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# A Time to Evolve

## Farming Strategies for a Challenging Ag Economic Environment

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## Summary

Although the row crop economy appears to be nearing a low point, Rabobank analysis suggests that U.S. growers will continue to face low growth, low margins, and thus low returns on invested capital, over the next five years. Against this backdrop, U.S. crop farmers will need to transform their businesses to ensure future long-term resilience, but the question is 'how?' The answer depends on a farmer's circumstances, financial position (debt capacity and ability to attract equity capital), and long-term business aspirations. Faced with tight profit margins, growers can consider one of the following strategic choices:

- **Adopt and adapt** on-farm technologies and enhanced business enterprise management that optimizes applied capital through efficient input usage.
- **Horizontal integration** to achieve greater scale efficiencies.
- **Vertical integration** with grain storage and merchandising firms to capture margins that are currently collected by other parties; and
- **Contract farming arrangements** which can help ensure offtake certainty and capital management.

The strategies above contribute to solid risk management and enhance the investment-worthiness of the farm business. Now that this year's corn- and soybean-growing season is behind us, the time is ripe for farmers to transform their business.

## Background: Farmers Have Been Facing Tough Financial Times

### Commodity Prices

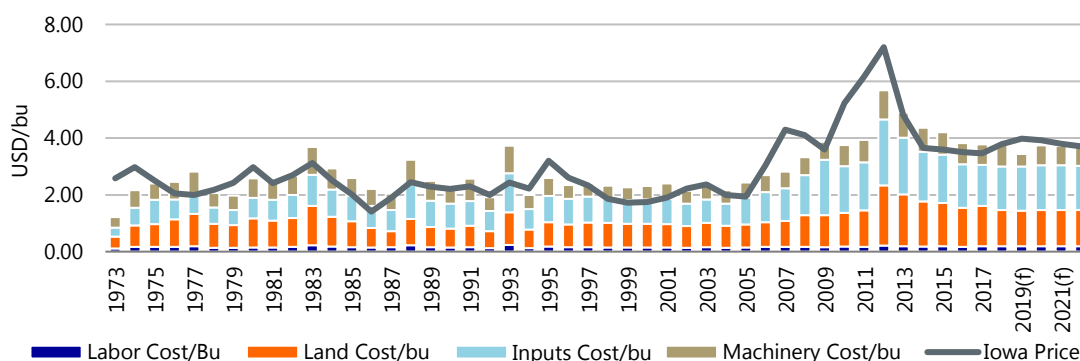
While grain prices, which drive row-crop farmer profitability, have generally stabilized, our Farm Economics baseline outlook through 2024 shows tight U.S. row crop margins over the next five years. Corn prices have fallen modestly in 2017, and are trading near the USD 3.44 /bu level.<sup>1</sup> While we expect some recovery in future years (as discussed in '[Change Is the Constant](#)',<sup>1</sup> we now expect a median U.S. farmgate corn price of USD 3.60 to 3.80/bu between 2018 and 2024), the U.S. Farm Economics Baseline calls only for low-to-mid single-digit average profit margins during the subject period, well below the high margin years of 2006 to 2013. Although the farmgate

<sup>1</sup> Based on the CBOT December corn price futures price as of 20 November 2017.

price outlook is substantially higher than in the period from the 1970s to 2006, increased costs make the potential for margins similarly tight (see Figure 1).

**Figure 1: Median U.S. Farmer Corn Production Margins (1973 – 2024f)**

*Margins Become More Normal After 2006-13 Price Spikes*



Source: RaboResearch 2017

## Crop Revenues and Farm Income

U.S. consolidated net farm income (both crop and livestock farming) fell from a peak of USD 123.8 billion in 2013 to USD 61.5 billion in 2016, equating to a drop of 50%, while the farming sector's contribution to national gross domestic product fell by 35%. Looking at crop farming in isolation, cash crop receipts dropped by 20% during this period, with slight positive year-on-year growth in receipts occurring in 2016.

Since the downturn began in 2013, profitability on an individual farm basis has been largely dependent on land ownership, with growers who farm on owned land generally producing greater profits compared to farmers operating on cash-rented or share-rented land. Growers that used debt leverage to scale up their operations (land and equipment) during the cycle upturn of 2006 to 2013 are now facing a difficult set of decisions in light of the conditions outlined in Rabobank's cautious forward outlook.

While we expect industry cash crop revenues to improve slightly in 2017, most domestic farmers will continue to experience margin squeeze and pressure on pre-tax income and cash flow, as farmgate grain prices are less likely to exceed the breakeven costs of production for corn (which we estimate for the median farmer at USD 3.65 to USD 3.75). The outlook is slightly better for soybeans (USD 9.65 to USD 9.75—these figures assume the cost of rented land). Furthermore, three consecutive years of reduced or negative revenue have compounded to exacerbate the negative financial situation U.S. row crop farmers face going into 2018.

