to become bigger and more efficient. The strategies of the companies involved in these mergers and acquisitions ranged from a growth strategy to having a global presence, from spinning off low-margin business to concentrating on core businesses and from gaining a larger footprint to gaining better market intelligence. While the merger of ConAgra and Horizon Milling created the largest U.S. flour milling company, we believe there are opportunities for competing in the consolidating flour milling industry. Many of these strategies relate to strategic alignment and acquisition to enhance efficiency.

For example, in March 2012, the reshuffling of the flour milling industry players began with the purchase of Miller Milling by Nisshin Flour Milling of Japan. Nisshin's strategy focused on expansion to achieve a top-line (revenue) goal of JPY 1 trillion, with 30 percent coming from overseas sales, which Miller Milling fit well. In May 2014, Miller Milling furthered its expansion in the U.S. by buying the four flour mills spun out of the formation of Ardent Mills. This purchase opportunity arose as a condition of the United States Department of Justice's approval of the formation of Ardent Mills. The four mills purchased were Oakland, CA (ConAgra); Los Angeles, CA (Horizon); New Prague, MN (ConAgra); and Saginaw, TX (ConAgra). The addition of the four mills gave Miller geographic diversity, product diversity, procurement knowledge and volume. In this case, the strategy was focused on geographic reach, industry skill development and product line enhancement—not on being the biggest player.

The March 2013 blockbuster merger of Horizon Milling (joint venture of Cargill and CHS) and ConAgra Flour Milling was the result of different motives. While ConAgra began as a flour

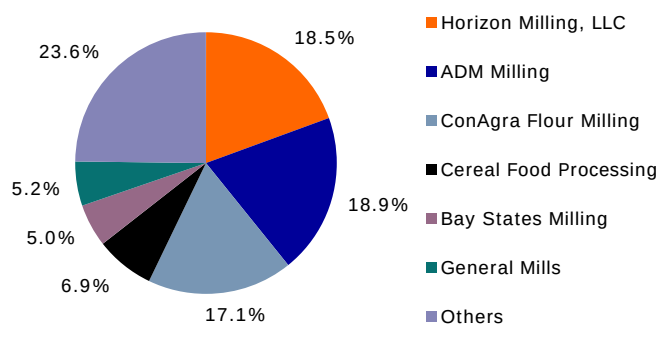
milling business called Nebraska Consolidated Mills (NCM), over the years the company has grown beyond milling into a leading consumer packaged food (CPG) company. The key objective was to become #1 or #2 in the respective CPG category. For ConAgra, the merger lessens exposure and dependency on food processing and furthers its transformation into a branded and private label CPG. In 2008, ConAgra went further in its campaign to focus business activities by selling its trading group, known as Gavilon, which marked the end of its grain trading and merchandising business. For Cargill, the merger further enhances core business activities, which revolve around moving grain, trading and processing commodities.

Also in March 2013, Milner Milling and its partner Pendleton Flour Mills (PFM) announced the purchase of Cereal Food Processors. The new merged company, named Grain Craft, now has a national presence as the third-largest flour milling company in the U.S. Before the merger, Milner Milling and PFM were considered regional players in the southeast and the northwest, respectively.

While the merger of Horizon Milling and ConAgra Flour Milling is a milestone in the structure of the U.S. flour milling industry, it also created an opportunity for Miller Milling to gain more national presence and a larger market share. Add to that the entrance of Nisshin to the U.S. market and the consolidation of assets under the Grain Craft umbrella, and the U.S. flour milling industry has stronger, smaller players who can be competitive in this new environment. The industry today has six prominent flour millers who now control 81 percent of the U.S. market, versus six millers pre-merger, who controlled slightly less of total market grind capacity at 75.2 percent.

Before 2014, the flour milling industry consisted of the big three: Horizon Milling (joint venture of Cargill and CHS), ADM Milling and ConAgra Flour Milling. These three entities alone controlled nearly 57 percent of the flour milling capacity, and each of these flour millers had nearly an identical share, ranging between 18 percent and 20 percent *(see Figure 6)*. The next three millers had just 5 percent to 7 percent share each. The remaining 15 millers had an average share of less than 1.5 percent and were generally just one-mill operations. This had been the way the industry was configured for a number of years, and little change was expected. The big three were the dominant suppliers, but the remaining millers were able to find a place in the market with product offering, customer service or by having a logistical advantage.

