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# Cornhusker Economics

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## On the Market for “Lemons”: When Low Quality Does Not Drive High Quality Out of the Market

The “Lemons” paper by George Akerlof is the source of one of the most influential economic results of the last 50 years. The key conclusion of the paper – known as the “Lemons Result” – is that in markets with asymmetric information where the product quality is unobservable by consumers prior to purchase and use (as would be the case with credence and experience goods in the absence of mechanisms like warranties, certification and labeling), the introduction of an undifferentiated low-quality product will drive its higher quality counterpart(s) out of the market.

However, this prediction does not always hold. Instead, new products that are inferior to existing ones can, and often do, coexist with their higher-quality counterparts. A prominent example is found in the food industry where, although consumers view genetically modified (GM) products to be of lower quality than their conventional counterparts, the former have not completely saturated the market. Additional examples where low- and high-quality products and services coexist in a market with asymmetric/hidden information include the market for used cars where low- and high-quality vehicles are sold at some reference price (e.g., Kelley Blue Book) by different suppliers (e.g., car dealerships with and without in-house service; private sellers); real and fake/fabricated news offered by different online sites at essentially the same price; counterfeit

event tickets sold alongside real ones; and low- and high-quality providers of credence or experience services (like many doctors, lawyers, financial advisors, and car mechanics) coexisting and charging similar fees for the different quality services they provide.

In a research article published in *Nature’s Humanities and Social Sciences Communications* (available at [www.nature.com/articles/s41599-020-00658-w](http://www.nature.com/articles/s41599-020-00658-w)) we identify the conditions under which the introduction of a low-quality product does not drive its high-quality counterpart out of the market but, instead, ends-up coexisting with it. Using a theoretical framework of heterogeneous consumers and producers in the context of a market for quality- (or vertically-) differentiated products supplied by producers differing in their production efficiency, we show that the equilibrium quality configuration in a market depends on both the unobservability of product quality by consumers *and* the relative costs of producing the different quality products for different producers.

We focus on food because the nature of its production (e.g., biotechnology, organic, fair trade, local) not only differs across producers but generates credence characteristics that are differentially valued by consumers. Although we use the food example to motivate the analysis, the results are applicable to other situations where the above conditions apply.

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<sup>1</sup>Our example refers to the 1<sup>st</sup> generation GM products that focus on conferring agronomic benefits to producers (and constitute the vast majority of commercialized GM products). There are 2<sup>nd</sup> generation GM products that focus on providing benefits to consumers (like functional foods and nutraceuticals) and may be considered superior to their conventional counterparts.

<sup>2</sup>While some suppliers have started labeling their conventional products as either Non-GM or GM-free, based on arguments of substantial equivalence, most GM and conventional products during the past quarter century have been marketed in the United States together as non-labeled (and, thus, undifferentiated) goods.

Our analysis shows that the case in which the low-quality product drives the high-quality product out of the market is one of four possible cases that can emerge. In two other empirically relevant cases, the low-quality product coexists with its higher-quality counterpart, while in a fourth scenario the low-quality product fails to successfully enter the market.

In particular, by explicitly considering producer heterogeneity and distinguishing between the common and idiosyncratic costs of production, we are able to identify and examine four possible scenarios regarding the relative costs of producing the low- and high-quality products. We show that for the low-quality product to drive the high-quality product out of the market, the total (common plus idiosyncratic) costs associated with the production of the low-quality product must be lower than those of the high-quality product for all producers.

If, as is often the case, the technology used in the production of the low-quality product has asymmetric effects on the common and idiosyncratic parts of the production costs (by being cheaper to acquire but increasing production costs or by lowering production costs but being more expensive to acquire), at least some producers find it optimal to continue producing the high-quality product. This result is in contrast to Akerlof's Lemon's Result signifying that an understanding of producer heterogeneity and the low-quality product's relative common and idiosyncratic costs is critical in properly analyzing and evaluating economic behavior and outcomes in markets with asymmetric information where quality matters.

## References

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