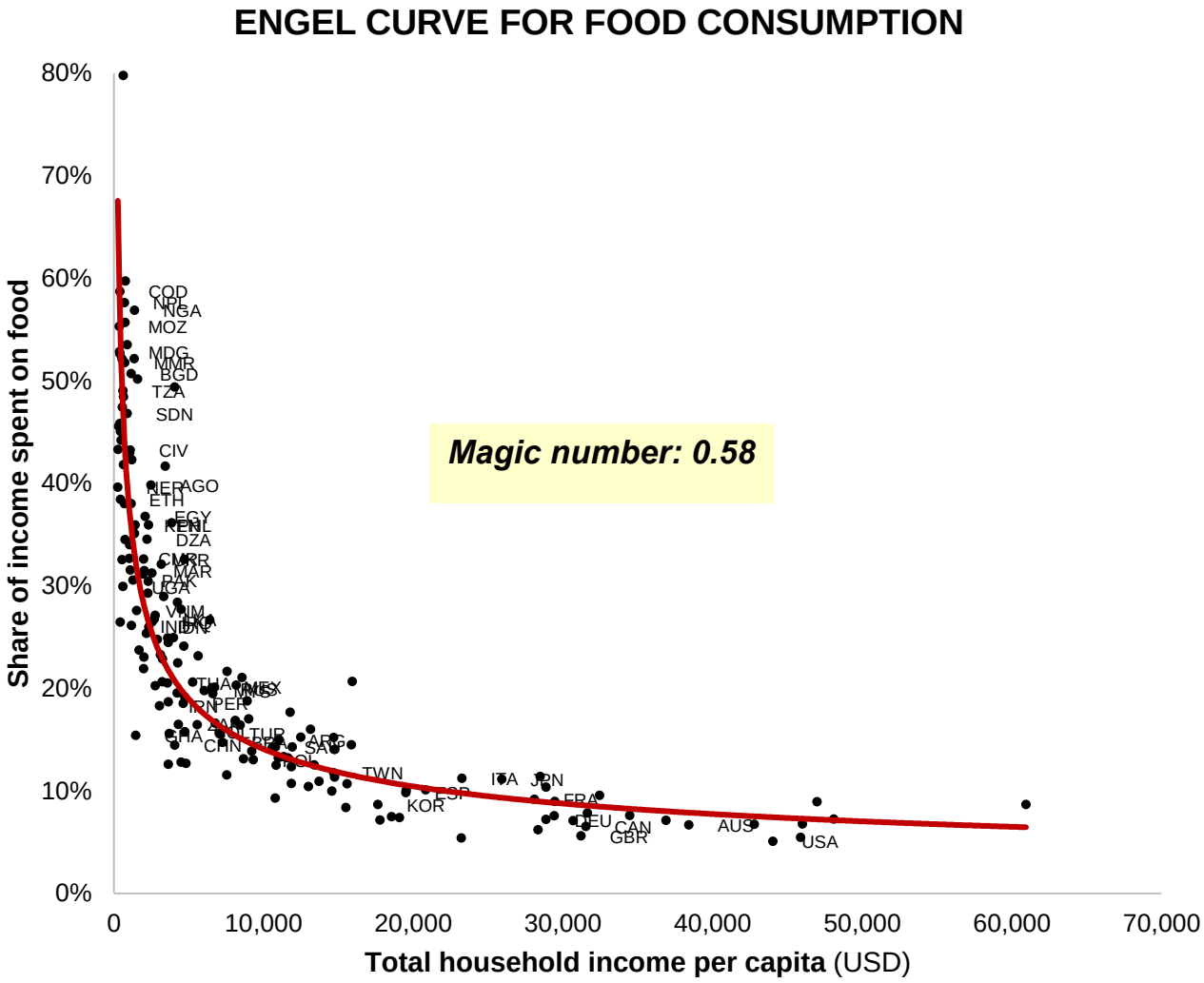
TELLUSANT QUICK READS

HOW THE ENGEL CURVE SHAPES GLOBAL FOOD SPENDING

Ernst Engel, a German economist and statistician, published what is now known as the Engel curve in 1857. He found that as household's income increased, the share of the income spent on food decreased.

Over the past 170 years, the Engel curve, in a generalized sense, has become one of the most useful concepts in economics and it permeates much of household analysis.



Note: See accompanying text for why 0.58 is the magic number
Source: World Bank International Comparison Program 2017 ed.; S. Canback analysis

The graph shows the Engel curve for global food spending (countries with pop. > 20M are indicated). The plot points fit a power curve ($y = kx^b$) incredibly well. As household income increases, the food budget as a share of income decreases in a highly predictable manner.

Let us go beyond the curve. The exponent b is the income elasticity for share of income spent on food. With some math we can calculate the income elasticity for food spending (i.e., not share, but absolute spending), as $\epsilon = b+1$.

Based on the data in the graph, the elasticity ϵ equals 0.58 and is constant across all income levels. A truly remarkable finding. No matter where you are in the world, if your income increases 10% your food spending increases 5.8%.

From a food company's perspective, 0.58 is probably the most important number one can think of. Yet we doubt that any executive knows it.

Why? Because executives are mostly not trained in math and companies do not use deep quantitative methods. There are many more pressing needs: planning, organizing, commanding, coordinating, and controlling (Fayol's definition of management).

To us, 0.58 tells a full strategic story that when built out with implications shows what a food company should prioritize. For example, if your category or brand has an income elasticity larger than 0.58 then you are gaining share of the food budget. If less than 0.58, you are a diminishing part of household food spending. This is worth quantifying and tracking.

Other important elasticities: If your category or brand has an elasticity larger than 1, you gain share of the total household income. If it is less than 0, you are in decline (from an income perspective). You have an inferior good.

These elasticities have profound resource allocation implications and help to determine acquisitions and divestitures. For example, Unilever divested Flora and other margarines because of low elasticity. They also explain premiumization opportunities, channel choices, and much more.

From one simple analysis flows a wealth of strategic implications.
