Why is Meat So Cheap

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Investment banks and consultancies are making bold predictions for meat alternatives’ success: by 2030, UBS thinks meat alternatives will be a $85B global market; Barclays thinks they’ll be worth $140B; and AT Kearney thinks they’ll be worth $390B. Think tank RethinkX even predicts that, by 2030, meat alternatives’ success will have rendered the beef industry “all but bankrupt.”

There is reason for optimism. The Beyond Burger is now sold in over 53,000 outlets, including a trial at 28 McDonald’s restaurants in Canada. The Impossible Burger just launched in retail, and outsold all ground beef in its first two weeks on the shelf in Southern California. And meat giants Tyson, Smithfield, JBS, and Hormel are all launching their own plant-based meats. These new alternatives come closer than any before to mimicking meat’s taste and texture.

But they’re still not mimicking one key attribute of meat: its price (see chart below). That matters: the optimists’ predictions all assume that meat alternatives will soon be cheaper than meat. For instance, RethinkX assumes that meat alternatives “will be five times cheaper by 2030 and 10 times cheaper by 2035 than existing animal proteins.” Is that really feasible?

Animal products (in red) continue to be cheaper than their plant-based (in green) competition. Sources: meat and egg prices are national retail averages based on US Bureau of Labor Statistics data for August, 2019, compiled by the USDA’s Economic Research Service. For all other products, I found the lowest priced option.
Subsidies or Efficiencies?

The chief obstacle is not that meat alternatives are expensive; it’s that meat is absurdly cheap. Chicken sells for less than $2/lb, cheaper even than peanuts. Why?

One common explanation blames government action: the factory farm lobby has secured huge handouts that artificially suppress meat prices. Proponents of this view cite not just direct farm subsidies, but also a host of indirect government supports, like “buybacks” of excess animal products, checkoff programs to promote meat, and subsidized loans for factory farms.

Maybe. But most rich nations have untethered farm subsidies from production levels in response to WTO rules, and most economic analyses suggest newer crop insurance and direct payment subsidies only slightly lower grain costs. Nations that have eliminated farm subsidies, like New Zealand, haven’t seen rising meat prices or declines in meat consumption.

Moreover, many of the US’ indirect farm support programs — like buybacks, trade aid, and checkoffs — aim to boost demand for meat, thereby raising its price, not lowering it. That is, if they achieve anything at all: chicken, the one major meat without a US checkoff promotion program, has seen the fastest growth in demand.

A more compelling explanation is that meat is cheap because it’s efficient to produce. This may sound laughable: activists have long decried the inefficiency of animal agriculture. And they’re partly right: beef cattle are inefficient. Each Brazilian cow needs about a football field’s worth of land, 32X more land than crops producing the same amount of protein, while more efficient US cows still gulp down about 16,000lbs of water for each pound of weight they gain.

But the world’s 1.8B cattle account for just 2% of the globe’s vertebrate farmed animals. If meat alternatives are to help the other 98% (3.5B other mammals, 19B birds, and 57B farmed fish), they’ll need to be cheaper than factory farmed chicken, eggs, and fish. And those factory farms are awful, but efficient.

Take broiler chickens: genetics companies have bred them to grow so fast and frugally that they now need just 2.4lbs of feed to produce a pound of usable meat. (Though the feed is dry, while the meat is 66% water.) That feed is mainly corn and soy, which currently cost just 6 cents/lb and 14 cents/lb respectively. The only other major cost is labor and infrastructure, but factory farmers have gotten those costs down to just 10 cents/lb of bird weight.
**Production costs per pound of US broiler chicken**

<table>
<thead>
<tr>
<th>Feed</th>
<th>Grower</th>
<th>Chick</th>
<th>Other</th>
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$0.00$ | $0.10$ | $0.20$ | $0.30$ | $0.40$ | $0.50$ | $0.60$ | $0.70$ | $0.80$ | $\$\

US broiler chicken production’s (very low) costs are dominated by feed costs, while all other costs have been reduced to <25 cents/lb. Source: USDA data.

**So What?**

So what should we do in a world where we’re competing with such a ruthlessly efficient industry? Here are a few ideas:

- Focus on the costs of government inaction, not action. Factory farms have externalized their true costs on to the environment, human health, and animals. Even if they only benefit slightly from subsidies, they benefit hugely from most governments’ refusal to regulate those externalities. If the US government merely required factory farms to treat their waste, as municipalities have to, it would cost the industry $80-200B/year, roughly the US meat industry’s total annual sales.

- Focus on cheap plant-based chicken, eggs, and fish. Beef alternatives currently make up about 60% of all meat alternatives and may soon taste and cost the same as ground beef. But 96% of vertebrate farmed animals are chickens and fish, and price-competitive alternatives to them remain further away; for instance, large eggs are 10X cheaper than Just Eggs, on a weight, servings, and protein basis. To bring these prices down, we need to focus on streamlining manufacturing and optimizing the cheapest protein sources, like soy and wheat, as Rebellyous Foods is.

- Focus on government opportunities globally. We tend to focus overly on US government policy, presumably because most funders and activists are based here (96% of farmed animals are not). And the US government was likely the first to fund meat alternatives research: in 1918 the USDA funded Dr. Yamei Kin (who may be the most interesting person you’ve never heard of) to develop cheese and meat substitutes from soybeans. More recently, though, other nations have taken the lead. Canada’s government recently invested $153M over five years into optimizing plant proteins. And Singapore’s scientific research agency is advancing meat alternatives as one of three priorities under its $144M food research agenda.

To realize meat alternatives’ potential to reduce animal suffering, they’ll need to become cheaper than chicken, eggs, and fish. Governments and companies can help by requiring factory farms to internalize their true costs, while advancing research into cheaper plant proteins. We can help by keeping pressure on governments and companies to do so.