But here's the dilemma. On the one hand, it seems logical for U.S. growers to reduce planted acreage and save on input costs in an environment where planting 100% of owned/controlled acres would result in producing at a negative margin on at least part of those acres. On the other hand, growers are unlikely to fallow land especially when financing a large fleet of farm equipment, given their desire to spread equipment financing costs over a larger base of acres, thereby resulting in lower per-acre operating costs.

## Strategies Farmers Could Follow

So, given the outlook for tight margins, the fundamental risks facing farmers (see above), and increasing export competition from Brazil, Ukraine, Russia, and other growing regions, there is clearly a need for U.S. growers to reinvent themselves. And thus, farmers should ensure they take advantage of available opportunities to improve their financial position.

The decision to undertake a strategic pivot is, however, very different for agricultural producers than it is for larger corporations, and is influenced by farm lifestyle issues. This is because many crop farming businesses are still family owned and operated and involve multiple generations, which means the succession planning dynamic comes into play. Another key factor is access to capital, especially during a cyclical downturn.

Taking the above into account, we have identified four transformational options for crop farmers to consider in preparation for the likely extended period of low growth and low returns.

## Adopt & Adapt

The most logical, attractive, and most-likely-to-succeed option for crop farmers to pursue is adopting proven, cost-reducing, on-farm technologies that optimize input usage and produce greater yield per input dollar spent. While this strategy can be confused with 'precision farming', the key here is investing thoughtfully, based on selected data and technological tools that add value. An elegant yet simple example of this includes fertilizer measurement and management tools that can help detect nutrient deficiencies (and redundancies), thereby providing decision support for variable rate fertilizer applications.

Long-term strategic plans in tight margin conditions mitigate risk by including reasonable commodity prices, such as the ranges projected by Rabobank's [U.S. Baseline outlook](#). Adapting business operations should also include adjusting financial positions to match the long-term expectation for tight margins. This is especially true for more controllable debt costs such as farm equipment and machinery debt. In many cases, the debt coverage ratio, which takes the farm's interest expense, divided by earnings before interest, taxes, and adjustments (EBITA), is a reasonable way to budget for the long term. Using a debt coverage with a value of at least 110 to 120 percent (whereby EBITA is 10 to 20 percent higher than interest expense) when setting long-term debt plans, allows for some flexibility.

## Horizontal Integration

A second reasonably attractive option for financially sound growers is horizontal expansion through the acquisition of additional land and/or existing farming operations. Farm consolidation has been a continuous trend in U.S. farming for several decades, as growers seek to achieve economies of scale with their current crop mix and occasionally also economies of scope, through the expansion into other types of production (a grain farmer acquiring a potato farm or other vegetable production business, for example) in an attempt to leverage agricultural production know-how in another product category. Another option is shifting a portion of the operations to organic, which at present offers attractive profit economics if the initial costs of conversion can be reasonably managed. Tight margins will only intensify the drive for this strategy as farm businesses will require more acres to support family lifestyles.

## Vertical Integration

A third option for farmers is to become more vertically integrated within their own value chain. Forward integration provides value creation opportunities for crop farmers, where backward integration would involve owning/jointly owning the production of crop protection chemicals, fertilizer, and seed. The principal opportunity we see in forward vertical integration is delivering the offtake closer to the end users by buying/controlling grain storage assets either on- or off-farm (local grain elevator). Grain storage, coupled with real-time data and analytics, can provide growers with increased optionality and flexibility as to when, where, and how to sell grain. This allows them to capture higher margins through timing and merchandising, which achieves higher price realization.

## Contract Manufacturing

Crop farmers have an opportunity to reduce input and production costs and working capital requirements, and achieve greater sales certainty by engaging in contract production arrangements with food processing or consumer packaged goods companies (CPGs). This strategy is common in other parts of agricultural production. While we clearly recognize and respect farmers' entrepreneurial spirit and desire to operate independently, the inability to make adequate returns on invested capital, coupled with the need for greater transparency throughout the food production process, could ultimately render contract farming a realistic strategic alternative.

**A last option is to sell, close down the farm, or temporarily exit farming.** The decision to pursue such a strategy is complicated and might be considered as a last resort if there are few or no options for growing, stabilizing, or diversifying the farming business.

Figure 2 provides an opportunity matrix analysis for the options mentioned above. The analysis categorizes the aforementioned strategic options by probability of execution success and relative attractiveness. Using this approach, the most desirable strategic options are adopt & adapt, horizontal integration, and vertical integration.