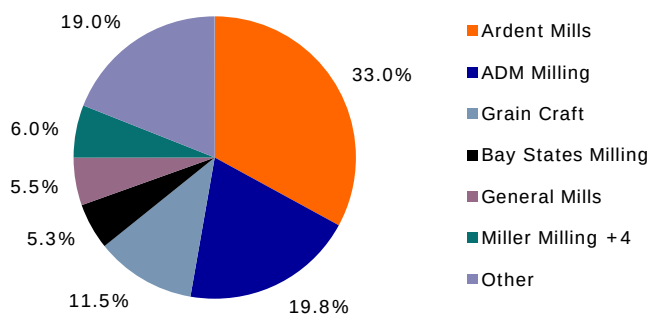
Figure 6: Market Share of U.S. Flour Millers, pre-2014



Source: Grain and Milling Annual (Sosland), Rabobank, 2014

When the landscape shifted in March 2014, Ardent Mills, ADM, Grain Craft, Miller Milling, General Mills and Bay State Milling emerged as the top six U.S. flour millers. The big two (Ardent Mills and ADM) control nearly 53 percent of U.S. milling capacity, down from their 57 percent share of the pre-merged entities. The biggest change is the dominant market position that Ardent Mills occupies over ADM, still the second-largest flour miller in the U.S. The conventional wisdom has been that ADM is the biggest loser in this shifting landscape. At this time, the company appears to be making no obvious moves to change its position. However, ADM holds prominent positions in several key wheat-producing states. The new entries, Grain Craft and Miller, have moved up to be the third- and fourth-largest U.S. flour mills in milling capacity, respectively *(see Figure 7)*. Despite all the changes, there are still 19 flour milling companies in the U.S, of which 16 have share below 10 percent. This compares to 18 pre-merger with market share below 9 percent.