Figure 2: Strategic Opportunity Matrix

		Probability of Execution Success	
		High	Low
Relative Attractiveness	High	Adopt & Adapt Horizontal Integration Vertical Integration	
	Low	Contract Farming Sell or Exit	Do Nothing

Source: Rabobank 2017

## The Opportunity for a Financial Reset Is Now

Two key dynamics make the opportunity for a financial reset possible at the farm level within the next five years.

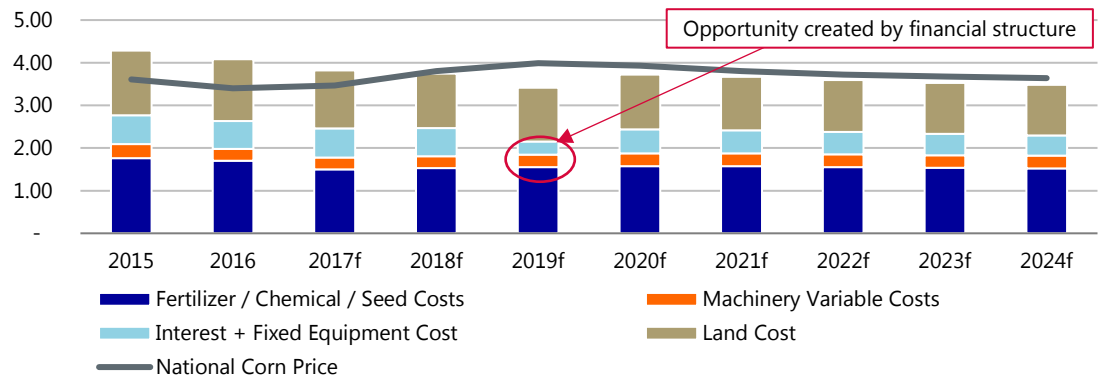
### Higher Prices

First, the 2017 Rabobank baseline outlook reflects a reduction of total planted area for corn, wheat, and soybeans combined with the potential for a weather-related supply shock, which will drive prices temporarily higher. Price increases are opportunities to reset financial stability.

### Profit Margin Relief in 2019

Additionally, the forecast profit margin in 2019 is a positive anomaly, driven by the potential of temporary retirement of farm machinery debt. As lenders have practiced some discipline relative to financial indicators, the four-to-five-year amortization terms have run their course, with remaining debt declining. With challenging economic conditions in marketing year 2017/18, total equipment debt is expected to decline in the 2019/20 period (see Figure 3).

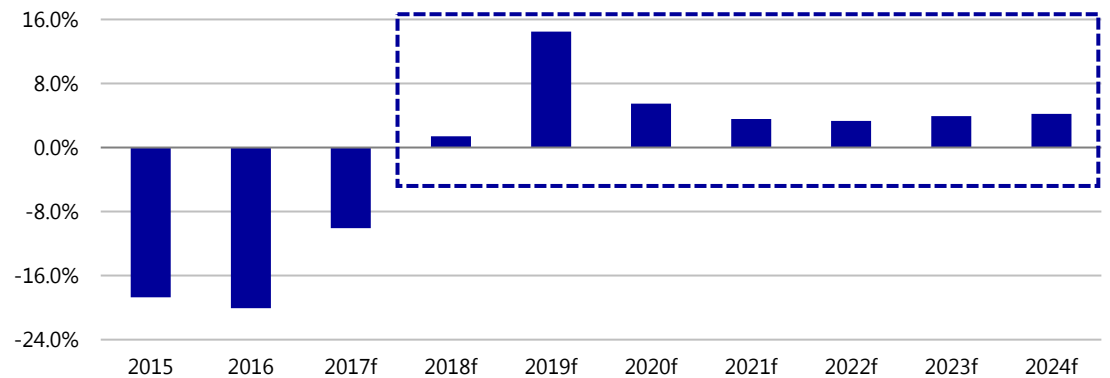
**Figure 3: National U.S. Corn Prices vs. Production Costs (2015 to 2024f)**



Source: RaboResearch Iowa Model Farm Case Study 2017

The decline in equipment debt provides a short period of increased margins. These are expected to decline again, but to stay, on average, in slightly positive territory after several years of negative margins, reaching a median of 3.9% for the baseline period (see Figure 4).