Figure 7: New Players Among the Top Six Flour Millers

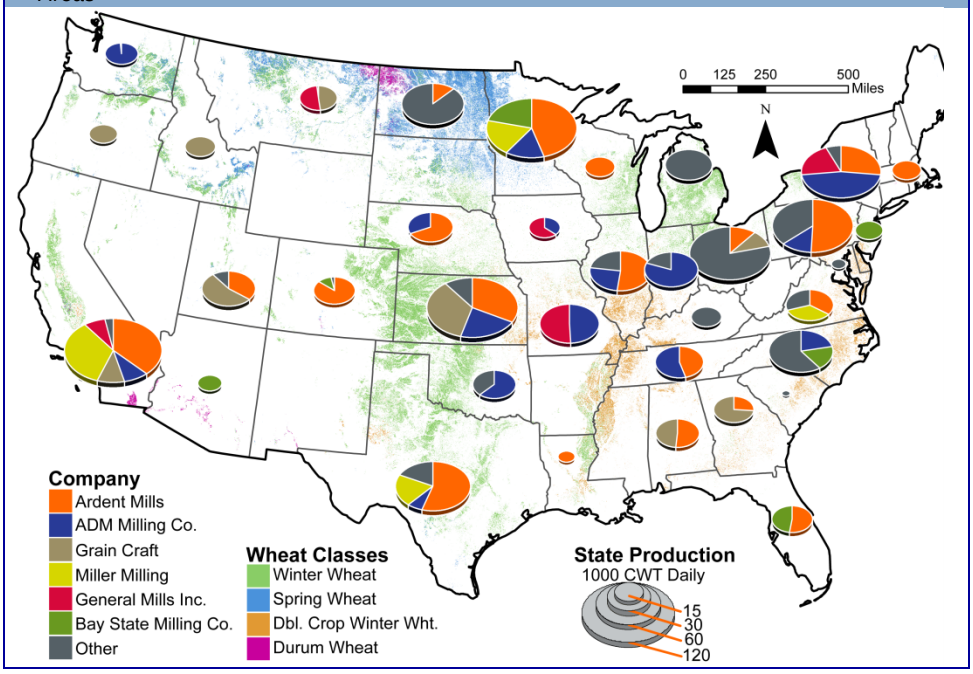


Source: Grain and Milling Annual (Sosland), Rabobank, 2014

Beyond national market share, the presence of these players in sub-markets or geographies goes a long way to better understanding competitive positioning *(see Figure 8)*. Ardent Mills is now the largest player in Spring Wheat-producing regions. Ardent Mills will have the majority of the milling capacity in California (35.9%), Illinois (52.4%), Minnesota (44.1%), Pennsylvania (50.1%) and Texas (56.1%). In the major Hard Red Winter Wheat-growing states (CO, KS, NE, OK and TX), Ardent Mills is the significant player, with 44.6 percent of the milling capacity versus ADM, which controls just 21.9 percent. Ardent Mills' dominance of the region is magnified when you break it down by state. Ardent Mills has 84.2 percent of Colorado's and 56.1 percent of Texas' milling capacity. However, in the largest U.S. wheat-producing state of Kansas, milling capacity share is fairly evenly split between ADM (23.9 percent), Ardent Mills (31.4 percent) and Grain Craft (32.4 percent). In the major Hard Red Spring Wheat-producing states of Minnesota, Montana and North Dakota, Ardent Mills again dominates, with 29.5 percent of the milling capacity. Miller Milling and North Dakota Mill & Elevator Association are a distant second (15.8%) and third (15.5%), respectively, to Ardent Mills.

While Ardent Mills gets the most scrutiny as a new entity, ADM and Grain Craft also hold significant shares of the milling capacity in several states. ADM captures a large share of the milling capacity in Indiana (79.7%), Missouri (49.0%), New York (47.0%) and Tennessee (55.4%). Grain Craft dominates the smaller markets in Alabama (48.4%), Georgia (73.9%), Idaho (100%), Oregon (100%), Montana (47.7%) and Utah (54.0%). And with the purchase of Cereal Food Processors, Grain Craft has the largest milling capacity share in Kansas, at 32.4 percent. Therefore in Kansas, the heart of U.S. wheat production, two companies control two-thirds of the flour milling capacity.

Figure 8: Ownership Concentration in the Hard Red Winter and Spring Wheat Growing Areas



Source: USDA-FSA, USDA Cropland Data Layer, Grain and Milling Annual (Sosland), Rabobank, 2014

The examination of ownership concentration by state and geographic area gives us more insight into further consolidation or investment opportunities. This closer analysis clearly shows where the investment opportunities are and are not.

- Large and small mills have existed together and competed successfully against each other for a number of years, and both have been profitable businesses. The recent merger and acquisition activity in the flour milling industry has highlighted this profitable coexistence of large and small mills, which have heightened interest from potential investors.

- The Hard Red Winter Wheat-growing regions are dominated by the big industry players. By virtue of their size and capital investment, this will be a competitive price environment for wheat sellers, as the top three flour millers will be competing to acquire their wheat. However, flour buyers will likely find that the pricing environment is led by Ardent Mills and that the other players follow their price lead. The flour mills in this region are in strong hands and are likely to remain as currently configured.

- Both sellers and buyers in the Spring Wheat area of the upper Great Plains and Midwest will take pricing direction from Ardent Mills, as they control a majority of the milling capacity in the region.

- In North Dakota, there are a number of smaller players who do specialty milling and mill Durum Wheat. These mills are either closely-held family businesses or farmer cooperatives.

- The Soft Red Winter Wheat-growing areas east of the Mississippi River are splintered between the large and many smaller millers. In Rabobank's view, this is where potential expansion and outside investment is possible due to the fragmentation. This area produces several varieties of wheat and is located close to many bakers and food processors (e.g. in the Chicago area).

- Similarly, the Pacific Northwest offers opportunities to further expansion and investment due to the several varieties of wheat grown there, export opportunities from PNW ports and wheat imports from nearby Canada.

Conclusion

This period of mergers and acquisitions in the flour milling sectors was capped off by the largest merger and structural change in the history of the industry. With the formation of Ardent Mills, the conventional wisdom was that opportunities in the flour milling sector were limited, if any. As we have discussed, we believe the opposite is true. To those outside the sector, the formation of Ardent Mills has highlighted the industry's profitability and made evident that opportunities do exist. The industry has weathered low-carb diet and bakery consolidation, which resulted in declining per capita flour consumption and mill closings. In response, flour millers have responded by investing and creating more efficient mills in order to be cost-effective and profitable. Flour millers can—and have—enhanced their business by identifying new products (e.g. ancient grain flour, flat breads, etc.), finding new customers and learning to focus on their strengths (e.g. geographic, customer service, etc.). The flour milling industry has demonstrated its resilience and, at the same time, attracted the attention of outside investors, showing that there are numerous opportunities remaining in the U.S. flour milling sector.