**Figure 4: Forecast Corn Profit Margins Are Low on Normalized Basis (2015 – 2024f)**



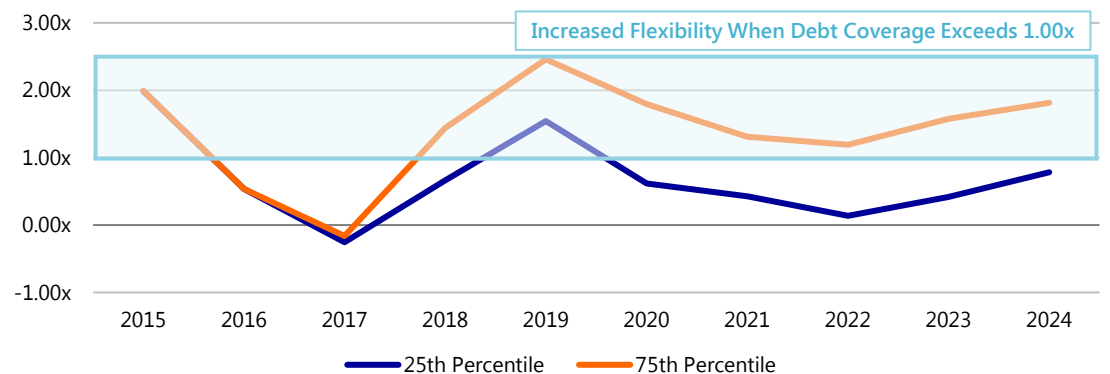
Source: RaboResearch Iowa Model Farm Case Study 2017.

Note: The forecasted profit margin in 2019 is somewhat of a positive anomaly, driven by the assumed temporary retirement of farm machinery debt, which subsequently normalizes after 2020.

## New Debt

Rabobank's model indicates that, by late 2018/early 2019, farmers will be in a position to take on new debt to fund one or more of the transformational strategies identified earlier in this report (see Figure 5).

**Figure 5: Debt Coverage Ratios (EBITA/Interest Expense)**



Source: RaboResearch Iowa Model Farm Case Study 2017

## Reference Information

### Iowa Model Farm Case Study

Rabobank's deep dive into the current state of U.S. farming economics entailed applying the U.S. G&O baseline outlook to create localized financial statements for a model corn and soybean farm with specific attributes and characteristics (listed below). The main purpose of the analysis was to better understand the farmer financial implications of the Rabobank G&O baseline, which calls for a modest U.S. farmgate environment. The charts shown in Figures 3, 4 and 5 reflect information from the Iowa Model Farm, which has the following attributes and characteristics:

- Farm size: 2,500 acres (475 acres mortgaged, 100 acres owned, balance leased)
- Mortgage value at origination (2012) = USD 675,000, 4.40% interest rate on land loan; 25-year amortization, value per acre in 2012 = USD 4,000/acre
- Equipment loan of USD 800,000 with a four-year amortization schedule that was refinanced in 2015. After 2019, we assume that the grower upgrades certain equipment and maintains equipment indebtedness of USD 700,000. Current interest rate = 4.00%; assumed forward interest rates of 4.50% in 2019 and 5.00% in 2020 and beyond.
- Crop mix: For 2017: Corn 55%, Soybean 45%. For 2018 and beyond: Corn 52%, Soybean 48%.

### Fundamental risks facing growers each day

Operational risk: The cost and availability of inputs. Field challenges such as plant disease, herbicide-resistant weeds and pest infestation.

Business continuity risk: Catastrophe losses (whether natural or human-made) can disrupt numerous parts of the value chain, from input purchasing, to harvest, to post-harvest product distribution.

Regulatory risk: Geopolitics, changes related to trade agreements, government subsidies, fossil fuel energy policies, and farmer support/incentive programs.

Environmental risk: Restrictions on crop protection chemical applications, such as Dicamba, and fertiliser usage due to drift and run-off. Related risks include climate change and water scarcity.

Product risk: Changing consumer preferences and the desire for 'choice' (GMO/non-GMO, organic vs. conventional), traceability, transparency, and improved labelling (especially important in food products for human consumption).

Financial risk: Falling commodity prices, exchange rates, interest rates, and the availability of credit.

## Concluding Comments

When faced with challenging operating conditions and a low growth, low margin, and low return outlook, companies across virtually every industry need to take one of three possible courses of action: do nothing, do something, or do something transformational. Given the current dynamics in row crop farming, Rabobank concludes that the appropriate call-to-action for growers is to transform their business models now to ensure long-term resilience. While there is always a time to plant, it is now time to evolve.

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<sup>1</sup> Note: In light of the November 2017 WASDE report, which indicated expected record corn yields of 175.4/b.u. up from 171.8/b.u. at the October report, forward corn prices and margins will likely be tighter during 2018/19 than what was published in Rabobank's annual U.S. G&O Baseline outlook report in August 2017.

# Imprint

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